ACTUAL PROBLEMS OF MODERN SCIENCE, EDUCATION AND TRAINING

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FOREIGN INVESTMENT ATTRACTION THROUGH THE SECURITIES MARKET

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Annotasiya. Ushbu maqolada qimmatli qog‘ozlar va qimmatli qog‘ozlari bozori xorijiy investisiyalarni jalb qilish vositasi sifatida ko‘rib chiqilgan. O‘zbekiston Respublikasida qimmatli qog‘ozlar bozorining paydo bo‘lish va rivojlanish bosqichlari tahlil qilingan. Qimmatli qog‘ozlar bozori faoliyatining normativ-huquqiy asosi tadqiq etilgan. O‘zbekiston Respublikasidagi qimmatli qog‘ozlarning g‘ozirgi g‘olati tahlili ko‘rib chiqilgan.

Kalit so‘zlar. Xorijiy investisiyalar, qimmatli qog‘ozlar, fond bozori, investor, aksiya, obligasiya, yevroobligasiya, veksel', depozit sertifikati.

Аннотация. В данной статье рассматриваются ценные бумаги и рынок ценных бумаг как средство привлечения иностранных инвестиций. Анализируются этапы становления и развития рынка ценных бумаг в Республике Узбекистан. Подробна изучена нормативно-правовая база рынка ценных бумаг, а также проведен анализ текущего состояния ценных бумаг в Республике Узбекистан.

Ключевые слова. Иностранные инвестиции, ценные бумаги, фондовый рынок, инвестор, акции, облигации, еврооблигации, векселя, депозитные сертификаты.

Abstract. This article examines securities and the securities market as a means of attracting foreign investment. The stages of formation and development of the securities market in the Republic of Uzbekistan are analyzed. The regulatory and legal framework of the securities market has been studied in detail, as well as an analysis of the current state of securities in the Republic of Uzbekistan.

Key words. Foreign investments, securities, stock market, investor, shares, bonds, Eurobonds, bill of exchange, certificates of deposit.

Introduction. The volume of foreign investment is one of the indicators characterizing the degree of integration of the country into the world community and depends on the attractiveness of the investment object. Receiving foreign investment, the conditions for attracting them is a factor that characterizes investment activities and contributes to the further development of foreign economic relations. Investment attractiveness is determined by the subjects of investment according to the general investment climate in the country, the conditions of foreign economic activity, including legal and customs.

The securities market is a natural mechanism for attracting foreign investment in the context of the emergence of global capital markets. It allows governments and businesses to broaden their funding sources beyond self-financing and bank loans. Potential investors, in turn, with the help of the securities market, get the opportunity to invest their savings in a wider range of financial instruments, thereby increasing their choice. The distribution and redistribution of resources is carried out by financial markets and financial institutions that perform various intermediary services.

The transition to market relations in Uzbekistan necessitated the formation of a stock market, which over the years has turned into a stably functioning institution with an established circle of participants and a developed infrastructure. However, until recently, its role as an effective mechanism for attracting funds for investment and stimulating production growth is insignificant. One of the most important problems in Uzbekistan is the lack of investment in the presence of obsolete facilities created in the era of the USSR. Huge financial resources are needed, which enterprises are not able to generate from internal sources. In this regard, the role and importance of the stock market in the development of the economy can hardly be overestimated. In order to ensure the inflow of investments into the real sector of the economy and prevent the emergence of crises, it is necessary to study the mechanism of the stock market in a transforming economy, the reasons for its ineffective functioning and to develop measures of state influence that contribute to the development of the stock market in the country.

Literature review. Among the foreign authors who dealt with the problems of attracting investments, the stock market and pricing should be named W. Sharp and his fundamental work "Investments"; Analysis of Securities by B. Graham and D. Dodd; the theory of reflexivity presented in the works of J. Soros. R. Tewles, B. Williams, E. Bradley, D. Garner dealt with the issues of the influence of stock market development on economic growth, ownership structure as a factor determining the model of a market economy, clarification of the causes and substantiation of methods for preventing financial crises, and development of policies for the development of national stock markets. The theoretical aspects of the formation of the market infrastructure are reflected in the works of H. Singer, P. Samuelson. The most in-depth studies in this area were carried out by specialists from the World Bank, the International Monetary Fund, the International Organization of Securities Commissions, and the World Federation of Exchanges.

Research methodology: In the scientific paper, analysis and synthesis, systematic approach, abstract-logical thinking, economic analysis, grouping, expert evaluation and comparison methods were used.

Analysis and Results. In the Law of the Republic of Uzbekistan "On the Securities Market" (new edition), securities are defined as follows, “Securities - documents certifying property rights or loan relations between the legal entity that issued these documents and their owner, providing for the payment of income in the form of dividends or interest and the possibility of transferring rights arising from these documents to other persons”. [1]

This law defines the following securities:

share - a registered equity security without a specified period of validity, certifying the right of its owner to receive part of the profit of the joint-stock company in the form of dividends, to participate in the management of the joint-stock company and to part of the property remaining after its liquidation;

a bill of exchange is a non-issue security that certifies the unconditional obligation of the drawer or another payer specified in the bill of exchange to pay a certain amount to the owner of the bill at the onset of the term stipulated by the bill;

government securities - treasury bonds of the Republic of Uzbekistan and bonds issued by the body authorized by the Cabinet of Ministers of the Republic of Uzbekistan, as well as bonds of the Central Bank of the Republic of Uzbekistan;

certificate of deposit - a non-issue security that certifies the amount of the deposit made to the bank and the rights of the depositor (certificate holder) to receive the deposit amount and the interest specified in the certificate at the bank that issued the certificate or any branch of this bank after the expiry of the established period;

corporate bonds - by bonds issued joint stock companies and commercial banks regardless of their organizational and legal form;

bond - an issue-grade security certifying the right of its holder to receive from the person who issued the bond, within the period stipulated by it, the par value of the bond or other property equivalent, to receive a fixed percentage of the par value of the bond or other property rights;

international bond - a tradable equity security issued by an issuer and placed by a group of financial organizations, offered in one or more countries other than the issuer's country, initially purchased (including by subscription) only through this group;

option - an equity security certifying the right to purchase, within the period specified in it, a certain number of securities of its issuer at a fixed price;

futures on securities - a security that certifies the obligation to buy or sell a certain number of securities at a fixed price within the specified period;

treasury obligations of the Republic of Uzbekistan - emissive securities certifying the deposit by their owners of funds into the State budget of the Republic of Uzbekistan and giving the right to receive a fixed income during the entire period of holding these securities.

Securities are the most effective means of attracting foreign investment. In turn, it is necessary to dwell on the role and formation of the stock market in the Republic.

In March 1991, the Tashkent Universal Commodity and Stock Exchange was established in the Republic as an open joint-stock company. In January 1992, the stock department of the Tashkent Stock Exchange began regular trading in securities for the first time in the country. In June 1992, the Law of the Republic of Uzbekistan "On exchanges and exchange activities" was adopted. This law introduced significant changes in the activities of stock exchanges and established mandatory requirements. According to the law, the authorized capital of the exchange was to be at least 50 million rubles. Exchanges could not create any trading structures. Ministries, agencies, state committees and others could be the founders of the exchange. [8]

The Law "On Securities and Stock Exchanges" adopted on September 2, 1993 was an important event in the development and regulation of the stock market of

Uzbekistan. This Law used to regulate the activities of the stock exchange and other professional participants in this market, as well as determine the legal status of the issuer of securities (shares, bonds, treasury obligations, derivatives, certificates of deposit, bills of exchange). [3]

On April 8, 1994, in accordance with the Presidential Decree No. 745 of January 21, 1994 "On measures to further deepen economic reforms, protection of property and ensuring the development of entrepreneurship", the Republican Stock Exchange "Tashkent" was established. In 1995, branches of RSE "Tashkent" were established in Andijan, Camarkand, Bukhara and other regions. These branches began to represent the interests of the exchange in the regions of the Republic.

In accordance with the Presidential Decree No. PF-1414 of March 26, 1996, the Center for Coordination and Development of the Securities Market under the State Competition Committee of the Republic of Uzbekistan was established. The Center has been designated as the state body responsible for regulating the securities market.

On April 25, 1996, the Law of the Republic of Uzbekistan "On the mechanism of the securities market" was adopted. This law established liability measures for securities market participants, as well as for non-compliance of securities market participants with the legislation.

On April 25, 1996, the Law "On Joint Stock Companies and Protection of Shareholders' Rights" was adopted. This law stipulates the protection of the rights and interests of the joint-stock company, its organization, management, operation, liquidation of the organization, investors and shareholders.

On August 29, 1998, the Law of the Republic of Uzbekistan "On the activities of depositories in the securities market" was adopted. Under this law, a two-tier system of depositories was created: the state depository and the secondary depository.

In 1997-2000, the government short-term bond market was formed. In 2001-2006, new securities appeared: certificates of deposit, corporate bonds, bonds of the Central Bank.

On July 22, 2008 the law "On the securities market" was adopted. This law included 4 previously adopted laws: "On securities and stock exchanges", "On the mechanism of the securities market", "On the activities of depositories in the securities market" and "On protection of investors in the securities market." In 2015, the law "On the securities market" was adopted in a new edition. Simplification of the procedure for issuing securities through the introduction of information and communication technologies, the conclusion of transactions with securities are among the distinguishing features of the new law. The requirements for professional participants in this market have also been revised. This law provides for the implementation of professional activities in the securities market of the following persons:

- investment intermediary (broker, dealer),
- investment consultant,
- investment fund,
- trust manager of investment assets,
- transfer agent,
- over-the-counter cavdo organizer of securities. [1]

On August 29, 2016, thanks to the efforts of the State Competition Committee and the Korean Stock Exchange, a new Single Software and Technical Complex was launched in the stock market.

In accordance with the Resolution of the President of the Republic of Uzbekistan dated January 14, 2019 PQ-5630 "On measures to radically improve the system of management of state assets, antitrust regulation and capital market management", the Capital Market Development Agency of the Republic of Uzbekistan was established. The Agency is the successor of the Center for Coordination and Development of the Securities Market under the State Competition Committee of the Republic of Uzbekistan. The highest body of the agency is the Cabinet of Ministers of the Republic of Uzbekistan. The Agency is the state body authorized to regulate the securities market.[6]

If we analyze the history of the development of the Republic's stock market, we have now created a legislative framework and the necessary infrastructure of the stock market. The regions have a well-developed network of branches and representative offices, a technologically advanced stock exchange, and coordination and development bodies that contribute to the comprehensive development of the stock market. However, it should be noted that today the mechanism of the stock market in our country is not as efficient as in other countries. According to the results of 2017, the turnover of the largest exchange - RSE "Tashkent" amounted to only $ 37.8 million, or 0.12% of GDP. [9]

World practice shows that one of the strongest segments of the investment market in developed countries is the stock market, which helps to accumulate large investment recurrences and achieve maximum mobility of investments. At the current stage of development of the economy, the stock market is not ready to solve the problems associated with providing the economy with investment recurcities.

Despite the positive trends in the stock market, it remains one of the weakest elements of the country's financial system. In the early stages of the formation of the Uzbek stock market, it played a narrow role, one of the leaders of which was technical support for the privatization of shares of state-owned enterprises. In this regard, a primary market has emerged in Uzbekistan, but it has its own characteristics: it was used only in the process of privatization, in most cases there was almost no public placement. Thus, a large proportion of the issuance of shares by enterprises was not related to attracting investment. In modern conditions, the function of redistribution of property rights is losing its significance - privatization has ensured the emergence of private property owners. The need for a developed stock market will increase in the context of further liberalization of economic policy and deepening global integration.

The main goal of the functioning and development of the stock market in Uzbekistan should be to attract strong sources of investment to restore modern production and ensure its future growth. That is, in our opinion, such sources of investment should be directed primarily to the implementation of projects of innovative and technological modernization of the production cohaci. Improving the system of regulation of the securities market in the country requires the identification of priority areas of public policy in the stock market and the development of measures for its

further development, the formation of a unified approach to regulating the activities of both banking and non-bank financial institutions.

According to the Law "On Foreign Investments", foreign investors can invest in the territory of the Republic of Uzbekistan in the following ways:

Participation in the share funds and other property of economic societies and companies, banks, insurance companies and other enterprises established jointly with legal and (or) physical persons of the Republic of Uzbekistan;

establishment and development of business associations and companies, banks, insurance companies and other enterprises that are wholly owned by foreign investors;

acquisition of property, shares and other securities;

inclusion of rights to intellectual property, including copyright, patents, trademarks, utility models, industrial designs, company names and know-how, as well as business reputation (goodwill);

concessions, including the acquisition of concessions for the exploration, development, mining or use of natural resources;

ownership of objects of trade and services, residential buildings together with the land plots on which they are located, as well as ownership and use of land (including lease use);

by obtaining the right to identify, search and extract minerals in the subsoil in accordance with production sharing agreements, etc. [2]

Shares are the most common type of securities and one of the key financial instruments for attracting foreign investment to the Republic of Uzbekistan. Joint-stock companies began to emerge after the independence of the Republic through the transformation of large state-owned enterprises into joint-stock companies. By the end of 1994, 26.1 thousand enterprises were transformed into joint stock companies. Their shares formed the basis of the stock market in the republic. As of January 1, 2004, there were more than 1 million shareholders in the republic - individuals who bought shares on the Republican Stock Exchange. [7]

In accordance with the Resolution of the President of the Republic of Uzbekistan dated August 1, 2018 "On measures to radically improve the investment climate in the Republic of Uzbekistan": currently, the minimum capital of joint stock companies is 400 million soums; the minimum amount of equity capital of enterprises with foreign investments is 400 million soums, previously it was 600 million soums; the minimum share of a foreign investor in the authorized capital of an enterprise with foreign investment is 15% (previously 30%); a foreign founder can be a legal entity or an individual. [4]

Certificates of deposit. On July 6, 1992, the State Bank of the Republic of Uzbekistan approved the "Rules for the issuance of certificates of deposit and their circulation" for legal entities and individuals. Small batches of deposit certificates of some banks, such as Turon Bank, were put up for auction in the stock department of the Tashkent Stock Exchange. Currently, commercial banks are actively involved in the market of deposit certificates. The procedure for issuing certificates of deposit and savings is regulated only by the Central Bank of the Republic of Uzbekistan.

Bonds are another important element of the stock market of the Republic of Uzbekistan. In the bond market, corporate bonds occupy a leading position. The main

issuers of corporate bonds are commercial banks. Until 2003, private companies, limited liability companies and open joint stock companies could be issuers of corporate bonds. Then the practice was stopped. To date, about 338 billion soums worth of bonds have been issued. [10]

Government securities were issued in 1992 for a period of 20 years and were fully liquidated after 22 years. In 1996, government short-term bonds were first issued. These securities were issued by the Ministry of Finance to cover the state budget deficit. Under the terms of the emission, the main investors were resident legal entities of the country.

No government bonds have been issued in Uzbekistan since 2011. The decision to issue government securities was made only in the event of a state budget deficit. Since 2005, the state budget has been running at a surplus. However, the state budget for 2019 was planned with a deficit of 4.5 trillion soums, or 1.1% of GDP. The budget deficit was planned to be covered by state treasury obligations in the amount of 3 trillion soums.

Eurobonds. The Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated January 16, 2019 "On measures to issue and place international bonds of the Republic of Uzbekistan" was adopted. In 2019, the Republic issued debut Eurobonds worth $ 1 billion for 5 and 10 years. [11]

Municipal securities. To date, the issuance of municipal securities has not been observed in the history of the republic. However, by the Decree of the President of the Republic of Uzbekistan PF-5515 dated August 17, 2018, the issuance of bonds of the city of Tashkent was allowed to attract free funds of the population. Paragraph 17 of the decree states: "To authorize the mayor of Tashkent to attract free funds for profitable investment projects of the population through the issuance of securities in the form of bonds of the city of Tashkent or shares of newly established business companies". [5]

Conclusion and Recommendations. To conclude from the above,

1) the main legal document regulating the stock market is the Law of the Republic of Uzbekistan "On the securities market". The securities listed in Article 3 of this law are identified, from which the purchase and sale of shares, corporate bonds, certificates of deposit can be seen. The issuers of the bonds are joint-stock companies, mostly commercial banks. Positive changes are expected (Eurobonds, municipal bonds) due to the measures taken to radically improve the stock market and the investment climate in the country.

2) Although the Securities Market of Uzbekistan is unstable, there is an upward trend. However, this trend is mainly driven by the growth of the primary unorganized securities market. It is well known from world practice that the general functioning and development of the securities market depends on the secondary trading of securities. The conclusion is that the development of the secondary securities market in our country is relevant. The volume of Securities Market's turnover has not reached 3% of the country's GDP, and its role in the economy is still low.

3) The issue of government securities was resumed as a source of covering the state budget deficit and financing large investment projects of the state. These securities are purchased by commercial banks at the Uzbek Republican Currency

Exchange, and the yield of these securities is constantly updated throughout the year, as many securities are issued during the year, as many are placed.

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PRIORITIES FOR IMPROVING THE INFORMATION AND STAFFING OF THE AGRICULTURAL MANAGEMENT SYSTEM

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Annotasiya. Qishloq xo‘jaligini axborotlar bilan ta'minlash, elektrlashtirish, mexanizasiyalashtirish va kimyolashtirish kabi qishloq xo‘jaligi ishlab chiqarishini yuritish tizimining ajralmas qismi bo‘lib qolishi lozim va boshqa tarmoqlardagi kabi o‘z ilmiy ta'minoti, texnik bazasi, tashkiliy infratuzilmasi va malakali kadrlarga ega bo‘lishi zarur.

Kalit so‘zlar. Axborotlashtirish, xodimlar malakasi, menejment, ilmiy-amaliy, konsal'ting, kooperatsiya, boshqaruv qarorlari, tuzilma, axborot xavfsizligi.

Аннотация. Сельское хозяйство должно оставаться неотъемлемой частью системы управления информацией, электрификации, механизации и химизации сельскохозяйственного производства и, как и в других секторах, должно иметь собственное научное обеспечение, техническую базу, организационную инфраструктуру и квалифицированный персонал.

Ключевые слова. Информатизация, обучение персонала, менеджмент, исследования, консалтинг, сотрудничество, управленческие решения, структура, информационная безопасность.

Annotation. Agriculture should remain an integral part of the system of agricultural production, such as information supply, electrification, mechanization and chemicalization, and, as in other sectors, have its own scientific supply, technical base, organizational infrastructure and qualified personnel.

Keywords. Informatization, staff training, management, research, consulting, cooperation, management decisions, structure, information security.

Introduction. Agriculture should remain an integral part of the system of agricultural production, such as information supply, electrification, mechanization and chemicalization, and, as in other sectors, have its own scientific supply, technical base, organizational infrastructure and qualified personnel. In the current situation in the network, the Ministry of Agriculture should play the role of a catalyst for changes in the field of information, coordinator of the actions of various actors in society, to create a favorable regulatory and legal framework for the development of the industry.

Literature review. Problems of formation and improvement of management system Buzilov Yu.T., Voronin A.G., Perru F., Posunko N.S., Poshataeva A.V., Repp H.O., Ushachev I.G. Smyshlyaev V.S. such as in the scientific works of a number of foreign scholars. Extensive scientific research has been conducted and is being continued by Uzbek scientists to increase the efficiency of the network management system. In particular, Akramov E.A., Berkinov B.B., Juraev A.M., Murodov Ch., Usmanov S.N., Umurzakov O.P., Khusanov R.H., Khushmatov N.S., Farmonov T. X., Choriev K.A., Gulomov S.S., Qodirov A.M. and in the scientific work of other scientists, significant results have been achieved in improving the efficiency of the management system. However, in the scientific work of most scholars, the problem of agricultural management was considered before the years of reform. Research conducted during the years of reform is mainly of a specific nature and is carried out within the framework of a specific problem.

Research methodology: In the scientific paper, analysis and synthesis, systematic approach, abstract-logical thinking, economic analysis, grouping, expert evaluation and comparison methods were used.

Analysis and Results. An important condition for the development and implementation of science-based state policy on agricultural informatization is the scientifically and methodologically correct implementation of this process, the plans, programs and projects applied at all stages and levels. This process begins with the development and scientific substantiation of information policy and strategy, and ends with the analysis of the results and consequences of informatization and the

development of recommendations for the effective use of these results and the elimination or mitigation of its negative consequences. The scheme of scientific and methodological implementation of informatization of public administration in agriculture is shown in Figure 1.

Today, the problems of industrialization of production and information processing, ie the formation of a large complex in the field of information, the need to use high quality information in all areas of human activity and the inability to quickly generate such a large amount of information using traditional media, technology and communication occurs as a result of conflicts. These are logistical, technological and communication issues. Current problems of information provision of agricultural public administration can include industrialization of production and information processing, as well as psychological, legal, economic and social problems.

The logistical problem is to close the gap between the current state of logistics of the information sector and the level of logistics required to deliver the required information. The technological problem is explained not only by the backwardness of information technology, but also by the underdevelopment of agricultural-related sectors of the economy. Technically and technologically, there is no material and technical base for the mass production of new media for agriculture in the country.

Imports of such tools are economically unsustainable for Uzbekistan. In addition, it increases and strengthens the lag behind the developed countries of the world in this regard, thereby having a negative impact on the development of the country. The problem of communication arises as a result of the conflict between the need to provide each employee of the governing body with the necessary information and the impossibility of its implementation in the current state of the communication system in the country.

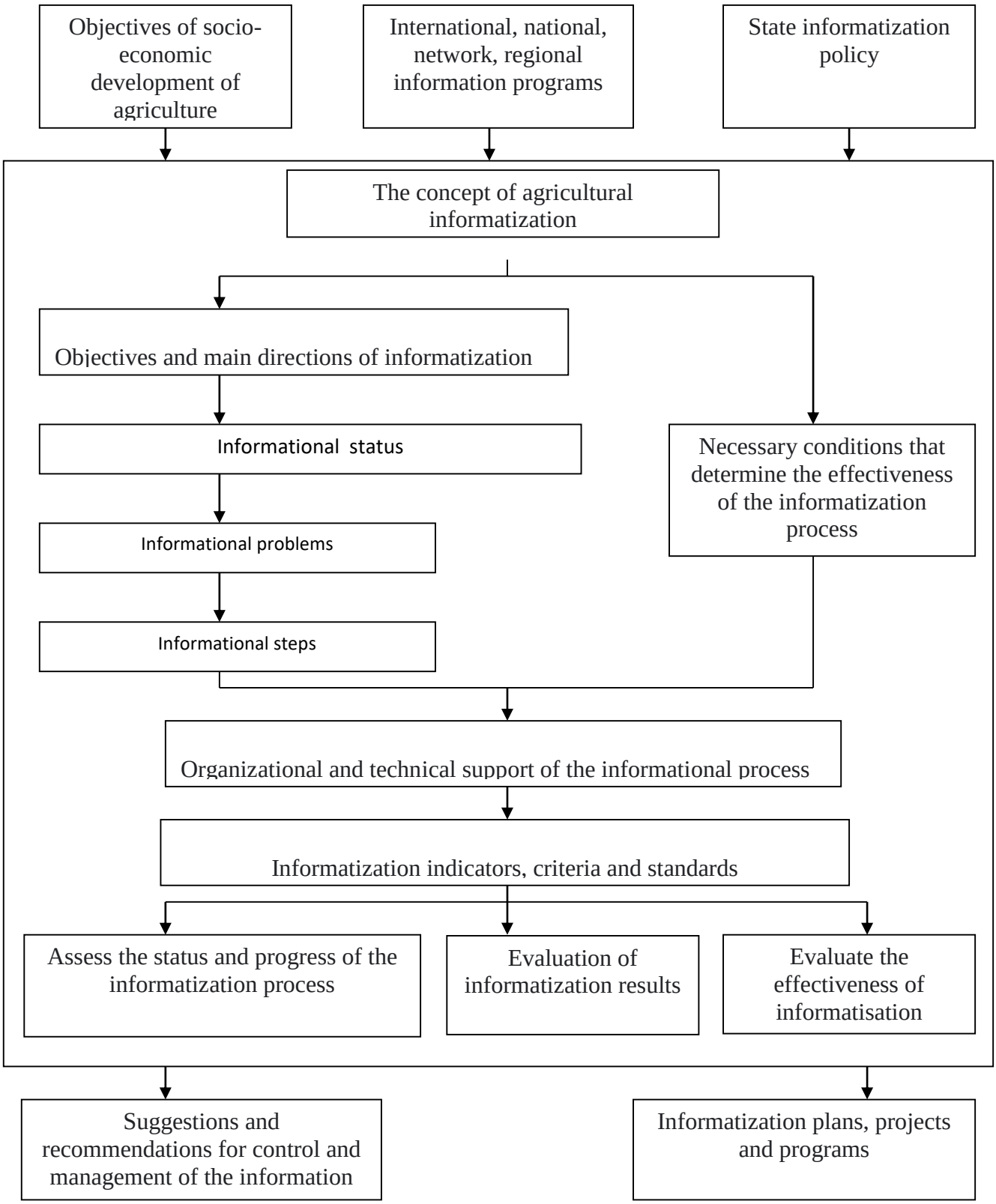
Psychological problems should include, first of all, the problem of preparing information workers to use the results of this process. This problem is caused by a number of factors, including:

- low level of computer literacy of employees of public administration bodies in agriculture;
- Insufficient information needs and lack of desire to develop them;
- delays in the adoption of innovations by the majority of management staff.

A prerequisite for achieving the expected results of the country, especially in the provision of information to agriculture, is the creation of a highly developed information system and its integration into the global information system. This will be achieved as a result of ensuring the required speed of informatization, taking into account the state and course of the informatization process around the world, pursuing an effective targeted policy of informatization of agriculture in the country.

The formation and implementation of an effective, science-based policy on informatization of the system of agricultural public administration is based on the solution of a number of problems that can be grouped into "problems of information management". This group includes the following activities:

-determine the level of management in the public sector of agriculture and management methods of informatization;



Source: Developed by the author

Figure 1. The scheme of scientific and methodological implementation of informatization of public administration in agriculture

Legal problems arise in connection with the need to legally regulate the production, processing and use of information as a result of the fact that agriculture has become a key strategic resource for public administration and the development of

society as a whole. Economic problems arise as a result of the transition to another type of economy - the "information society". It should be noted that in Uzbekistan, information has not been the main type of resource from an economic point of view.

Social problems, on the other hand, are characterized by a radical change in a person's lifestyle as a result of the influence of information. These include the exacerbation of traditional information security problems and the emergence of new ones, which in turn are caused by the following factors:

- Information security has become a leading component of national security in the process of informatization;

-Informatization has led to a decrease in the level of information security of individuals, society and the state.

Based on the above-mentioned problems of informatization of agriculture in the country, the necessary measures to improve the system of information support of public administration of agriculture in the country are as follows:

- Carrying out fundamental and applied research on informatization;

-strengthening the material and technical base of the information support system;

-development of the software industry;

- development of information infrastructure;

-training of agricultural specialists and the population in informatization;

- Development and continuous improvement of the regulatory framework for agricultural informatization;

- International and interregional cooperation in the field of agricultural informatization, division of labor, etc.

It is known that one of the important factors determining the efficiency of agricultural activities, along with an effective information system, is the level of staffing of the management system. Today, managers need to have specialized knowledge in the fields of economics, business and management, which determines the professional skills of a leader and a specialist. They need to have good legal training, extensive knowledge and skills in the basics of management and psychology that allow them to make management decisions based on team leadership.

In the context of the development of market relations, personnel policy should focus on addressing the following issues:

- First, the formation of a single educational process that provides a universal system of continuing education, taking into account the diversity and flexibility of all forms of education in agriculture;

-secondly, training and retraining of secondary and highly qualified specialists on the basis of integration of education, science and practice;

- Third, the organization of training and retraining of managers and specialists;

- Fourth, the separation of priority agricultural universities, additional educational institutions, the creation of new scientific schools on the basis of informatization of the educational process in accordance with international standards, maintaining the social and economic status of scientific and pedagogical staff.

The management staffing system should be seen as an integral part of the five interconnected subsystems. Therefore, it should be defined as a complex, multi-level

socio-economic structure, which includes subsystems for training, distribution, exchange and use of personnel, as well as a management subsystem designed to regulate their activities. Expenditures on professional retraining and advanced training of employees of agricultural management bodies, heads of farms, employees of scientific and educational institutions (maintenance of material base of educational institutions and teachers' salaries) should be financed from the state budget, regardless of their organizational and legal form.

Identifying goals and quality changes in agriculture is the initial stage of the staffing program development scheme. They are the basis for determining the basic requirements for personnel, taking into account the acceleration of scientific and technological progress, the widespread introduction of new methods of management. The current stage and prospects of development of the agricultural sector, their specific aspects and laws, determine the content and description of the main objectives of staffing in the management system:

- Satisfaction of the needs of agricultural organizations in highly qualified personnel capable of comprehensively solving technical, economic, organizational and social problems;
- Rapidly meet the needs of personnel in all sectors of agriculture, taking into account the acceleration of scientific and technological progress and the transition to new forms of management;
- optimizing the training of specialists with secondary and higher special education, bringing it in line with the real needs of the agricultural sector;
- Ensuring continuous training and retraining of managers and specialists to maintain their knowledge and skills at a level that meets modern requirements of agricultural development. Regional programs should pay special attention to the formation of a system of continuous agrarian education, the organization of agrarian university (academic) complexes on the basis of the integration of educational institutions, scientific, information, industrial and other institutions and organizations at all levels. It is also important to develop information and consulting services, including such centers on the basis of agricultural educational institutions.

Particular attention should be paid to the issues of vocational guidance of rural youth, assistance in directing graduates of rural secondary schools to study in agricultural educational institutions, including targeted and contract training.

A complete solution to the problem of attracting and adapting staff to work in rural areas requires the development and implementation of large-scale measures to improve the financial security of agricultural organizations and the integrated development of rural areas. This approach envisages strengthening the coordinating role of the state in the training, distribution, exchange and use of management personnel, while optimizing the ratio of regulatory support to the personnel system in accordance with market conditions and non-specific.

Conclusion and Recommendations. The problem of self-regulation of the personnel supply system can be solved through the establishment of regional structures on a voluntary basis, including agricultural education and research institutions, other organizations involved in training, distribution, exchange and use of personnel. In order to increase the capacity of agricultural personnel and create state mechanisms for state

regulation of the processes of its effective use, it is necessary to address the following issues:

- Introduction of mandatory certification of management staff of organizations and enterprises involved in the technological processes of agricultural production, as one of the resources, in order to increase the competitiveness of agricultural products;
- Establishment of licensing institutions for the right to manage enterprises and organizations related to the use of land resources intended for agriculture;
- Introduce the practice of compulsory employment of graduates of agricultural institutions in state agricultural organizations for at least three years at the expense of the state budget or reimburse the budget spent on the education of the graduate (or his employer);
- Ensuring that professional standards in agriculture are updated every five years;
- Development and implementation of state educational standards for higher, secondary and primary agricultural vocational education on the basis of professional standards, in cooperation with the Ministry of Higher and Secondary Special Education of the Republic of Uzbekistan;
- Accelerate the work on large-scale development of social infrastructure in rural areas in order to attract skilled workers and specialists to rural areas;

Modernization of agricultural education to achieve an international level of quality, determined by compliance with current and promising areas of sustainable and balanced development of agribusiness in the country by 2030.

At the end of the training process at all levels of the system of continuing education students will be able to apply the strategy of agribusiness development, develop a strategic approach to human resource development and management, encourage innovation in agribusiness and adapt quickly to changes in the external environment. be able to apply and apply international experience in the development and implementation of management strategies.

Consistent implementation of the above measures can serve to increase the level of information and staffing of the agricultural management system, and ultimately to increase the efficiency of the management system.

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SCIENTIFIC AND THEORETICAL FUNDAMENTALS OF HUMAN RESOURCES MANAGEMENT IN THE DEVELOPMENT OF AGROCLASTER ACTIVITIES.

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Annotatsiya. Bugungi kunda butun dunyoda integratsiya va globallashuv jarayonlari jadal rivojlanmoqda. Bu jarayon nafaqat mustaqillikka erishgan davlatlar, balki dunyoning rivojlangan mamlakatlari uchun ham jiddiy ilmiy-amaliy qarashlarni shakllantirish, bu jarayonda ishtirok etishning eng maqbul usullarini ishlab chiqish davridir. Ushbu maqolada agroklaster faoliyatini rivojlanishda inson resurslarini boshqarishning ilmiy-nazariy asoslari ochib berilgan**.**

Kalit so'zlar. Agrosanoat integratsiyasi, intelektual salohiyat, klaster, integratsiya, inson kapitali, mexnatga layoqatli, ma'lumot, kasbiy bilim, samaradorlik, sifatli mutaxassis.

Аннотация. Сегодня во всем мире стремительно развиваются процессы интеграции и глобализации. Этот процесс является периодом формирования серьезных научных и практических взглядов не только на новые независимые государства, но и для развитых стран мира, выработки наиболее оптимальных способов участия в этом процессе. В статье раскрыты научно-теоретические основы управления человеческими ресурсами в развитии агрокластерной деятельности.

Ключевые слова. Интеграция агропромышленного комплекса, интеллектуалный потенциал, кластер, интеграция, человеческий капитал, трудоспособный, образование, профессионалное знание, эффективност, качественный специалист.

Abstract. Today, the process of integration and globalization is developing rapidly around the world. This process is a period not only for the newly independent states, but also for the developed countries of the world to form serious scientific and practical views and develop the most optimal ways to participate in this process. This article reveals the scientific and theoretical basis of human resource management in the development of agro-cluster activities

Key words. Agricultural integration, intellectual potential, cluster, integration, human capital, workable, educated, professional knowledge, effective, fruitful, qualified, specialist.

Introduction. The essence of human resources includes the ability to work, education, professional knowledge, skills, health, and is determined by the structure of the socio-economic system of society. Today, the process of integration and globalization is developing rapidly around the world. This process is a period not only for the newly independent states, but also for the developed countries of the world to form serious scientific and practical views and develop the most optimal ways to participate in this process.

President Shavkat Mirziyoyev chaired a video conference on October 27, 2021 on the development of the cluster system in agriculture[2]. employment, to increase the sector's exports to $ 7 billion, and to further increase employment and incomes. Clusters will be the mainstay and leader. This system has made great strides in a short period of time. For example, in cotton alone, fiber processing has increased 2.5 times to 100 percent. In addition, yarn production has doubled, finished products have tripled, and exports will reach $ 3 billion by the end of the year.

Another important feature that distinguishes the agro-industrial cluster from others is the commonality of production cooperation and other models of interaction of economic entities, including the leading (integrating) product (cotton, viticulture, vegetables, livestock, etc.) [2].

The factor of innovation orientation of agro-industrial cluster participants is an important aspect that distinguishes the cluster. Clusters, as a rule, are formed in areas where advanced growth in production technologies and equipment and the emergence of new "market places" in the future are expected or implemented.

The activity of this agro-cluster is carried out in the following areas:

- Requirements and projects for the cultivation of our agriculture, which is fully responsive to foreign markets, the change of selection and seed production in our country;
- It is recommended to introduce a system that fully covers the process of planting, cultivation, storage, processing and sale of fruit and vegetable crops, as well as modern innovative, resource-saving technologies in the process of growing fruits and vegetables. [1]

Literature review. In the philosophy of Herbert Spencer (1820–1903), integration is understood to be the consolidation of scattered internal processes into a single whole, while disintegration is the opposite of the disintegration of a dense object as a result of the acceleration of motion. Spencer often uses the word "integration" in the same sense as the concept of aggregation. is the result of [4].

In the psychology of Jens (1883–1940), integration is understood as the influence of certain features of spiritual life on the whole complex of spiritual life[3].

The goal of the state cluster policy is to create conditions for increasing the competitiveness of the agro-industrial complex economy through the introduction of a cluster model of development[5]. To this end, the following objectives of the state agro-cluster policy should be identified:

-formation of the regulatory framework governing the development of agro-clusters;

- identification of priorities for the formation and development of agro-clusters and monitoring of ASM in the field of cluster development;
-creation of conditions for professional training of specialists and managers on the development of agro-clusters; -creation of conditions for development and implementation of agro-cluster initiatives and projects;
- Formation of a system of state support for the cluster model of ASM development and ensuring its operation.

Research methodology: The centralization of state efforts to introduce a cluster model of development, taking into account the world experience in improving the competitiveness of ASM, implies the following areas of state cluster policy:
-regulatory regulation of activities in the field of cluster development of the economy, including the development and adoption of draft regulations within which the cluster development of the national economy can be implemented, as well as state support measures in the implementation of cluster projects;
-Organizational and methodological support in the development and implementation of cluster initiatives and projects. To this end, it is planned to establish social advisory councils and commissions under the Ministry of Economy, the Ministry of Innovative Development and the authorities from among the representatives of the business community, science and education interested in the implementation of cluster initiatives and projects;
-support self-organization of small business and private entrepreneurship in the formation of clusters, including the development and promotion of cluster initiatives in the implementation of future cluster projects.

Analysis and Results. 76 cotton and textile clusters established in the country to introduce new technologies and innovations, increase labor productivity and wages[2]. Establishment and operation of agro-cluster development centers in the regions can be carried out in the following areas: - Accompanying cluster projects through the provision of organizational, information and analytical services to cluster participants[6];
-Development of business plans;
-marketing markets;
-promotion of products of cluster participants to the market;
-organization of conferences, seminars and other information events for cluster participants;
-Organization of training and advanced training of management and specialist staff of cluster participants;
-Organization of training and advanced training of managers and specialists on the development and implementation of cluster projects. In this regard, it is planned to identify basic organizations that provide educational services in the field of cluster development of ASM;
-Organization of information and explanatory work on the prospects of using the cluster model of ASM development.
The role of the state is important in the formation of a cluster of agricultural production and processing. If initially clusters were established only because of the invisible hand (competition) of the market, primarily in the modernization of transnational companies,

recently the governments of many countries are helping them, significantly influencing this process. The attractiveness of the cluster strategy, due to the diversity of directions, requires the formation of innovative clusters by the state itself. Let's see in the picture.

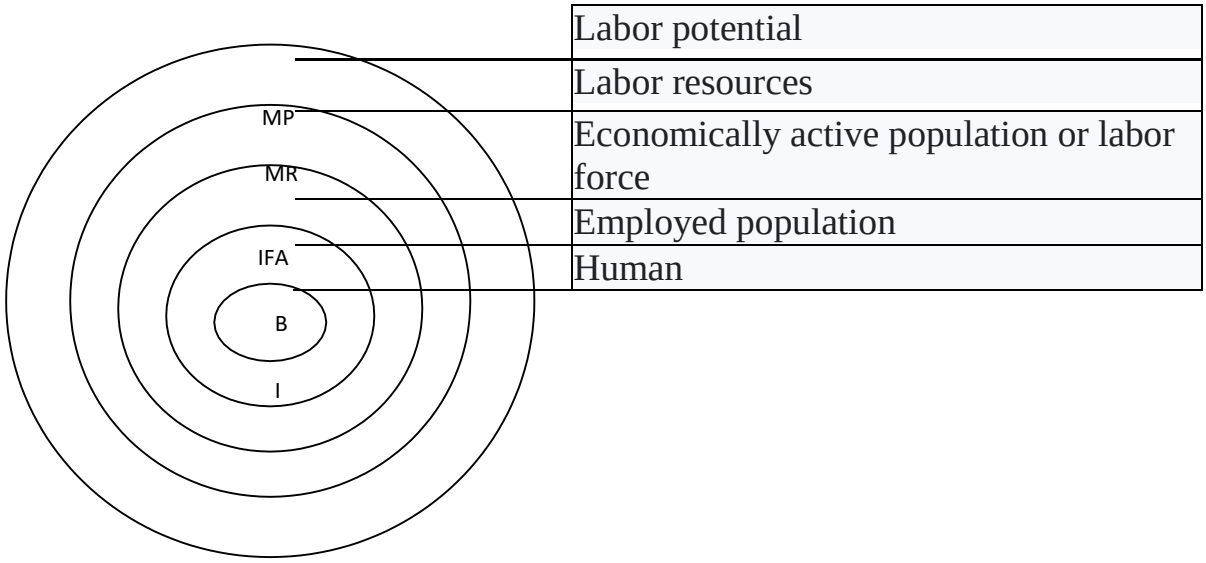

Figure 1. Formation of quantitative indicators of labor potential

One of the most sensible ways is to form clusters of agricultural production and processing of Uzbek products, not on a national scale, but on the basis of specific socio-economic conditions in the regions, based on the essence of cluster theory. The establishment of a cluster of agricultural production and processing in the Republic of Uzbekistan is aimed at[6], [8], [9]:

- further deepening of structural changes and reduction of state participation in agriculture;
- Encouraging foreign investment to create an integrated cluster system for the innovative development of the agro-industrial complex;
- creation of new jobs on the basis of introduction of effective methods of cultivation of raw cotton and the organization of deep processing of agricultural raw materials;
- Increasing the income of the rural population on the basis of increasing production efficiency and wages in agriculture.

The ultimate goal of this agricultural production and processing cluster is to produce high value-added, competitive regional products and on this basis many problems in the regions-efficient use of labor and material resources, budget replenishment, export opportunities expansion, addressing social issues.

In Figure 2. Formation of quality indicators of labor potential

Labor potential reflects the set of quality indicators of the labor force, that is, it consists in activating the human factor and ensuring its practical application in the form of realization of the potential of one worker.

Human resources - the total number of labor resources and represent the labor resources or capabilities, which are characterized by gender, age, education, professional skills, participation in one or another link of the enterprise and community production. Human resources are an integral part of a society's labor potential. Personnel is a set of employees of different professional qualification groups who are employed in the enterprise and are part of the personnel of the enterprise. The labor resources of an enterprise characterize its workforce. The staff of the enterprise interprets the personal staff consisting of all permanent and hired employees, qualified and unskilled.

Conclusion and Recommendations. The development of agro-clusters requires a number of human resource management measures to manage the use of labor potential. Based on the above considerations, the following can be concluded: in particular:

- The development of network integration requires attention to the quality of labor management. In this context, special attention should be paid to managing the use of human resources.
- it is necessary to improve the salary structure and develop a system of incentives and benefits in order to retain staff in the enterprise;

- it is necessary to improve the organization of working conditions, ie to improve the quality of work;
- In the study, the study of the distribution of young people by age group to determine their level of professional knowledge and skills will help to study the composition of the effective use of human resources.

In short, the scientific and theoretical basis of human resource management in the development of agro-clusters is the management of the use of labor potential in the development of integration processes. The system is primarily aimed at the selection and placement of modern personnel, as well as their effective use.

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DIRECTIONS FOR INCREASING INVESTMENT ACTIVITY IN THE FIELD OF WALNUT GROWING AND PROCESSING AT THE NATIONAL AND REGIONAL LEVELS

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Аннотация. Ёнғоқ ишлаб чиқариш ва қайта ишлаш соҳасида инвестицион фаолиятини ривожлантириш зарурлигини ўрганиш мавжуд манбаларни ҳар томонлама чуқур таҳлил қилиш асосида илмий-амалий аҳамиятга эга. Ёнғоқ ишлаб чиқариш ва қайта ишлаш соҳасида инвестицион стратегияси, шунингдек, бозор муносабатлари шароитида қишлоқ жойларда ёнғоқзорларни ташкил этиш усулларини ўрганишга муҳим ҳисса қўшилди. Миллий ва минтақавий даражада ёнғоқ ишлаб чиқариш ва қайта ишлаш тизимининг ташкилий-иқтисодий асосларини такомиллаштириш ва янада ривожлантириш бўйича илмий асосланган тавсиялар ишлаб чиқиш ушбу мавзунинг энг муҳим жиҳатларидан биридир.

Калит сўзлар: ёнғоқ ишлаб чиқариш, ёнғоқни қайта ишлаш, ёнғоқ ҳосилдорлиги, инновация, инвестиция, самарадорлик, агрокластер, озиқ-овқат бозори.

Аннотация. Изучение необходимости развития инвестиционной деятельности в сфере производства и переработки орехов имеет научное и практическое значение на основе всестороннего углубленного анализа имеющихся источников. Важный вклад был внесен в изучение инвестиционных стратегий в области производства и переработки грецкого ореха, а также способов организации ореховых садов в сельской местности в контексте рыночных отношений. Одним из наиболее важных аспектов этой темы является разработка научно обоснованных рекомендаций по совершенствованию и дальнейшему развитию организационной и экономической основы системы производства и переработки орехов на национальном и региональном уровнях.

Ключевые слова: производство грецких орехов, переработка грецких орехов, урожайность грецких орехов, инновации, инвестиции, эффектив-ность, агрокластер, продовольственный рынок

Abstract. The study of the need to develop investment activities in the field of walnut production and processing is of scientific and practical importance on the basis of a comprehensive in-depth analysis of available sources. An important contribution was made to the study of investment strategies in the field of walnut production and processing, as well as ways to organize walnut groves in rural areas in the context of market relations. One of the most important aspects of this topic is the development of science-based recommendations for improving and further developing the

organizational and economic framework of the system of production and processing of walnuts at the national and regional levels.

Keywords: walnut production, walnut processing, walnut yield, innovation, investment, efficiency, agrocluster, food market

Introduction. More than 2 million tons of walnuts are grown and consumed annually in countries around the world. Over the past 4 years, consumption of this product has grown by 20%. The United States, Chile, Ukraine, China and Moldova are among the largest exporters of walnuts. Walnuts play an important role in the total exports of developing countries such as Chile, Ukraine and Moldova.

According to the analysis of the Food and Agriculture Organization (FAO) in the context of global climate change, today there is a lack of food security in countries around the world. The main reasons for this are the steady growth of the population, the emergence of an unstable political situation, the sharp deterioration of the environment, the reduction of agricultural land as a result of industrialization, as well as the peculiarities of developing countries.

Uzbekistan has a huge potential in agriculture, ancient experience and rich traditions. However, for a long time, the market economy did not have a market-oriented approach and financial incentives, and insufficient funds and scientific innovations were involved in its development. As a result, the soil became dry and the soil fertility decreased. As a result, there are cases of withdrawal of agricultural land from agricultural use. The lack of specialists, armed with modern knowledge, and innovative technologies make food imports more cost-effective. Therefore, today we pay great attention to the intensive development of horticulture, expanding the market of fruit and vegetable products in the domestic and foreign markets, ensuring the integration of science and practice in the field, developing horticulture, establishing a system of disease control.

Level of study. Foreign agro-economists H.Adem & Peter H.Jerie, Larry Harper, Russian economists Nazranov H.M., Chemazokova Z.Z., Salvaridze spoke about the development of walnut production in agriculture, increasing the yield of walnuts and the development of horticulture in the foothills. Scholars such as L.H., Hashir A.A., M.Bakhshinejad have conducted research.

Scientific and theoretical solutions aimed at developing the fruit and vegetable sector in agriculture, cooperation, improving the economic basis of intensive horticulture reflected in the research work of a number of agrarian economists such as O‘.Umurzakov, N.Khushmatov, N.Ashurmetova, O.Norbekov, F.Polvonov and some of independent researchers

Research methodology. The article uses abstract-logical thinking, comparative analysis, expert evaluation methods. In studying the factors influencing the efficiency of investment activities in the field of walnut production and processing at the national and regional levels, it is important to prepare recommendations based on the analysis of domestic walnut growers and foreign experience.

Analysis and results. Investment activities in the production and processing of walnuts should take into account the following features:

- the need to create large production reserves, as the replenishment of reserves does not correspond to the processing time. This is due to the seasonal nature of walnut production in Uzbekistan or the periodicity of raw material imports;

- There is a big gap between the volume and period of production and sales of finished products, as the need for walnuts is determined by the capabilities and development strategies of the main consumers of confectionery, bread, dairy and other industries;

- special conditions of packaging, transportation and transportation of products;

- geographical incompatibility of production, processing and consumption areas.

The investment strategy in the production and processing of walnuts can be described by the following scheme (Figure 1). Walnuts are a valuable food product, as long as the technology of cultivation is followed, the environmental safety of consumption is ensured, which increases the attractiveness of the product for consumers.

The most promising area of application of walnuts is its use in the treatment and prevention and pharmaceutical industries.

The development of trade relations will expand the export of national goods, including walnuts. Adherence to world standards in the production and packaging of products will increase the competitiveness of demand in foreign markets.

Dependence on imported raw materials in the production of food products is a serious problem for our economy. The characteristics of the structure of the economy and the negative trends in the agricultural and food industries make it necessary to import raw materials. The dynamics of imports significantly depends on the situation in the foreign exchange market of the country.

The largest consumer of walnuts is the confectionery industry. Many confectioneries now use 70-75% (relative to purchase costs) of imported raw materials. They include cocoa beans, walnuts, and packaging materials. The need for imports is based on:

- tropical, subtropical and equatorial origin of raw materials;

- Insufficient raw materials for domestic production.

According to the Law "On state support of investment activities", legal regulation of investments is carried out. According to him, it can be used to support the participants of the integrated structure in the field of walnut production and processing.

- providing tax benefits and preferential terms for the use of land and other natural resources to entities implementing investment projects;

- preferential transfer of state-owned real estate to investment entities;

- Participation of government agencies in the development, examination and implementation of investment projects of significant economic and social significance;

- establishment of various specialized free economic zones;

- Provision of state guarantees for investment projects on a competitive basis, as well as loans from the local budget and interest payments;

- Priority service when investors apply to government agencies, credit institutions.

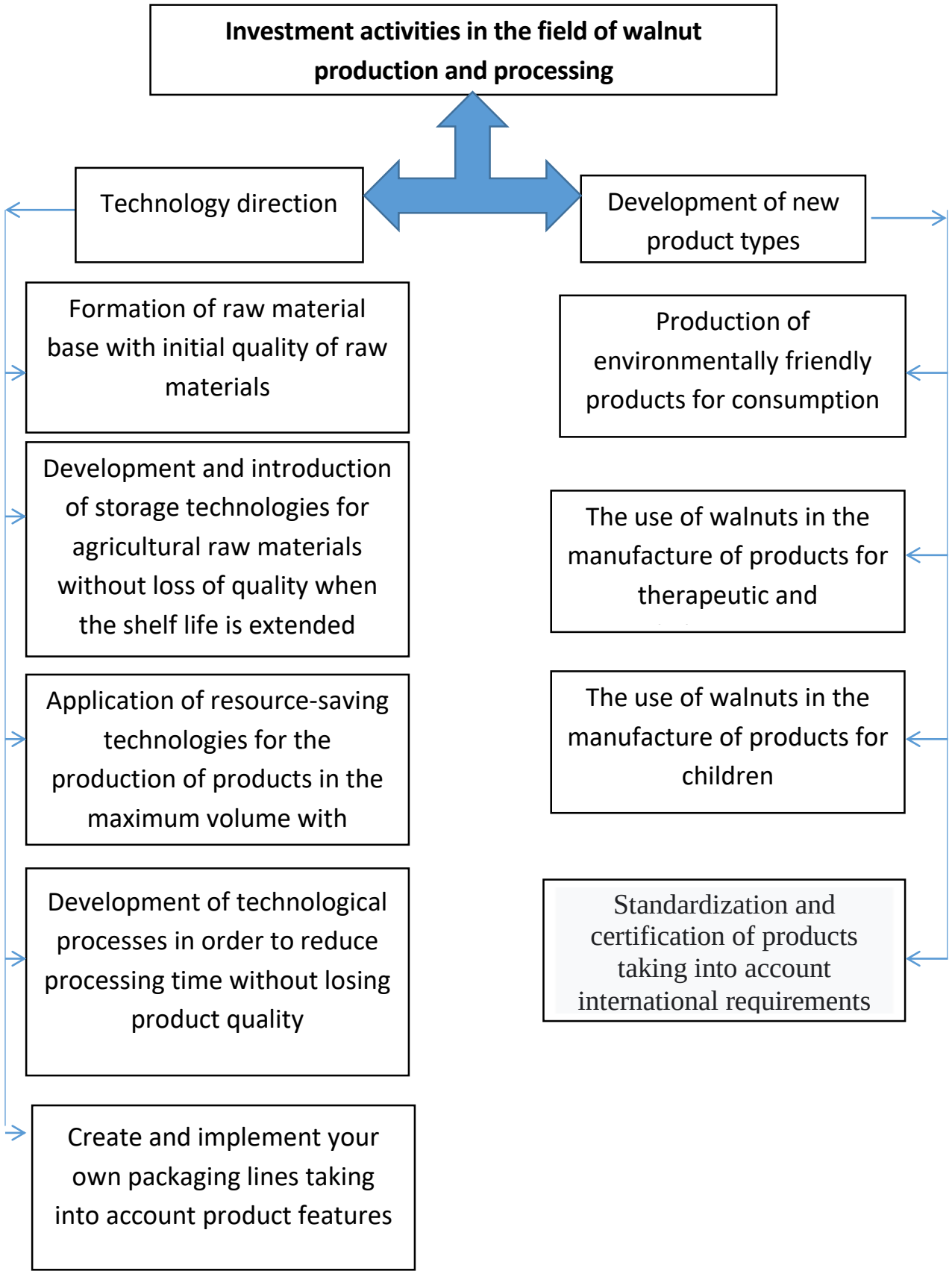

Figure 1. Areas of investment activity in the field of walnut production and processing

Conclusions and suggestions. The complex of economic sectors in which the preferential tax regime for the implementation of investment projects can be introduced includes industry, transport, agriculture, trade and others. This means that the benefits of implementing the investment strategy in the creation of an integrated scheme of production and processing of walnuts will remain. The main directions of investment policy in the walnut complex include:

1. Expansion of the raw material base of industrial processing of walnuts in the national walnut production of Uzbekistan in order to replace imports. As a result, capacities will be fully operational, production profitability and capital efficiency will increase significantly.

2. Production of walnuts and industrial processing on the basis of national raw materials.

3. Processing of refined chestnuts, which is a new product for the confectionery industry, and mastering the production of chestnut flour and dietary foods. There is no competition in this area, not even in Commonwealth of Independent States.

Industrial processing of walnuts brings high and stable income. Due to the limited area where walnuts can be grown, walnuts are in high demand in the world market and are a regular export item.

All of the above factors will increase the supply of walnut products to the confectionery industry in Uzbekistan through stable cooperative relations. Implementing an investment strategy requires concentration of material and financial flows and ensuring strong relationships with partners throughout the technological chain.

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UDC: 338.1

ORGANIZATIONAL AND ECONOMIC FACTORS OF THE ECONOMIC EFFICIENCY OF RICE CULTIVATION

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Annotasiya. Ushbu maqolada bugungi kunda qishloq xo‘jaligida sholi yetishtirish iqtisodiy samaradorligini oshirishning dolzarb masalalari xaqida fikr va muloxazalar yuritilgan. Sholi yetishtirish iqtisodiy samaradorligini oshirish mavzusida 2020-2021 yillarda amalga oshirilgan tadqiqot natijalari asosida sholi yetishtirish iqtisodiy samaradorligiga ta'sir etuvchi eng asosiy omillar tanlab olinib, mazkur omillarning mohiyati va amal qilishining iqtisodiy xususiyatlari taxlil etilgan xamda bu xaqida xulosa va takliflar ishlab chiqilgan.

Kalit so‘zlar. Sholichilikda iqtisodiy samaradorlik, xarajatlar smetasi, rejalashtirish, agrotexnologik jarayonlar,ishlarni nazorat qilish, ta'sir ko‘rsatish,innovasion omillar, lazer uskunasi, sholi urug‘chiligi, suv berish rotasiyasi.

Аннотация. В данной статье рассматриваются взгляды и соображения по организационно-экономическим факторам, влияющим на экономическую эффективность возделывания риса в сельском хозяйстве. На основе результатов исследований, проведенных в данной области, были выделены основные факторы, влияющие на экономическую эффективность возделывания риса, а также проанализированы экономические характеристики сущности и применения этих факторов.

Ключевые слова. Экономическая эффективность, стоимостная оценка, планирование, агротехнологические процессы, инновационные факторы, лазерное оборудование, семена риса, водоснабжение севооборота.

Abstract. In this article are discussed the views and considerations on organizational and economic factors affecting the economic efficiency of rice cultivation in agriculture, nowadays. Based on the results of the research carried out in this area, the main factors affecting the economic efficiency of rice cultivation were selected and the economic characteristics of the essence and application of these factors were analyzed.

Key words. Economic efficiency, cost estimate, planning, agrotechnological processes, innovation factors, laser equipment, rice seed, water supply rotation.

Introduction. According to statistics, at the beginning of September 2021, the population of Uzbekistan exceeded 35 million people, an increase of 1.8% over the previous year. Of course, this process shows that the demand of the country's population for rice products, especially rice, is constantly growing. On this basis, measures are being taken in our country to further increase rice production, increase rice yields through the widespread introduction of innovations in this area, improve the quantity and quality of rice grown at the current level of demand.

In particular, on February 2, 2021, the President of the Republic of Uzbekistan adopted a resolution "On measures to further develop rice cultivation." This decision is one of the most important in the development of rice in the country, related to improving the system of continuous and efficient rice cultivation, storage, stable supply of rice to the domestic consumer market and increasing export potential, strengthening research and widespread use of water-saving technologies in rice cultivation. is focused on problem solving.

Based on the above, we believe that today the use of solutions based on the analysis of organizational, economic and scientific-practical results, which have a strong impact on economic efficiency, is of particular importance in achieving economic efficiency in rice cultivation.

Literature review. The study of economic efficiency in rice cultivation and its scientific study is important in the development of the rice industry. In the process of studying the economic efficiency of rice cultivation, it is necessary to distinguish between the concepts of "efficiency", "efficiency" and "economic efficiency".

“In economics, the concepts of ‘efficiency’ and ‘economic efficiency’ can be defined by country, industry, enterprise, direction and individual product. The concept of economic efficiency has a broader meaning than the concept of efficiency. Economic efficiency is the cost of activities carried out during a year (in a given period) compared to the amount of net profit received as a result.

Then the higher the amount of net profit received at the expense of expenses, the higher the level of economic efficiency. Productivity is expressed in the achievements achieved as a result of the cultivation of certain activities, works and products "[2]. Based on the above considerations substantiating efficiency and economic effectiveness, it would be appropriate to draw the following conclusions about these concepts.

The ratio of the result achieved due to the improvement and rational use of production resources in agriculture to the amount of live and packaged labor expended for these purposes represents the economic efficiency of production. In human society, the production of material goods is a vital necessity, and in this process, along with increasing the production of material goods, reducing the cost of living and packaged labor for the production of goods is a key factor in achieving economic efficiency.

"Effectiveness" is an indicator of the effectiveness of any activity. The result of the effect is reflected in the efficiency. Efficiency is an indicator of how much is spent on the resources expended. The economic efficiency of production is determined by the ratio of efficiency (result) to resources expended.

In this regard, the economic efficiency reflects how much is earned for each soum spent. Various factors affect the economic efficiency of rice cultivation. “In agriculture, crop rotation, selection, agrotechnics, organic and mineral fertilizers, etc. it is not possible to achieve the intended result by applying similar control factors separately from each other in some cases.

It is effective only when they are harmoniously and rationally balanced. ”[3] Therefore, in the current market economy, it is expedient to systematize the factors influencing the economic efficiency of rice from a socio-scientific point of view.

Research methodology. In conducting this study on improving the economic efficiency of rice, extensive use was made of the analysis of theoretical data on the research topic, a monographic study of technological and economic processes, the development of measures to improve efficiency based on comparative results.

Analysis and results. Based on the above, research on increasing the economic efficiency of rice cultivation shows that we consider it appropriate to pay equal attention to all the factors that affect the economic efficiency of rice cultivation. This is because a strong focus on one factor in rice cultivation leads to a neglect of another factor.

It is known that in the cultivation of rice, depending on the specifics of the region, different factors have different effects on its economic efficiency. Research in this area shows that today we believe that the following factors have a strong impact on the economic efficiency of rice cultivation in agriculture:

- Precise planning of the process of rice cultivation on the basis of each agro-technological process, ie a clear definition of all agro-technological processes;
- Implementation of the plan for rice cultivation;
- Development of measures on the basis of analytical data in the process of implementation of the plan;
-implementation of the developed measures.

Precise planning of rice cultivation on the basis of each agro-technological process Precise determination of the cost of each agro-technological process of land

preparation for planting, sowing, fertilization, weed control and harvesting is the main criterion for ensuring economic efficiency in rice cultivation. This is due to the fact that the implementation of rice cultivation on the basis of a predetermined plan prevents unreasonable increase in costs. Implementation of the established plan for rice cultivation is a process that requires timely and quality implementation of planned agro-technologies in rice.

In agriculture, the implementation of each agro-technological measure within the timeframe and volume specified in the plan largely depends on the activities of the manager. Development of measures on the basis of analytical data in the process of implementation of the plan - this factor is one of the main factors affecting the economic efficiency of rice.

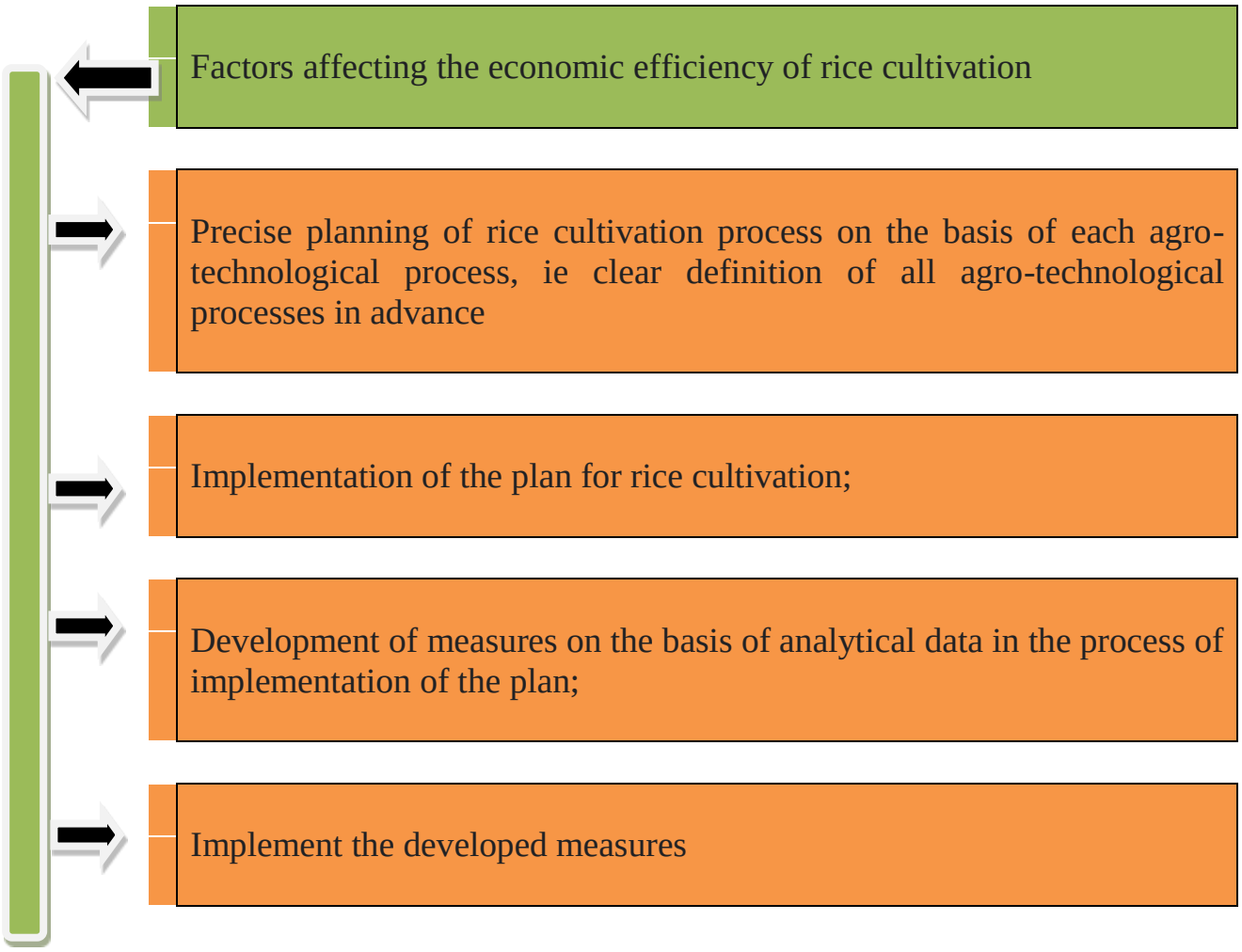

Figure 1. Factors affecting the economic efficiency of rice cultivation

Implementation of the developed measures - this factor is of particular importance due to the fact that the shortcomings identified during the analysis of the implementation of the plan will be addressed during this period. This means that the deficiencies identified in the analysis process will be rectified on the spot. This gives the following advantages:

- Shortcomings identified during the implementation of the plan will be eliminated;
- Defects are prevented during the remaining period of rice cultivation;

- Economic efficiency will be ensured on the basis of the planned implementation of rice cultivation costs.

The following innovative technologies were used in the research process using the factors that have a high impact on the economic efficiency of rice cultivation, and the relevant results were obtained:

1. Establishment of effective use of laser equipment in the preparation of rice fields - the widespread introduction of this agro-technology in rice cultivation ensures that the water in the rice fields is evenly spaced 5-7 cm. As a result, in rice fields, first of all, it provides a measure of seedling thickness, and secondly, it allows to feed rice seedlings in agro-technological processes. In areas where the thickness of the seedlings is normal and fed in moderation, of course, the yield will be high, and in turn, these conditions will have a positive impact on economic efficiency.

2. Strengthening the focus on rice breeding - it is no coincidence that today this issue is considered as the most pressing issue in the rice industry of Uzbekistan on the basis of the decree of the President. This is because proper rice seed management provides rice growers with the following benefits:

-prevents mixing of different rice seeds in rice. This has a huge positive impact on the quality of the rice harvest, improving the quality of rice consumption;

Cultivation of rice seeds allows rice growers to sow the same seeds in the second year. This saves rice growers from seed costs;

-Improvement of product quality, in turn, will increase the income of rice growers.

3. Wide application of the most effective technologies in water supply to the population - water supply in rice cultivation is one of the factors that directly affect the efficiency. Because rice is an aquatic plant. Usually, irrigation of rice fields during agrotechnology is carried out through a single waterway.

If we assume that the size of the boundaries in the rice field is on average 0.15-0.20, the cold water in the area of at least 0.05-0.07 hectares at the entrance to the first boundary will prevent the rice grains from ripening in time, so the water will heat up in these parts The rice crop ripens earlier than the water inlet. As a result, the ripened crop in the rice field will be of two types, and the ripening of the crop in areas where water enters the field will be delayed by 7-10 days.

In this process, the mechanism of rotation of water supply to rice fields ensures that the rice crop ripens at the same rate. 40ts = 4000kg) = 200kg) It is possible to add 200 kg of rice per hectare. This means that (200kg * 65% / 100 = 130) 130 kg of rice and (130 * 9000 = 1170) 1170000 soums of additional income. This means that we can earn an average of 1,170,000 soums per hectare of rice due to the use of the above technology.

Conclusions and suggestions. Based on the study and analysis of organizational and economic factors affecting the economic efficiency of rice cultivation in agriculture, we came to the following views and comments:

1. In rice-growing regions, based on the specifics of each region, we consider it expedient to accurately plan costs on the basis of each agro-technological process, that is, to accurately determine the cost estimates in advance. This is because adherence to the cost estimates for the rice growing process and increasing revenues through efficient use of costs are certainly the primary factor in achieving economic efficiency in the organization of rice.

2. Implementation of the established plan for rice cultivation is a process that requires timely and quality implementation of the planned agro-technology. In agriculture, the implementation of each agro-technological measure within the period and to the extent specified in the plan will largely depend on the activities of the managing manager.

If the leader is a demanding and enterprising person who can analyze the economy, it will not be a problem, but otherwise it will have a negative impact on economic efficiency. is considered.

3. Development of measures on the basis of analytical data in the process of implementation of the plan - this is one of the main factors affecting the economic efficiency of rice, and the shortcomings identified as a result of the analysis of the implementation of the plan are systematized. Based on the identified data, an action plan of an operational nature will be developed and implemented at the same time.

This will allow to eliminate the shortcomings identified during the implementation of the plan, to prevent the formation of shortcomings during the remaining period of rice cultivation and to ensure cost-effectiveness on the basis of the planned implementation of rice cultivation costs.

4.Studies show that the effective use of laser equipment in the preparation of rice fields allows to feed rice seedlings in agro-technological processes on the basis of ensuring the uniformity of water in the rice fields. and in turn increases the chances of achieving economic efficiency.

5. Proper regulation of rice seed production prevents the mixing of different rice seeds in rice. This has a very positive effect on the quality of the rice harvest, improves the quality of rice consumption. Improving the quality of the product ensures that the product is sold quickly and expensively in the market. This process, in turn, will serve to increase the incomes of rice growers.

6. Adequate water supply to rice fields is of particular importance in achieving efficiency. The results of the study show that the mechanism of rotation of water supply to rice fields ensures that the rice crop ripens in a uniform manner, which provides an additional 1.5-1.8 million soums of additional income per hectare of rice area.

In conclusion, we believe that the effective use of the above factors in the agro-technology of rice cultivation will create opportunities to increase the economic efficiency of rice cultivation to today's level of demand.

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EFFICIENCY OF JOINT FURROW SOWING OF COTTON WITH SUGAR BEET AND PEANUTS

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Annotasiya. Maqolada Andijon viloyatida irrigasiya eroziyasiga moyil sug‘oriladigan tipik bo‘z tuproq sharoitida g‘o‘zanini qand lavlagi va yeryong‘oq bilan birga ekishda hosildorlik va iqtisodiy samaradorlikni oshirish tajribasi asosida tadqiqot materiallari keltirilgan. Bu usul yorug‘likdan foydalanish oralig‘ida chigit jo‘yaklarini kengaytirishda juda samarali bo‘lib, havo almashinuvini yaxshilaydi. Natijada qishloq xo‘jaligi ekinlarining o‘sishi va rivojlanishi tezlashadi, ertapishar hosil yetishtiriladi, bu esa hosil sifatiga ijobiy ta'sir ko‘rsatadi.

Tayanch so‘zlar: paxta, qand lavlagi, yeryong‘oq, hamkor ekish, pichan, hosildorlik, hamkor ekinlar, egat oralatib ekish, iqtisodiy samaradorlik, rentabellik.

Abstract. The article presents research materials in the Andijan region based on experience in a typical irrigated serozem subject to irrigation erosion, when sowing cotton together with sugar beets and peanuts, the yield and economic efficiency increase. This method is very effective in widening the seed furrows between uses of light, and it also improves air exchange. As a result, the growth and development of crops will accelerate, early ripening, which has a positive effect on the quality of the crop.

Key words: cotton, sugar beet, peanuts, combined sowing, hay, productivity, combined crops, sowing furrows, economic efficiency, profitability.

Introduction. The maintenance of land productivity and its development has been considered one of the essential matters of agriculture. The population of Uzbekistan has increased 1/3 percent in the last 25 years, it means nowadays the population is 33 mln people multiplying 11,5 mln and the increase in the number of population over the next two years is forecasted.

The main task is to master new land in order to provide the increasing population and at the same time to get more harvest from the field which is used nowadays. Melioratively productive land has been already using, there is a great resource of water but it is limited. To create new agro technologies of sowing extra plants together with cotton on each ha land is deemed one of the important solutions to get abundant harvest from irrigated land.

Sowing extra plants is similar to crop rotation but it has a number of advantages. It provides to get high amount of quality harvest from a number of crops within a year. In this method, crops fully utilize the soil-air conditions and the effect of uncomfortable conditions is decreased and as a result economic productivity proliferates dramatically.

Literature review. According to Valovik [1] in China there are some types of sowing extra seeds together with cotton. For instance, wheat, rice or such crops are sown together with cotton. Especially, these methods are used in southern part of

China. In some regions it is possible to get 30 sr per ha wheat and 10,5 sr per ha cotton strand (30-31 sr per ha cotton raw material), when cotton is sown together with raps**,** they can get 11,2- 15,0 sr per ha raps seeds 7,5 sr per ha cotton strand (22-23 sr per ha cotton raw material).

It is difficult to find scientific information about sowing extra crops together with cotton. Athough sowing cotton together with podded or such plants is a historical tradition, but there isn't enough scientific information and experiments relating to this method.

In India the method of sowing cotton together with peanuts and peppers has been used. In this method after one line cotton there are 14 rows of peanuts or peppers. In this method the profit is higher than the simple method with only the same crops. (Ter-Avenesyan, [8], Ustimenko-Bakumovskiy, [9], Ruziev I.,Uraimov T. [10], Uraimov T.,Ruziev I., [11], Ruziev I., Muydinov H., Juraeva Q, [12].

Sowing cotton together with wheat and rye in the fields with wind erosion in Uzbekistan was learnt by Q.M.Mirzajonov in 1961 [4,5].

Such experiments adopted for the conditions of Uzbekistan have been carried out by Q.M.Mirzajonov [2,3,4,5,6,7] and his students. In this method cotton is sown in the deep furrow with seeds of podded crops.

According to the information by Q.M.Mirzajonov [3,4] the 20 percent of cotton was destroyed/ lost and 23 percent was undergone a loss in the simple method which cotton was sown in the regions with severe wind. When cotton was sown in field which had been harvested, the 100 percent of cotton plants could remain. The extra cotton harvest was 6,7 sr per ha.

According to the experiment in the region of Kuva in Fergana done by Q.M.Mirzajonov and M.Yusufjonov only rye and rye mixed with raps were sown as a green fertilizer. The result of the experiment showed that in this method the weight of soil decreased from 1,23-1,37 ha/sm^3 to 1,13- 1,25 ha/sm^3, furthermore the structure of soil and water conductivity improved.

Research methodology. During the years of 2014-2016 the method of sowing cotton together with sugar beet and peanuts was utilized in a number of fields in Andijan.

We carried out two producing experiment relating to the theme. Each experiment consisted of three variants and the first experiment was carried out on farm holding of "Safarobod barakasi" in Oltinkul in Andijan in 2014-2016. According to this method in the first variant only cotton was sown in the system of 60x20-1, in the second variant sugar beet was sown in the same system and in the third variant cotton was sown in the system of 120x20-1 together with sugar beet as an extrs crop.

The second experiment was done in agricultural farm of "Bakirov yog'dusi" in Andijan district in Andijan region. In this experiment cotton was separately sown in the system of 60x20-1 in the first variant.

Pea nuts were sown separately in the system of 60x20-1 in the second variant and in the 3rd variant cotton was sown in the system of 120x20-1 with peanuts in the same system as an extra plant between furrows.

The research works were carried out using "Methods for conducting experiments with cotton" (1983) to do field researches, "Methods of agrochemical analyzes of soils

and plants" (1977) to analyze agro chemical features, and "Methods of agrophysical research" (1973) to analyze agro physical features of soil.

Analysis and results. The research done presented that the height of main stem of cotton was higher because of the plant shade to each other when cotton had been sown separately than the one that had been sown with extra seeds.

The main stem of cotton heighted 90,7 sm; 91,6 and 92,4 sm respecting to the research years in the early August. When cotton grew with sugar beet this indicators were 82,4 sm; 83,1 sm and 84,7 sm respectively.

The amount of cotton bolls in a single plant on August 1 equaled to 3,6; 4,0 and 4,1 but on September 1 it was 9,2; 10,3 and 10,9 when cotton was sown together with sugar beet, this indicators showed 3,4; 3,7 and 3,8 on August 1, and 8,3; 8,6 and 8,7 on September 1 respectively. When cotton is sown together with sugar beet, the latter plant grows more freely due to its shorter height. In the years of research the height of sugar beet was higher in the variants of with extra plant than single one. In June sugar beets were 7,8-8,2 sm high when they were sown separately but in the co-planting method the plant was 8,5-9,1 sm high. In August it demonstrated 30,9-32,4 sm height of sugar beets in a separately sown way while it was 33,1-34,8 sm high in the co-planting method. The proficiency of the amount of leaves can be slightly seen in the variants of co-plantation. In August in the variants of sowing sugar beet separately, overall 23-24 leaves produced while 25-26 leaves could be counted in the variants of sowing sugar beet together with cotton. This method is very effective in expanding sowing furrows between the use of light, and air exchange is improved dramatically. As a result, the growth and development of crops will accelerate, they mature early, which positively affects the quality of the crop.

As we can see from the productivity information illustrated in the first table, the cotton harvest was more productive of 15,7 sr per ha on average in the variants of sowing cotton separately rather than the co-planting method with sugar beets. However, the crop fertility of early ripened high quality cotton was more productive in the variant of co-planting with sugar beets than the one sowing cotton separately. The 75,4-76,0 percent of the crop matured early when cotton was sown separately while 89,0-91,2 percent of cotton harvest reached fruition in the co-planting method with sugar beet.

Moreover, in the co-planting method the quality of sugar beet crop improved significantly.

The sugar indicator was 18,6-19,4 percent in the variants of sowing sugar beet separately while it equaled 19,1-20,1 percent in the co-planting method. When plants were sown separately, it could be got 38,4 sr per ha cotton crop and 474,6-510,8 sr per ha root crops from sugar beets. In the co- planting method the harvest indicators were 21,3-22,2 sr per ha from sugar beets. The significance of co-plantation can be demonstrated in the variants of sowing cotton together with peanuts(Table 1). The overall cotton harvest was considered 35,2- 36,4 sr per ha when cotton was sown separately, early-matured high quality crops were 26,8-28,2 sr per ha which formed the 74,2-76,1 percent of all harvest.

In co-planting the cotton harvest equaled to 22,4-25,7 sr per ha which organized 92,1-92,3 percent of overall harvest (Table 2).Furthermore, in this method we got 16,3-16,9 sr per ha peanuts and 84,4-89,3 sr per ha hay harvest.

Table 1

Crops productivity of sowing cotton and sugar beet separately and together. (in Oltinkul district "Safarobod barakasi" farm holding)

Years	Variant	Type of crops	Cotton			Sugar beet		
			Cotton harvest Sr per ha	Taken harvest Sr per ha	%	Root crops harvest, Sr per ha	Sugarness, %	Sugared harvest, Sr per ha
2014	1	Cotton	36,2	27,4	75,7	-	-	-
	2	Sugar beet	-	-	-	510,8	19,4	99,1
	3	Cotton + Sugar beet	21,3	19,4	91,2	247,2	18,1	87,7
2015	1	Cotton	38,4	29,2	76,0	-	-	-
	2	Sugar beet	-	-	-	480,7	18,8	90,4
	3	Cotton + Sugar beet	22,2	19,9	89,7	234,4	17,6	82,4
2016	1	Cotton	38,8	29,3	75,4	-	-	-
	2	Sugar beet	-	-	-	474,6	18,6	88,3
	3	Cotton + Sugar beet	22,8	20,3	89,0	228,0	17,1	76,8

In the agricultural farm of "Safarobod barakasi" in Oltinkul district when cotton seeds were sown in the system of 60x20-1, the average cotton harvest was 37,8 sr per ha, the overall expenditure was 3399045 sums, the overall profit was 4858974,5 sums and the real profit was 1459929,5 sums and the profitability equaled 42,9 percent. In the co-planting method of cotton together with sugar beet, the expenditure was 3756169 sums, the overall profit was 5607879 sums, the real profit was 1851710 sums and the profitability equaled 49,3 percent.

In the agricultural farm of "Bakirov yog'dusi" in Andijan district in Andijan region when cotton was looked after separately overall expenditure was 3361693 sums, the overall profit was 4679141,6 sums and the real profit was 1317448,6 sums and the profitability equaled 39,2 percent, and when cotton was sown together with peanuts the indicators were 3260261 sums, 7876753,1 sums, 4616492,1 sums and 141,6 percent respectively.

Table 2

Crops productivity of sowing cotton and pea nut separately and together. (in Andijan district "Bakirov yogdusi" farm holding)

Years	Variant	Type of crops	Cotton			Pea nut		
			Cotton harvest Sr per ha	rly taken harvest Sr per ha	%	Peanut crop harvest Sr per ha	a nut hay harvest Sr per ha	Provision unit
2014	1	Cotton	35,2	26,8	76,1	-	-	-
	2	pea nut	-		-	24,3	130,2	67,7
	3	Cotton+ pea nut	22,4	20,6	92,1	16,3	84,4	40,8
2015	1	Cotton	36,5	27,1	74,2	-	-	-
	2	pea nut	-		-	24,7	133,4	69,4
	3	Cotton+ pea nut	24,0	22,2	92,6	16,8	89,2	41,7
	1	Cotton	37,6	28,2	75,0	-	-	-

	2	pea nut	-		-	25,6	136,1	70,8
2016	3	Cotton+ pea nut	25,7	23,7	92,3	16,9	89,3	42,8
	1	Cotton	36,4					
nree-year harvest	2	pea nut				24,9	133,2	71,7
	3	Cotton+ pea nut	24,0			16,7	89,1	41,8

Conclusion and Recommendations. The taken information presents the research materials in the Andijan region on the basis of experience in the conditions of irrigated typical serozem subjected to irrigation erosion, when cotton is sown together with sugar beet and peanuts, yields and economic efficiency increase. The sugar indicator was 18,6-19,4 percent in the variants of sowing sugar beet separately while it equaled 19,1-20,1 percent in the co-planting method.when cotton was sown separately the cotton crop was 30,2-38,4 sr per ha and the root harvest from sugar beet was 474,6-510,8 sr per ha. *I*n the co-planting method there was an opportunity to get 21,3-22,2 sr per ha cotton and 228,0-247,2 sr per ha sugar beet crops. The significance of co-plantation can be demonstrated in the variants of sowing cotton together with peanuts.

The cotton harvest was 35,2- 36.4 sr per ha and the ripened harvest till the cold time was 26,8- 28,2 sr per ha when cotton was sown separately which organized the 74,2-76,1 percent of the overall cotton harvest. When cotton was sown together with peanuts overall cotton harvest was 22,4-23,7 sr per ha, from that ripened harvest till the cold time was 20,6-23,7 sr per ha and it equaled the 92,1- 92,3 percent of the overall crops. Furthermore, in this method we got 16,3-16,9 sr per ha peanuts and 84,4-89,3 sr per ha hay harvest.

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MODERN PROBLEMS OF PHILOLOGY AND LINGUISTICS

UDC 801.9

LINGUISTIC NEGATION IN THE SPEECH CHARACTERISTIC OF PETER WALSH

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Annotatsiya: Ushbu maqolada Piter Uolshning nutq xususiyatiga murojaat qilamiz, uning noto'g'ri to'g'ridan-to'g'ri nutqida inkordan foydalanishning ba'zi holatlari tahlil qilinadi.

Kalit so‘zlar: Termin, nutq, adabiy, to‘g‘ridan-to‘g‘ri nutq, frazeologik birlik, takror, konnotatsiya, urg‘u, leksik birliklar, inkor, kognitiv, ajratib ko‘rsatilgan.

Аннотация: В рамках данной статьи обратимся к речевой характеристике Питера Уолша, в несобственно-прямой речи которого есть некоторые случаи специфического употребления отрицания, которые мы разберем.

Ключевые слова: Термин, речь, литературная, прямая речь, фразеологизм, повтор, коннотация, ударение, лексические единицы, отрицание, когнитивно, выделено.

Abstract: Within the framework of this article, we turn to the speech characteristic of Peter Walsh, in whose improperly direct speech there are some cases of the specific use of negation we will analyze.

Key words: Term, speech, literary, direct speech, a phraseological unit, repetition, connotation, emphasis, lexical units, denial, cognitively, highlighted.

Introduction. In this article the novel "Mrs. Dalloway", which reflected the perception of contemporaries of the post-war period, the time of the collapse of spiritual values, events mainly take place in the memory of the heroes, in their memories, reflections; all dialogues, the spiritual life of the characters, their disputes are presented through improperly direct speech.

Literature review. In the dictionary of linguistic terms, the speech characteristic (speech portrait) of characters is understood as “a special selection of words, expressions, turns of speech, etc. as a means of artistic representation of the characters of a literary work

". Speech characteristics, as noted by I.V.Arnold, reflects both the speech of the social environment to which the character belongs, and his individual character.

Research methodology: In the article, analysis and synthesis, systematic approach, abstract-logical thinking and comparison methods were used.

Analysis and Results. In improperly direct speech, which is a fusion of the speech of the author and the character, vocabulary contains the same features as direct speech, that is, the character's manner of speech, words and expressions characteristic of him, are preserved.[1]

*As **for caring what they said to him - the Dalloways, the Whitbreads, and their set, he cared not a straw - not a straw (though it was true he would have, some time or other, to see whether Richard couldn't help him to some job). (V.Woolf. p. 37)***

... he was an adventurer, reckless, he thought, swift, daring, indeed (landed as he was last night from India) a romantic buccaneer, careless of all these damned properties _ (V.Woolf. p. 39)

Peter Walsh served for a long time in colonial India for the benefit of the British Empire, now he returned to London and found himself in the difficult position of a superfluous person who no one cares about. Peter's attitude to his immediate environment is expressed through the repetition of a phraseological unit containing negation, not to care a straw.

Negation in this context is reinforced by the introduction of **a straw**. He wants to see himself as a fearless daredevil (**reckless**), a brave pirate (**a romantic buccaneer**), who is alien to the values of bourgeois materialism. This attitude of Peter is rather expressively expressed by means of the stemmed noun **care** ("**effort and attentio**n"; "**worry about someone or some**thing") with the help of the critical suffix **–less** of the negative adjective **careless** (**of these damned properties**).[2] This passage uses two negative adjectives that Peter uses to describe himself: **reckless** ("**showing lack of care about danger and the possible results of your action**s") and **careless ("not giving enough attention or thought to what you are doing, so that you make mistakes "**. The etymological dictionary notes that the noun **reck** is derived from the verb **reck "to have regard to, to take heed of,** therefore the adjective **reckless** consists of the stem **reck**" **heed** "and the suffix **-less** , which indicates the absence of the characteristic expressed by the stem. It should be noted that this adjective does not have positive connotations: **reckless disregard, reckless driving**. As for the adjective **careless**, in relation to a description of a person, it can be used to express a negative assessment: "*a careless person does not think about what they are doing, so they make mistakes, hurt people, or damage things."* However, in the internal discourse of Peter Walsh, these lexical units, indicating the absence of signs - **care and r**eck, serve to express a positive assessment.

The past enriched, and experience, and having cared for one or two people, and so having acquired the power which the young lack, of cutting short, doing what one likes, not caring a rap what people say and coming and going without any very great expectations ... (V. Woolf. p. 118)

It is known that a number of verbs have the ability to combine with more than one

[1] Ahmanova 2005 385

[2] Nazarova T. B. Philology and semiotics Modern English Textbook - 2nd edition, revised -M Higher school, 2003 -s 21

prepositional adverb in a given colligation.[3] It should be noted that in this context the verb **care** is combined with the prepositional adverb **for**, which leads to the actualization of a part of the semantic volume of this verb. In other words, the meaning of the verb **care** appears in collocation with the prepositional adverb: **"care for somebody - to love or to be very fond of.**

In Peter's improperly direct speech, the verb care is used mainly in a negative construction, in particular, phraseological units such as: **not to care a rap / a straw / a hang,** conveying an intensified negation ***"not to care at all about something or somebody ".*** In this context, the verb care is implemented with the meaning "***to be worried, interested or concerned"***. In Peter's inner speech, a modified phraseological unit based on negation is used, **not to care a rap**, expressing the hero's position in relation to public opinion (**what people say**). As in the preceding passage, the combination of negation with "understatement" a rap increases the expressiveness of the utterance and makes it emphatic.

An interesting remark can be made regarding how from these positions Peter assesses not only himself, but also the people around him, even barely familiar. So, walking around London, Peter enters some institution for lunch and accidentally meets the Morris family. The following excerpt from Peter's inappropriately direct speech describes how he felt about a short time with the family.

Yet thought Peter Walsh, no family in the world can compare with the Morrises; none whatever; their relations to each other are perfect, and they don't care a hang for the upper classes, and they like what they like ... (V.Woolf. p. 116)

Describing his new acquaintances, Peter Walsh, through the negative phraseological unit **not a hang**, based on the verb **care**, positively evaluates the Morrises, admires their freedom (**they like what they like**), since only such an attitude to the conventions adopted in British society is for Peter's is the only correct one. Pronouns **no, none**, expressing categorical negation, are strengthened by the introduction of ***in the world and whatever***, usually used for emphasis.

It should be noted that Peter evaluates the main character - Clarissa Dalloway - differently, reproaching her for snobbery, insincerity, excessive correctness:

(Peter about Clarissa) The obvious thing to say of her was that she was worldly; cared too much for rank and society and getting on in the world -which is true in a sense; she had admitted it to him. (V. Woolf. p. 57)

In the passage in question, through the affirmative form (**cared too much**), Peter's negative attitude towards the secularity of Clarissa is conveyed. The verb sage in combination with **for (rank and society**) is realized in the meaning **"to like or to be willing to have something or to do something"**. The opposition between these two characters can also be traced at the level of lexemes. Peter uses a denial reinforced by a noun in his characterization (**cared not a straw, didn 't care a straw, didn' t care a bit, don't care a hang, not caring a rap**). In the description of Clarissa, an affirmative form appears, which, largely due to the introduction of the adverb of degree, acquires a negative connotation in this context - **cared too much for rank and society.**

Let's continue the analysis of the material and turn to the improperly direct speech of

[3] Syntax as a dialectical unity of colligation and collocation Textbook / Edited by OS Akmanova -M Izd-vo Mosk un-ta, 1969 -s 89-91

other characters in the novel "Mrs. Dalloway", which expresses their relationship to Peter Walsh.

And she wasted her pity. For he was quite happy, he assured her -perfectly happy, though he had never done a thing that they talked of; his whole life had been a failure. It made her angry still. (V. Woolf. p. 6)

In the inner speech of Clarissa, both the past and the present are intertwined. The use of the amplifying adverb **"never"** is due to its ability to indicate a vast period of time, both an uncertain future and the most distant past. As the researchers note, **"never"** functions at a higher level in the space of a work of art and can be used linguopoetically as an artistic device. It is impossible not to notice that the verb complex **had never done a thing acquires** the meaning of completeness in the indicated context. Studying the functional features of **"not"** and **"never",** T.A. Komova comes to the conclusion that verbs that can mean an action in the process, if used with **"never",** are able to realize their effective semantics, while there is an increase in the categorical meaning of completeness, which in translation into Russian can be translated by the phrase "*so and not.*"[4] Clarissa's inappropriately direct speech, through the word with its inherent negative meaning **failure** (" *somebody or something that is not successful* "), expresses her upset about Peter's failed life: in his youth, he was also full of hopes and expectations, however wasted his life on trifles, never realizing his potential. Other characters also assess Peter's position in a similar way: Lady Bruton, Richard Dalloway and Hugh Whitbread.

Yes; Peter Walsh has come back,' said Lady Bruton. It was vaguely flattering to them all. He had come back, battered, unsuccessful to their secure shores. But to help him, they reflected, was impossible; there was some flaw in his character. Hugh Whitbread said one might of course mention his name to So-and-so. ... But it wouldn't lead to anything - not to anything permanent, because of his character. (V. Woolf. p. 79)

In the above passage, the assessment of Peter's life is expressed by a word with the negative prefix unsuccessful **("not successful; not achieving what you wanted to**"), which is less emotional than the word **failure** used in Clarissa's speech. For these people, Peter is an extra person. Despite the fact that he served in colonial India for a long time for the benefit of the British Empire, they do not care what becomes of him. They are skeptical about his ability to find his place in new circumstances. The attitude of their rejection of Peter's "fidget" (**not to anything permanent**), the description of his essence is dry and categorically conveyed through negation: **impossible, it wouldn't lead to anything**

Now let's turn to an excerpt from Peter's own speech to understand how he himself assesses his position.

And she (Clarissa) would think me a failure, which I am in their sense, he thought; in the Dalloways' sense. Oh yes, he had no doubt about that; he was a failure, compared with all this - the inlaid table, the mounted paper-knife ... - he was a failure. (V. Woolf. p. 32)

He had been sent down from Oxford - true. He had been a Socialist, in some sense a failure - true. (V.Woolf. p. 37)

As follows from the above passages, Peter acknowledges the arguments of his

[4] Kamova 1985 29-32

opponents, all their arguments in favor of his inconsistency, and it seems that, in principle, he is not particularly worried about this. He recalls all the events of his life: in his description, he repeatedly uses the word with the implication of negation -**failure** ("**not successful**"). At the same time, he tries to justify his defeat by the fact that, in his understanding, success is determined by other criteria, different from the ideas of the people around him (Clarissa, Richard, Lady Bruton): "**m the Dalloways'** sense".

To conclude this section, let us turn to the context in which Peter is judged by a person who was once close to him in spirit. At a reception, Peter Walsh accidentally meets Sally Seton, whom he has not seen for a long time.

"Everybody in the room has six sons at Eton", Peter told her, except himself. He, thank God, had none. No sons, no daughters, no wife. Well, he didn't seem to mind, said Sally....

.. And did he say it out of pride? Very likely, for after all it must be galling for him (though he was an oddity, a sort of sprite, not at all an ordinary man), it must be lonely at his age to have no home, nowhere to go. (V.Woolf. p. 138)

In this passage, the image of Peter is presented to the reader through Sally Seton's improperly direct speech. In this passage, we propose to consider the "accumulation" of negation in terms of "figure / ground" borrowed from cognitive psychology, which were discussed in detail in the second chapter of this work. An **event** is expressed through an assertion and is usually a "figure", i.e. stands out against the "background" of static or lack of activity (**non-events**). In the text of a work of art, as in our case, the concepts of "figure / background" can change places and the message about the absence of an event becomes against the "background" of the approval of a new "figure", i.e. denial becomes more cognitively highlighted.

In this passage, the expected norm ("background") becomes the statement: according to generally accepted ideas, every person at the age of Peter usually has a family, children, a house, a certain status. The negative statements **"No, thank God, had none. No sons, no daughters, no wife "and" have no home, nowhere to go** "violate these expectations and denial becomes in this case a new" figure ", reporting something amazing," out of the ordinary ". Against the background of other well-to-do guests, Peter's social inconsistency becomes more "highlighted", and therefore informative. The statement in this context is based on background knowledge, suggesting the presence in the life of a representative of a given social circle of a certain number of events and problems: a successful marriage, career growth, a decent position, a prestigious education for children (for example, Peter's ironic remark: **"Everybody in the room has six sons at Eton ").**

These signs of social "fulfillment" are denied in Peter Walsh's description. As it seems to others, Peter's life did not work out, and he, as Sally's remark testifies, does not care: **Well, he didn't seem to mind**. The failure of Peter is explained by his dissimilarity to everyone, his eccentricity, which is expressed by "intensified" denial: **he was an oddity, a sort of sprite, not at all an ordinary man**. At the same time, it should be noted that constant denial can have exactly the opposite meaning. It can be difficult for a person to survive his failure, so he simply refuses to admit its existence. So, in Peter's speech, the word **undoing** appears repeatedly, for example: **It had been his undoing in Anglo-Indian society - this susceptibility** - "She was a real disaster for him in India, in the English circle - this is his

impressionability." In the dictionary *undoing* gets the following definition "**the reason why somebody fails or is unsuccessful in life"**.

Peter's characterization, denial is one of the important ways of expressing his position in life: **he cared not a straw what they said to him, careless of all these damned properties, reckless, not caring a rap what people say, don't care a hang for the upper classes.** The people around him evaluate Peter as a **failure**, ***he had never done a thing, unsuccessful, impossible, an oddity, not at all an ordinary man***. It should be noted that the adjective unsuccessful is used to describe a person who has not achieved what he wanted in life: "**used about someone who has not achieved what they want in life."** Therefore, if Peter Walsh did not initially strive for success in the sense that others usually understand him, then he may not evaluate himself as a failure - ***a failure.***

Conclusion and Recommendations. In this article we turned to the data of dictionaries of synonyms, thesauri in order to establish which lexical units are called a "***denying***" person. It seems to us that in the speech characteristics of Peter Walsh, as well as in the improperly direct speech of the people evaluating him, certain lexical units are used that allow us to talk about the manifestation of one of the previously indicated types - **nonconformist ("someone who does not think or behave in the usual way** "). It should be noted that the concept of "**nonconformist**" can include many meanings (**heretic, protestant, dissenter, abnormality, etc**.), however, in this work, we proceed primarily from the linguistic material of the analyzed novel. As evidenced by the data of thesaurus (***Roget's Thesaurus of English words and phrases, 1986; Longman language activator, 1999; The New Penguin Thesaurus, 200***4), concepts such as "**nonconformist", "unconformity"** can be expressed by a whole complex of linguistic means: nouns, verbs, adjectives, stable turns. Among the lexical units that we have recorded relating to the description of Peter Walsh, the following are noteworthy: ***it was his silly unconventionally, an oddity, not at all an ordinary man, not care a bit / straw / rap / hang, not in the least, solitary, was liked but thought a little cranky, indescribable idiosyncrasy, etc.***

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DEVELOPMENT OF DRYING DEVICE PROJECT OF SUNFLOWER SEEDS

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Annotatsiya: Maqolada kungaboqar donlarni barabanli quritish qurilmasini takomillashtirish to'g'risida so'z yuritilgan. Loyiha bo'yicha qurilma ham elektr, ham suyuq gaz issiqlik energiyasiga ishlay oladi.

Abstract: The article discusses the improvement of the sunflower grain Cylindrical dryer. According to the project, the device can run on both electric and liquefied gas heat energy.

Аннотация: В статье рассматривается усовершенствование барабанной сушилки зерна подсолнечника. По проекту установка может работать как на электрической, так и на тепловой энергии сжиженного газа.

Kalit so'zlar: quritish barabani, nasadka, tayanch roliklar, elektrokalorifer, suyuq gaz pechi, ventilyator.

Keywords: drying Cylindrical, nozzle, rollers, electric heater, liquid gas oven, fan

Ключевые слова: сушильный барабан, сопло, ролики, электронагреватель, газовая печь, вентилятор.

Introduction. At present, the country pays great attention to the production of large quantities of quality food products. This, in turn, leads to the need to further improve and popularize the technology of processing raw materials for food. One such raw material is sunflower seeds. In many parts of the country, the cultivation of sunflower on the lands devoid of cereals will help to meet the needs of our people in vegetable oil..

It is one of the most widely used oilseeds in the world.

Sunflower seeds contain 30-60% of fat, 16% of protein, up to 62% of biologically active linoleic acid, vitamins A, D, E, K.

In terms of nutrition, the unit weight of fat is 8 times that of potatoes, 4 times that of bread, and 2.3 times that of sugar. The main value of fat is its richness in phosphatides, vitamins A, D and E, which are essential for human nutrition. The oil is one of the most widely consumed oils in the world due to its taste.

In 2015 alone, it was planned to plant sunflowers as a main crop on 13,000 hectares in the country, as well as as a secondary crop on 27,000 hectares of vacant land in order to increase the efficiency of farms. These numbers have increased in recent years. The gradual reduction of cotton fields will lead to more sunflowers being planted.

The oil industry is a leader in the food industry of Uzbekistan. This sector, which has a positive impact on improving and deepening the integration process in the agro-industrial complex of the country, also plays an important role in improving the quality and expanding the range of products, full and efficient use of raw materials, meeting the needs and employment.

According to the Association of Food Industry of Uzbekistan, in the past, the industry focused on the production of cottonseed oil, but today it is increasing the production of sunflower, soybean and safflower oil. In this regard, measures are being taken to expand the area under sunflower and other oilseeds.

Literature review. Releted to this statement which published in www.elsevier.com which contain in base of scopus called "Oilseed and Oilseed Meals" written by The University of Georgia, Department of Animal and Dairy Science, Tifton, GA, United States was reviewed by us and we can find some disadvantages of this statement and tried to find some solves for these problems in the following statement of us.

Oilseeds and oilseed meals are included in diets fed to livestock as a source of both protein and energy. Whole cottonseed, soybeans, and sunflower seed have higher energy concentrations from oil in addition to protein and fiber. Oilseed meals including canola meal, cottonseed meal, peanut meal, soybean meal, and sunflower meal are used primarily to meet protein requirements. The nutrient composition of each is outlined along with the effect of the processing methods commonly used to reduce protein degradability. Limits on their use in diets, expected results when fed to lactating dairy cows or replacement heifers, and effects of feeding genetically modified oilseed or oilseed meals are provided for each ingredient.

Sunflower seed (SF) contain higher concentrations of oil than the other oilseeds and is primarily linoleic acid (C18:2). The amount of SF fed is limited to no more than 10% of the dietary DM to avoid overfeeding fat. When fed at 10% or less of the dietary DM, SF will maintain normal milk yield but milk fat percentage typically decreases. The decrease in milk fat percentage is caused by reduced synthesis of shot chain fatty acids by the mammary gland although concentrations of C18:0, C18:1, and C18:2 and trans-fatty acids are increased which is consistent with incomplete biohydrogenated of the fatty acids by the ruminal microorganisms. Compared with extruded SB, rolled SF supports similar milk yield and tends to maintained normal milk protein percentage when both were included in diets to provide 3.7% supplemental fat.

High oleic acid (C18:1) varieties of SF have been developed which have reduced concentrations of linoleic acid (C18:2) and maintain milk fat percentage compared with regular SF. Milk fatty acids concentrations shift in a similar manner as that observed with regular SF but intermediate in the degree that individual fatty acids changed.

Another reviewed statement is published by Z. Liu, ... T.J.V. Higgins, in Encyclopedia of Applied Plant Sciences with title of "Breeding genetics and biotechnology". We studied it carefully and learned many useful things from it and we used them to solve problems.

The SSA protein is another well-studied sulfur-rich protein that has been introduced in a variety of legumes and cereals, including subterranean clover (Trifolium spp.), alfalfa (Medicago sativa; lucerne), narrow leaf lupin (Lupinus

angustifolius), pea, chickpea (Cicer arietinum), rice, and wheat. The SSA gene was placed under the control of the pea vicilin promoter and introduced into narrow leaf lupin, a legume commonly fed to stock because of its high level of protein and fiber. SSA accounted for 5% of total seed protein in the transgenic lupin and resulted in a doubling of seed methionine and an overall increase in sulfur-containing amino acids of 20%. In feeding trials with sheep, the transgenic seeds gave an 8% increase in live weight gain and an 8% increase in wool growth, compared to nontransgenic seeds. Grain containing the SSA protein has the potential to be very useful as feed for ruminant animals, as SSA has been demonstrated to be resistant to degradation in the rumen. This allows more sulfurcontaining amino acids to be delivered to the small intestine of the animal, bypassing incorporation into microbial protein. Transgenic subterranean clover (Trifolium subterraneum) and alfalfa expressing SSA in the vegetative tissues have also been produced for evaluation as pasture for stock animals.

Although cereal grains are not deficient in the sulfur-containing amino acids, SSA was introduced in rice to gauge its effects on the levels of methionine, cysteine, and the endogenous sulfur-containing storage proteins. Transgenic rice expressing SSA at a level of approximately 7% of total protein did not show any increase in cysteine, methionine, or total protein. However, significant changes in the protein profile of the seeds were observed. Endogenous sulfur-rich storage proteins were downregulated in the SSA transgenic, presumably because SSA had sequestered most of the available sulfur. In addition, sulfur-poor storage proteins were upregulated, allowing the seed to maintain a constant level of total protein. In SSA transgenic peas and chickpeas, SSA accumulation was associated with significant increases in seed methionine. Surprisingly, the seeds also had increased amounts of total protein, and so the seed protein was not enriched with respect to the sulfur-containing amino acids.

Research methodology: In the scientific paper, analysis and synthesis, systematic approach, abstract-logical thinking, economic analysis, grouping, expert evaluation and comparison methods were used.

Analysis and Results. Currently, there are problems with timely and quality drying of sunflower grown on farms. That is, it is very difficult to find a place and time to dry. There are many cases when people have to dry for several days in the open. This serves to reduce the productivity of farmers ’months of labor and future income.

Drying is the process of removing moisture from a material by evaporating it with heat. The purpose of drying is to improve the quality of the material (reduce the bulk density, increase its strength, etc.) and expand its use..

Many enterprises of our country need to improve the control and management systems of drying process equipment. The main directions of this process are the replacement of obsolete or obsolete equipment of automation with new ones, enrichment with additional parts that perform additional functions, ensuring the reliability of the system, opening up opportunities for further improvements..

There are special drying devices for drying sunflowers in the country, most of which are stationary. To use the dryer, we have to take the sunflower seeds there. However, it is a bit difficult to dry sunflower seeds grown in remote areas of the country..

Given the above factors, we would like to offer a portable version of sunflower dryers. Make it easy to carry this dryer anywhere in the area. Farmers dry their crops the same day. you can take the device to another farmer who needs it. In this way, all farmers who grow sunflowers can dry their crops without destroying them.

We studied and analyzed two types of dryer devices. We will get acquainted with these devices below.

Cylindrical dryers are continuous devices and are used to dry granular, friable materials (mineral salt, phosphorite, sugar beet, wheat, sugar, etc.) at atmospheric pressure. Air or smoke gases serve as heat transfer.

The Cylindrical dryers have a hollow cylindrical shape and are installed at a small angle to the horizon..

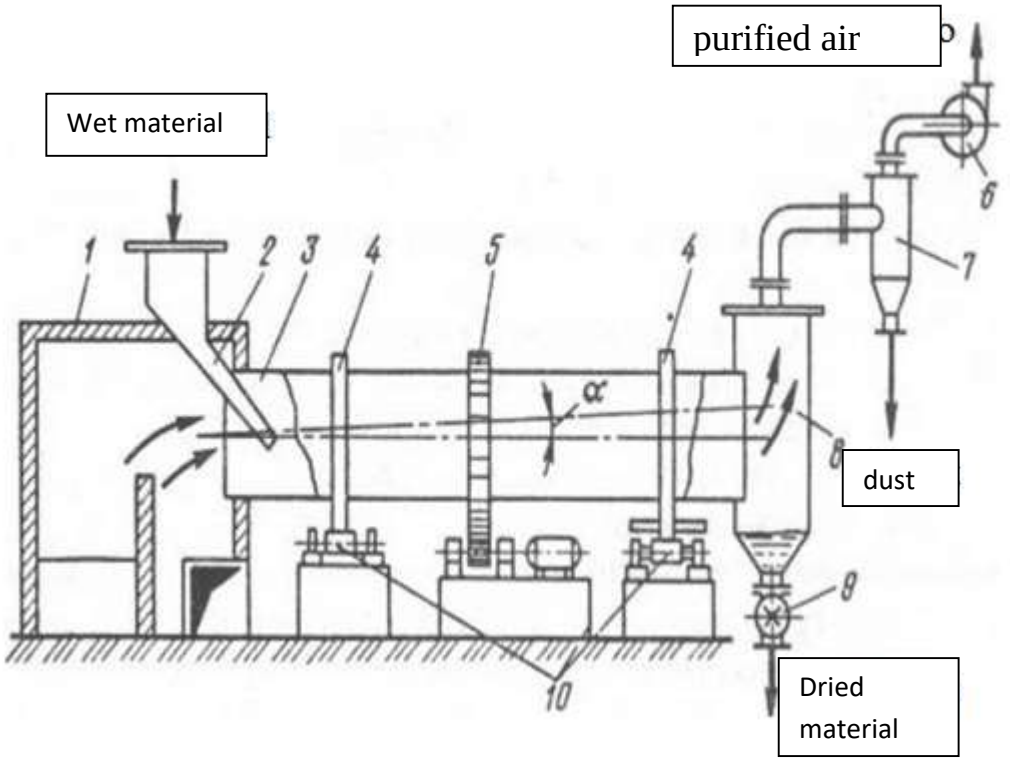

Figure 1. Heating cylindical dryer with a furnace.
1 - Furnace; 2 - storage; 3 - cylinder; 4 - belt; 5 - gear wheel; 6 - fan; 7 - cyclone; 8-spill storage; 9 - gateway provider; 10 - base rollers.

The Cylindr rests on belts and rollers. Its rotation is carried out by means of an electric drive and a gearbox and a gear wheel. The rotational frequency of the cylinder does not exceed 5 ... 8 min^{-1}. Wet material is transferred to the dryer using a supplier. During the rotation of the cylinder, the material rises and falls, and this process continues uninterrupted. However, due to the installation of the device and the presence of special nozzles, the material to be dried moves towards the side of the dump. The nozzles are usually placed along the entire length of the cylindrical dryer. Inside the dryer, the material dries by interacting with a heat exchanger. One of the main features of this cylindrical dryer is the presence of a special furnace as a heat source. This allows us to use flammable media depending on the circumstances.

Let's take a look at the next cylinder dryer. In this case, the main heat source for drying is an electrocalorifier.

Students at the Voronezh Institute of Technology have developed a cylindrical-toothed nozzle dryer that moves sunflower seeds from one place to another with an improved method of drying. They created a dryer that allows moisture to escape from the sunflower seeds in a single rotation, regardless of the humidity. The dryer is made of steel, has a cylindr, internal diameter 300 mm, and length 1300 mm.

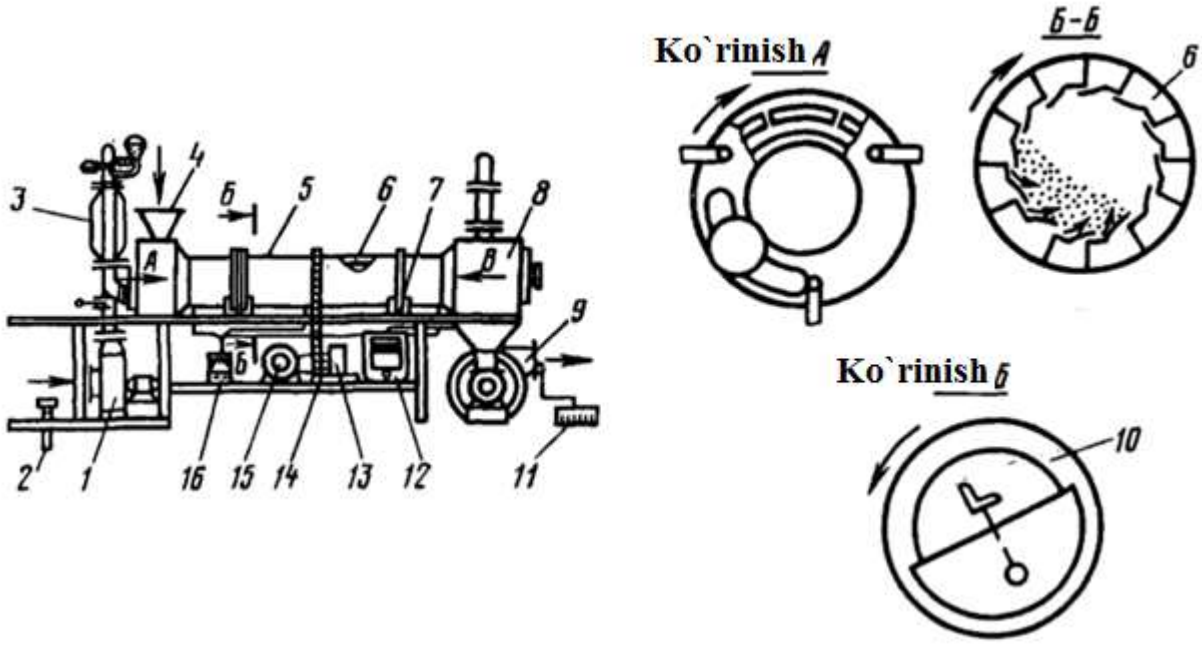

Figure 2. Channel nozzle cylindrical dryer:

1-fan; 2- fan adjustment; 3-electrocalorifier; 4- lid; 5-cylinder; 6- channely nozzle; 7- wheels; 8- place of seed falling; 9-fan; 10- the part that holds the circle; 11-hygrometer; 12- patensiometer QSP-4; 13- reducer; 14- center of motion; 15- electric motor; 16- thermoanemometer.

The cylinder is adjusted according to the moisture content of the grain, and the dried grain layer signals the drying agent. The grain layer along the entire length of the cylinder is transferred to the drying agent. At the top of the additional cylinder, a round spherical window rotates with the cylinder in front of the wheel. The window is also important in this process, you can see the condition of the grain inside. An electronic patentiometer measures the temperature inside the device. The sensor operates on a chrome-plated thermocouple. This serves to determine the moisture content of the incoming grain when controlling the dryer. The drying temperature at this time is 130-1700 C. The nozzles in the driving layer are uniformly 100 mm thick. Air cleaning speed 0.8 m / s, cylinder angle slope 40, cylinder wheel rotation speed 2… 4 rpm.

We would like to explore the above cylinder dryers and recommend our new dryer. In the device we offer, the drying process continues uninterrupted. There are two heat sources for drying: an electric heater and a special furnace. You can also move your device from one place to another.

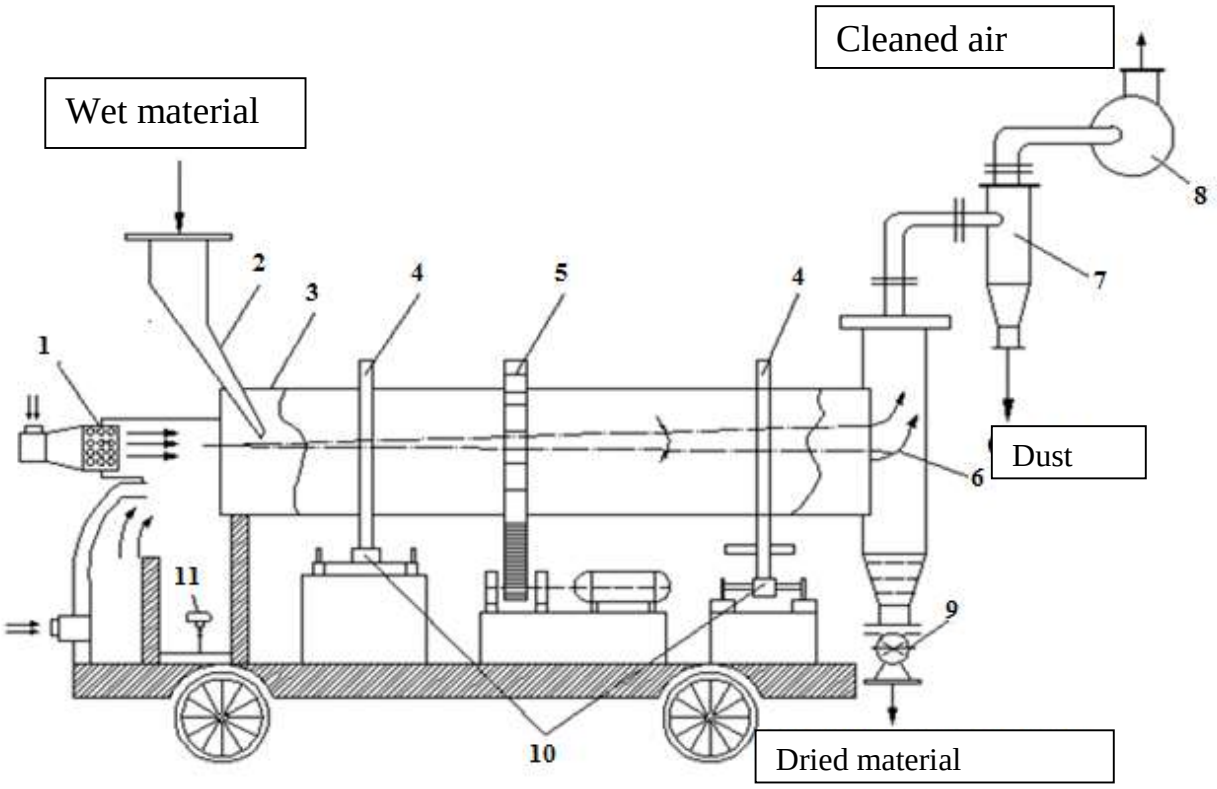

Figure 3. Cylinder-type mobile dryer:
1-electrocalorifier; 2 - a place to pour wet grain; 3 - The beginning of the nozzles; 4 - a support holding the cylinder; 5 - a gear that rotates the drum; 6 - grain unloading hopper; 7 - dust removal device; 8 - cyclone; 9 - dry grain landing site;10 - a support holding the cylinder; 11 - liquid gas combustion furnace;

Conclusion and Recommendations. Nowadays, every economical, efficient and fast energy is very important for the best production and type of business. The advantages of this purifier are many: the device is not constantly working, it is portable, and it also saves electricity and gas. We will have a protected area for crops in the area where the device is equipped with us. The most powerful device can run on gas even if there is no strong electricity near the crop field. This allows us to harvest sunflower seeds quickly and efficiently.

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UDC: 531

COMPARISON OF EXPERIMENTAL AND CALCULATED DATA ON SALT TRANSFER IN SOILS

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Annotatsiya. Maqolada ozgina sho'rlangan, og'ir teksturali tuproqlarni yuvish bo'yicha laboratoriya tadqiqotlari natijalari tasvirlangan. Bu tuproqning gidrokimyoviy parametrlari aniqlangan. Tuz o'tkazishning to'liq miqyosli hisoblangan parametrlari tenglashtirildi.

Kalit so'zlar: sug'orish, monolit, suv rejimi, tuz rejimi, Cl, Ca, Mg, Na, gidrokimyo.

Аннотация. Излагается результаты лабораторных исследований по промывке слабозасоленных, тяжелых по механическому составу почвах. Определялись гидрохимические параметры данной почвы. Сравнялись натурные расчетные параметры солепереноса.

Ключевые слова: орошения, монолит, водный режим, солевой режим, Cl, Ca, Mg, Na, гидрохимия.

Annotation. The article describes the results of laboratory studies on the leaching of slightly saline, heavy-textured soils. The hydrochemical parameters of this soil were determined. The full-scale calculated parameters of salt transfer were made equal.

Key words: irrigation, monolith, water regime, salt regime, Cl, Ca, Mg, Na, hydrochemistry

Introduction. Salt and nutritional regimes of soils are essential factors that determine the growth and development of plants, affecting soil fertility. There are various methods and technologies for regulating these regimes, depending on soil, climatic, hydrogeological and other conditions to maintain their parameters within optimal limits. Based on the analysis of reclamation practice, the principles of regulating the salt and nutritional regimes of soils are formulated, which are used to select the most appropriate regulation method that provides comfortable conditions for the growth and development of plants and meets modern requirements for environmental protection[7].

Literature review. The research carried out by various scientists gives a fairly complete picture of the relationship between the water and salt regimes of irrigated lands. (Averyanov S.F. 1965 ,, Aidarov I.P., 1980, Rex L.M., 1971 Smirnov S.M., 1971, Shulgin D.F. 1971, etc.) However, taking into account that the soils of the

experimental production site were characterized by a high humus content and a cation exchange capacity; it was necessary to study the features of the transfer of not only CI ions, but also Ca, Mg and Na.

Analysis and Results. For this purpose, laboratory studies were carried out on the washing of monoliths. The dimensions of the monoliths are d = 0.3 m, t = 0.5 m, two-fold repetition. The monoliths were washed with a water rate of 350 mm with a salinity of 1.143 g / l. Duration of washing is 3 days. Soil samples for chemical analyzes were taken layer by layer before and after washing. In addition, the filtrate was taken for chemical analyzes.

The analysis results are shown in Table 1 and Fig. 1.

Table 1

Results of analyzes of the aqueous extract before and after rinsing

Layer	Sum of salts,%	HCO_3	Cl	SO_4	Ca	Mg	Na
1	2	3	4	5	6	7	8
Monolith I before flushing							
00-10	1,297	0,037 0,60	0,030 0,85	0,895 18,65	0,185 9,25	0,108 9,00	0,042 1,85
10-20	0,56	0,055 0,90	0,012 0,35	0,353 7,35	0,070 3,50	0,051 4,25	0,019 0,85
20-30	0,311	0,070 1,15	0,007 0,20	0,161 3,35	0,030 1,50	0,033 2,75	0,010 0,45
30-40	0,519	0,061 1,00	0,007 0,20	0,322 6,70	0,075 3,75	0,045 3,75	0,009 0,45
40-50	0,511	0,64 1,05	0,009 0,25	0,317 6,0	0,035 1,75	0,060 5,00	0,026 1,15
1	2	3	4	5	6	7	8
After rinsing							
00-10	0,162	0,076 1,25	0,007 0,20	0,40 0,85	0,020 1,0	0,012 1,00	0,007 0,30
10-20	0,199	0,095 1,55	0,009 0,25	0,048 1,00	0,025 1,25	0,015 1,25	0,007 0,30
20-30	0,246	0,095 1,55	0,009 0,25	0,038 0,80	0,075 0,75	0,015 1,25	0,014 0,60
30-40	0,161	0,091 1,50	0,009 0,25	0,012 0,25	0,020 1,00	0,012 1,50	0,011 0,50
40-50	0,250	0,088 1,45	0,009 0,25	0,094 1,95	0,020 1,00	0,024 2,00	0,015 0,65
Monolith 2 before flushing							
00-10	1,206	0,052 0,85	0,028 0,88	0,833 17,35	0,100 5,00	0,141 11,75	0,052 2,25
10-20	0,577	0,061 1,00	0,014 0,40	0,365 7,60	0,050 2,50	0,068 5,65	0,018 0,85
20-30	0,451	0,076	0,014	0,256	0,040	0,054	0,011

		1,25	0,40	5,35	2,00	4,50	0,50
30-40	0,495	0,079 1,30	0,005 0,60	0,293 6,10	0,025 1,25	0,077 6,35	0,009 0,40
40-50	0,472	0,079 1,30	0,010 0,30	0,278 5,80	0,025 1,25	0,069 5,75	0,011 0,50
After rinsing							
00-10	0,195	0,076 1,25	0,007 0,20	0,062 1,30	0,035 1,75	0,009 0,75	0,006 0,25
10-20	0,264	0,079 1,30	0,009 0,30	0,113 2,35	0,025 1,25	0,027 2,25	0,010 0,45
20-30	0,339	0,079 1,30	0,009 0,25	0,168 3,50	0,035 1,75	0,030 2,50	0,018 0,80
30-40	0,322	0,079 1,30	0,007 0,20	0,156 3,25	0,030 1,50	0,027 2,25	0,023 1,00
40-50	0,404	0,073 1,20	0,009 0,25	0,221 4,60	0,035 1,75	0,036 3,00	0,030 1,30

Note: numerator - content in%, denominator - mg-eq / 100g

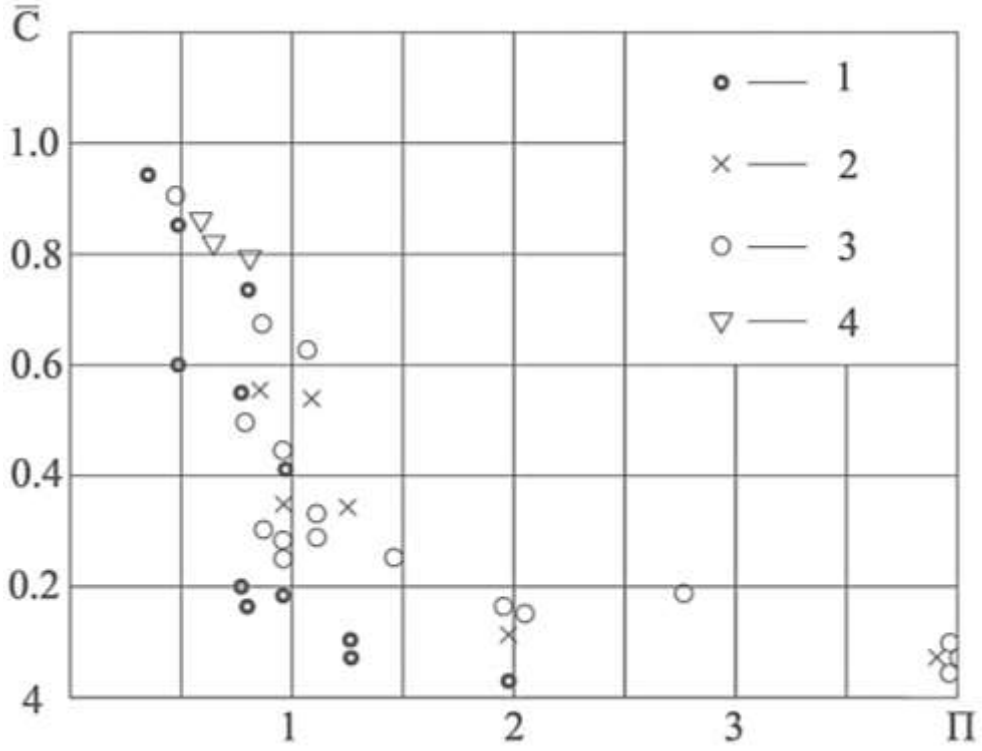

Fig. 1 Washing out of Cl (1), Ca (2), Mg (3) and Na (4) ions. During washing of monoliths

Analysis of the data obtained gives grounds to speak of some difference in the intensity of the washout of CI, Ca and Mq ions. The washout of CI ions ends practically at the washout rates corresponding to 2 ... 3 pore volumes. The process of transfer of Ca and Mq ions is extended compared to the transfer of CI and is determined, along with convective diffusion, by the phenomena of ion-exchange sorption (Fig. 1). The latter is very important for the choice of calculation models of salt transfer in the considered soils.

To determine the hydrochemical parameters (λ and $m_э$), the data of laboratory studies on the washing of monoliths were used. Using the data on the distribution of chlorine in the soil before leaching (table 1), the value of the filtration rate $V = \frac{N}{m\,t} = \frac{0.35}{0.56*3} = 0.208$ m / day and setting different values of D * = λ v, the distribution salts at the end of the wash and compared with the actual. The calculation results are shown in Table 2 (Fig. 2).

Table 2

Distribution of salts at the end of the wash and compared with the actual

Monolith 1					**Monolith 2**				
D * value, m2 / day					**D * value, m2 / day**				
0,02	0,026	0,028	0,032	0,034	0,01	0,03	0,05	0,07	0,09
0,075	0,0086	0,009	0,0098	0,010	0,0065	0,0066	0,0071	0,0070	0,0070

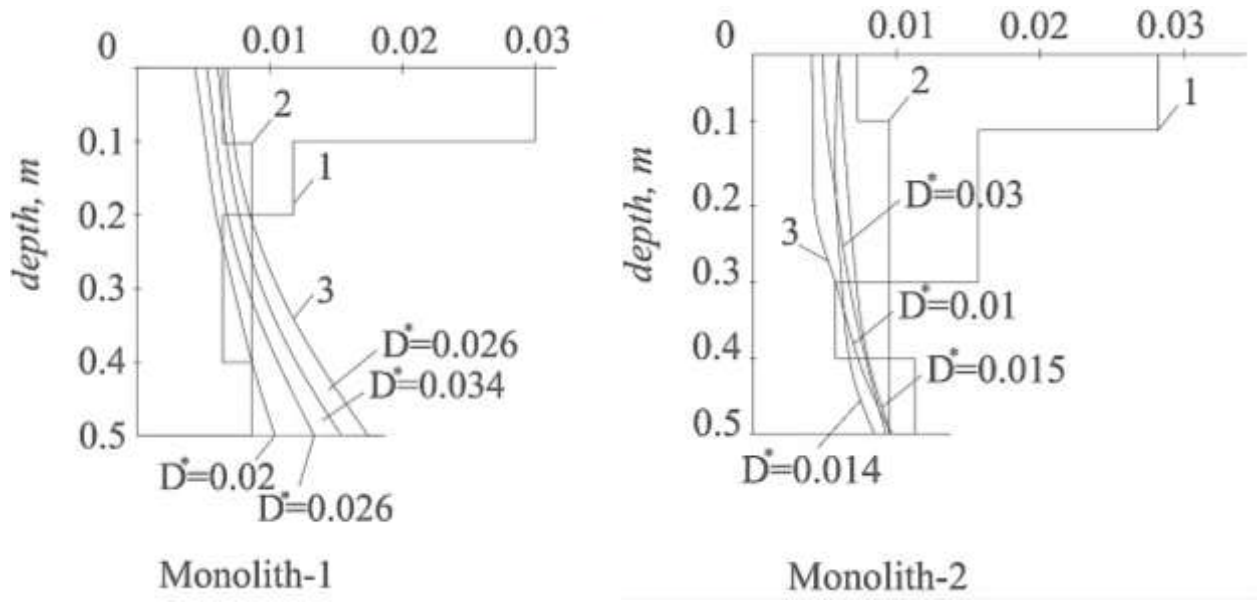

Fig 2. Salt distribution at the end of the wash and compared with the actual

The data in Table 2 show that for monolith No. 1 satisfactory convergence of calculated and field data (0.0086%) is obtained at D * = 0.026 m2 / day, ($\lambda = \frac{D*}{V}$ =0,12м), and for monolith No. 2 (C_f = 0.082%) - at D * = 0.05 m2 / day (λ = 0.23m)

Conclusion and Recommendations. For further calculations, the average value λ = 0.175 m was taken. The effective porosity me at v< 0.1 m / day, took place on the lands of the experimental production site, is close to the overall accuracy me = 0.56 (Aydarov I.P., 1980)

The obtained values of λ and me were used later when it was possible to use mathematical models (Averyanov S.F., 1965, Aidarov I.P., 1980, Reks L.M., 1971) to make a forecast of the salt regime of irrigated lands.

The dynamics of the washing out of chlorine ion 1-distribution diagram before washing;

2 - also after flushing (in fact); 3- also after flushing (calc.).

The results obtained show that the selected mathematical models fairly accurately describe the processes of salt transfer on soils that are heavy in terms of texture.

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ACTUAL PROBLEMS IN MODERN AGRICULTURE

UDC: 626.8

ESTIMATION OF THE INFLUENCE OF THE BREAKTHROUGH OF A HYDRAULIC STRUCTURE ON THE KINEMATIC STRUCTURE OF THE FLOW AND FLOODING OF THE ADJACENT AREAS

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Annotatsiya. Tabiiy va texnogen omillar ta'sirida iqtisodiy ob'ektlarning, shu jumladan gidrodinamik xavfli ob'ektlar sifatidagi gidrotexnika inshootlarining shikastlanishi va vayron bo'lishi xavfi ularning xavfsizligi muammosiga alohida e'tibor berishga va ularni himoya qilishda sa'y-harakatlarni birlashtirishi tabiiy va boshqa ofatlarga qarshi, hisobga olinishini majbur qilmoqda.

Kalit so'zlar: past bosimli tuproq to'g'onlari, to'g'onning tebranishi, suv toshqini xavfi, ishonchlilik, chidamlilik, avariya, to'lqinli to'lqin, zarar etkazuvchi omil.

Аннотация. Рассмотрена проблема опасности повреждений и разрушений хозяйственных объектов, в том числе гидротехнических сооружений как гидродинамических опасных объектов, вследствие воздействия стихийных и антропогенных факторов, заставляющих гидротехническое сообщество

обратить особое внимание на проблему их безопасности и объединение усилий в деле защиты от стихийных и других бедствий.

Ключевые слова: низконапорные грунтовые плотины, прорыв плотины, опасность затопления, надёжность, долговечность, авария, волна прорыва, поражающий фактор.

Abstract. The problem of the danger of damage and destruction of economic objects, including hydraulic structures as hydrodynamic hazardous objects, due to the impact of natural and anthropogenic factors, forcing the hydraulic community to pay special attention to the problem of their safety and joining efforts in protecting against natural and other disasters, is considered.

Keywords: low-pressure earth dams, dam breakthrough, flooding hazard, reliability, durability, accident, breakthrough wave, damaging factor.

Introduction. Water resources of the Fergana Valley of Uzbekistan for the main river basins of the Syr Darya and Amu Darya are estimated at 111 km3 per year. The main part, up to 75%, is used for irrigation. With an irrigated area of 8.5 million hectares, the provision of one hectare of irrigated area is 10.5 thousand m3 / ha, excluding losses through irrigation canals. Excessive amounts of water are used to irrigate crops. The actual volume of irrigation water use in individual regions of the Fergana Valley of Uzbekistan sometimes exceeds the required amount by 2 times. The main losses in this case are accounted for not only by the irrigation system, which today is in an unsatisfactory state; on an irrigated field associated with a low level of irrigation organization, but also on existing hydraulic structures. In the conditions of a real shortage of water resources, it is necessary to search for an economical environmental protection through the rational use of irrigation water.

The boom in hydrotechnical construction has occurred in the last 30-40 years, when more than 85% of all existing dams in the world were built. In total, more than 100 thousand retaining hydraulic structures have been built in the world. At present, the total volume of reservoirs on Earth is 6,500 km2, which is three times the volume of fresh water in all rivers.

Literature review. The end of our century is characterized by a significant rate of development of hydropower resources and the transition from the construction of predominantly large reservoirs of energy value to medium and even small ones. Today there are not so many rivers on which there would not be at least one reservoir. Retaining hydraulic structures have proven their reliability and durability - many of them have been functioning for tens or even hundreds of years. The materials of world statistics and events of recent years indicate that accidents at hydroelectric facilities are possible, they can lead to damage and destruction of dams and adjacent structures. According to the Committee on Accidents and Destructions of the International Commission on Large Dams, more than 3 thousand accidents occur annually in the world, often with great material and human damage[1].

In the last century, more than 1,000 cases of destruction of hydraulic structures have occurred in the world. The reasons were not only natural, but also anthropogenic factors. The former include extreme runoff; surges; dangerous meteorological phenomena (storms, showers, snowfalls,); climate change; earthquakes; landslides; landslides; avalanches and mudflows; volcanic eruptions[2].

Research methodology. The anthropogenic factor is mainly due to insufficient hydrological and engineering-geological substantiation of projects. Accidents can result from underestimation of possible extreme water flows and the size of spillways, incorrect site selection and incorrect assessment of conditions for the construction of dam foundations. Other reasons are wear and tear of equipment, organizational and technical problems, incompetence and even negligence of operating personnel.

For example: on the basis of the development of the safety declaration of the state of the Kuyganyar hydroelectric complex in 1954, 1966, 1975, 1980, 2013 and 2016, it was revealed that: the state of the Kuyganyar hydroelectric complex of structures is in a satisfactory condition. However, it was possible to maintain this satisfactory state by constantly eliminating the damage that occurred during the operation of the structure. In the upper reach of the shield dam near the right bank, sediment deposits arose along the coast at a distance of about 100 meters, the thickness of which was 1.5-2.0 meters, and when adjacent to the coast, it reached 3.0 meters. In the downstream of the water intake dam, the bottom is constantly eroded with a depth of up to 1.0 m, the destruction and displacement of the anchorage plates, especially at the left bank, where the erosion depth reaches 2.0 meters, the erosion and destruction of concrete pavements on the right bank. The left bank of the downstream is washed out and destroyed along the channel length of about 40.0 meters. Settling ponds located at the head of the BFK channel are silted up with sediments. In front of the entrance wings of the Siza channel regulator, there is sediment deposits, the thickness of which reaches up to 3.0 meters. The gauging station, taking into account the flow rate of water supplied to the Siza canal, is equipped in the rectangular part of the canal, where there is a rapid flow of water movement. In the downstream, there is a strong lowering of the bottom by 1.5 - 2.0 meters. To increase the reliability of the structure and ensure the safe operation of the KGU, it became necessary to carry out major overhauls every 4 years, for which a lot of funds were allocated.

Analysis and Results. Hydraulic structures, as a rule, are located within or above large settlements and, in the event of an accident, pose a great danger to the population and economic facilities. The trend of building up the downstream of dams in areas of possible flooding continues.

The increased risk of damage and destruction of economic facilities, including hydraulic structures, due to the impact of natural and anthropogenic factors forced the human community to pay special attention to the problem of their safety and to join efforts in protecting against natural and other disasters.

Elimination of the consequences of damage to retaining hydraulic structures requires large material costs and time. But human losses are irreparable and moral and psychological trauma is dangerous. Therefore, efforts should be aimed at anticipating, preventing and predicting the consequences of possible emergencies at waterworks [1].

In recent years, military actions and terrorist acts in the zones of ethno-social conflicts pose a threat to the normal functioning of waterworks. An attempt is known to seize the Nurek hydroelectric power station in Tajikistan by the opposition forces.

The construction of hydraulic structures on rivers can affect the change in the direction of the current speed and lead to a change in the coastline or fairway, which is usually the border line separating neighboring states.

Flooding of the area caused by accidents at hydraulic structures. The main hydraulic structures, the destruction of which leads to hydrodynamic accidents, include dams, water intake and drainage structures (sluices). Catastrophic flooding resulting from a hydrodynamic accident consists in the rapid flooding of an area with a breakthrough wave. The scale of the consequences of hydrodynamic accidents depends on: parameters and technical condition of the hydroelectric complex; the nature and degree of dam destruction; the volume of water reserves in the reservoir; breakthrough wave and catastrophic flood characteristics; terrain; the season and time of day of the incident and many other factors. Especially large losses to the population and significant damage to the national economy can be caused by the cascade location of hydroelectric facilities, since as a result of the destruction of the overlying hydroelectric facility, the resulting wave will lead to the destruction of the dams of the hydroelectric facilities located downstream of the river.

A breakthrough of hydraulic structures can occur due to the influence of forces of nature (earthquake, hurricane, landslide, landslide, etc.), structural defects, violation of operating rules, exposure to floods, destruction of the dam foundation, etc.

However, as a rule, such floods occur due to untimely emptying of small reservoirs, unavailability of water intakes, littering of channels, especially at bridges. Out of 300 dam failures in various countries for the period from 1902 to 2012, in 35% of cases, the cause of the accident was the excess of the calculated maximum discharge flow, i.e. overflow of water over the crest of the dam. The resulting wave has a great height and speed. For lowland areas, the speed of such a wave ranges from 3 to 25 km / h, and for mountainous and foothill regions it reaches values of the order of 100 km / h. This type of flooding is similar in nature to the floods caused by the overflow of rivers from their banks due to prolonged and heavy rains (floods). The differences lie in the higher rate of flood spread, and, consequently, the shorter periods of flooding of territories and suddenness, which entails the destruction of bridges, roads, buildings, as well as the death of people and livestock.

Hydraulic structures of the pressure front are hydrodynamically hazardous objects (HOO). In case of a breakthrough, a hole is formed through which water flows from the upper pool to the lower one and a breakthrough wave is formed. The breakout wave is the main damaging factor of this type of accidents. The impact of a breakthrough wave on objects is similar to the impact of an air shock wave of an explosion, but differs from it in that the acting body in this case is water [4].

The main damaging factors of catastrophic flooding are: breakthrough wave (wave height, movement speed) and flooding duration.

Breakthrough wave - a wave formed in the front of a stream of water rushing into the break, which, as a rule, has a significant crest height and speed of movement and has a great destructive force.

A breakthrough wave, from a hydraulic point of view, is a displacement wave, which, unlike wind waves that occur on the surfaces of large bodies of water, has the ability to transfer significant masses of water in the direction of its movement.

Therefore, a breakthrough wave should be considered as a certain mass of water moving down the river and continuously changing its shape, size and speed.

A breakthrough (release) wave, in its physical essence, is an unsteady movement of a water flow, which, as mentioned above, in its movement along the river bed, continuously changes the height, speed, width and other parameters. It has phases of water level rise and subsequent level decline. The phase of an intense rise in the water level is called the breakthrough wave front. The front of the breakthrough wave can be steep when the breakthrough wave moves along the channel sections close to the destroyed GOO, and relatively flat - at a considerable distance from it.

Following the front of the breakout wave, its height begins to increase intensively, reaching after a certain period of time a maximum called the crest of the breakout wave, which usually moves slower than its front. As a result of the rise of the wave, flooding of the floodplain and coastal areas of the terrain occurs.

The area and depth of flooding depend on the parameters of the breakthrough wave and the topographic conditions of the area. After the ascent stops, a more or less long period of flow movement begins, close to the steady-state one. This period is the longer, the larger the volume of the reservoir. The last phase in the formation of the flood zone is the decline in water levels. The tail of the wave (the end of the wave) moves even more slowly than its crest. Due to the difference in the velocities of the three characteristic points (front, crest and tail), the wave gradually “spreads out” along the length of the river, decreasing its height and increasing the duration of its passage in the next section. The destructive effect of the breakthrough wave is the result of a sharp change in the water level in the downstream and upstream during the destruction of the pressure front and the formation of a flow moving at high speed, changes under its influence in the strength characteristics of the soil.

Emergencies arising as a result of the destruction of the structures of the pressure front and characterized by the main damaging factor - a breakthrough wave and, accordingly, catastrophic flooding of the area, are often accompanied by secondary damaging factors:

-fires - due to breaks and short circuits of electrical cables and wires;

-slides, landslides - due to soil erosion;

-infectious diseases - due to contamination of drinking water, food, etc.

- the causes of accidents accompanied by the breakthrough of hydraulic structures of the pressure front and the formation of a breakthrough wave can be different, as mentioned above, but most often such accidents occur due to the destruction of the foundation of the structure and insufficient spillways

The main reason for the breakthrough of natural dams formed during the formation of dams in the river bed by collapsed masses of rocks (during earthquakes, collapses, landslides), or ice masses (when glaciers move), is their overflow over the crest of such a dam and its erosion [5].

The main parameters for assessing the consequences of the destruction of hydropower facilities in the downstream. Along with the calculations of the consequences of dam destruction carried out by the NNI (Hydroproject), the laboratory of hydrology of the Institute of Geography of the Russian Academy of Sciences developed the main methodological approaches to the calculation of the parameters of

the breakthrough wave, its mapping and assessment of the consequences. Thanks to the developed criteria for the severity of the situation, zones of varying degrees of danger of the consequences of the destructive impact of the breakthrough wave have been established. They were ranked as follows: catastrophic, significant, tangible and insignificant. Each of the named gradations is characterized by specific parameters of the breakout wave and, accordingly, different consequences (Table 3). The combination of the values of the severity criteria that determine the situation in the downstream of damaged hydroelectric facilities can be different and depends primarily on: slopes; the geomorphological features of the valley; the size of the hole; seasons (flood on the river or low water)[2].

Influence on the situation in settlements and damage resulting from exposure. The situation in settlements depends significantly on the moral and psychological state of the population, as well as the engineering situation. The moral and psychological of the population is influenced by: the degree and timing of the notification; the level of early preparation of the population to act in the event of a dam break or flood; time of year and day; breakthrough wave speed and height; the rate of water rise and other factors.

If advance preparation was not carried out, then panic, disorganized retreat and escape from the elements arise, which lead to congestion and traffic jams on the escape routes, additional casualties, even as a result of the resulting crush. This situation is aggravated by cold, inclement weather and dark hours of the day.

Conclusion and Recommendations. With advance warning and training of the population, an operative organized evacuation of the population and material assets is underway, command and control bodies and rescue teams with equipment are mobilized. The assessment of the situation consists of assessing the parameters of the breakthrough wave or the flooding resulting from the breakthrough of the dam and their impact on buildings, structures, soil, and life support systems.

The impact of the breakthrough wave resulting from this sharp rise in water on a settlement can be as follows:

- hydrodynamic shock affecting buildings and structures and leading to their destruction;
- flooding of homes, industrial and agricultural facilities with water, with crops grown, death of livestock;
- loss of capital of buildings and structures;
- damage and damage to the equipment of enterprises;
- destruction of hydraulic structures and communications located below the destroyed hydroelectric complex;
- long-term hydraulic pressure on bridge elements (supports, etc.)
- flooding and destruction of roads, etc. [3].

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CULTIVATION OF HIGH-QUALITY FODDER CROPS.

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Annotasiya. Andijon viloyatining och tusli bo‘z tuproqlarii sharoitida oraliq ekinlarini to‘rt komponentli qilib ekib, ulardan so‘ng soya don uchun ekilganida, ozuqabop ekinlardan yuqori va sifatli ko‘k massa va don hosili olib, oqsil miqdori ko‘payganligi va ozuqaning sifati yaxshilanganligi aniqlangan.

Kalit so‘zlar: tuproq, unumdorlik, xantal, arpa, tritikale, raps, vika, ko‘k no‘xot, moyli turp, makkajo‘xori, soya, ozuqa birligi, oqsil.

Аннотация. В условиях светлых сероземов почвах Андижанской области путём поссева сложных 4-х компонентных смесей озимых промежуточных культур с последующим посевом сои на зерно, где обеспечивается максимальный урожай зерна и зеленой массы соломы, значительно повышает содержание белка, улучшает качество кормов.

Ключевые слова: почва, плодородие; горчица; ячмень; тритикале; рапс; вики; горох; редька масличная; кукуруза; соя; кормових единица, белка.

Abstract. In the conditions of light gray soils in the soils of the Andijan region, by sowing complex 4-component mixtures of winter intermediate crops, followed by sowing soybeans for grain, where the maximum yield of grain and green mass of straw is ensured, significantly increases the protein content, improves the quality of feed.

Key words: soil, fertility: mustard; barley; triticale; rape; wiki; peas; oil radish; corn; soy; feed unit, protein.

Introduction In the world, special attention is paid to the norms, the ratio of mineral fertilizers, the use of organic fertilizers, the widespread use of the next sowing scheme, the introduction of land and water-saving and other progressive agricultural technologies while increasing soil fertility. When introducing short-rotation sowing schemes on irrigated lands, special attention is paid to sowing legumes, cereals and vegetables, which ensure the preservation and increase of soil fertility, the population's demand for food products, these crops should be introduced into a short-rotation sowing scheme and were sown mainly as secondary and catch crops, increasing the efficiency of land use, developing and introducing agricultural technology into

production for the cultivation of a high yield of agricultural crops, which is currently an urgent task in agriculture.

Recently, a lot of experimental work has accumulated, proving the effectiveness of the cultivation of catch crops. Various types of catch crops make it possible to increase the accumulation of PAR (photosynthetic active radiation), to make the most of the extremely favorable conditions of the autumn-winter and early-spring periods. Soybeans are the most important protein-oilseed crop of world importance. Its seeds contain an average of 37-42% protein, 19-22% oil and up to 30% carbohydrates. Soybeans are universal; they are of great versatile food, medicinal, fodder, technical and agrotechnical significance.

Literature review. Possibilities of obtaining two harvests of grain or forage crops and one year from one area. They recommend for Uzbekistan intermediate crops such as rye, oats, barley, wintering oats, winter vetch, winter fodder peas, shabdar, bersim, mustard, rapeseed, perco both in clean crops and in the form of mash, as well as fodder triticale Praga- 1 and Yarovaya "Pattern". [5].

In total, for two harvests from the intermediate sowing of triticale and stubble - corn and sugar sorghum, 535 c/ha of green mass was obtained, or more than 9000 fodder units per hectare [2].

On average, over seven years from the same area, we obtained a harvest of 47 barley grain and 15 c/ha of soybean seeds, the total harvest of two crops (including barley straw) was 8990 feed, units and 1117 kg of digestible protein per hectare [1].

In the conditions of the southern forest-steppe of the Omsk region, it was shown that when growing soybeans for grain, early sowing dates (May 10-15) have an advantage. The greatest yield of dry matter of soybeans was obtained in the phase of full filling of beans during sowing on May 20-25. Sowing the crop later reduces the yield of seeds and green mass [3;15-19].

For annual crops, the most effective means of enriching the soil with organic matter is corn, which leaves 70-84 centners per hectare of roots in a 50 cm layer. Grain crops accumulate less root mass, winter crops - 39-41, spring crops 18-19 c/ha. All of them in intermediate serve as a large reserve of soil enrichment with organic matter [4].

At the Volger Institute of Crop Production in Bonn, it was found that after the cultivation of catch crops in the arable layer, 30-60 kg / ha of nitrogen is additionally released after mineralization of the plant mass, which improves the nutrition of the main crop. In addition, catch crops, creating a solid forage base and improving the nutrient regime of the soil, help to prevent the leaching of nutrients from the soil by autumn and spring precipitation [8].

It has been established that annual forage crops leave organic matter of root and crop residues in the soil, contribute to an increase in soil fertility and an increase in cotton yield [6].

Intermediate crops leave behind 5-6 tons of root and crop residues, contribute to the greatest accumulation of bolls on cotton (9.3 pieces), and increase the yield of raw cotton to 33.2 c/ha. The yield increase in comparison with the control amounted to 2.5 c/ha [7].

The task of experimental research was to determine the increase in the productivity of the forage field, cotton crop rotation by maximizing the compaction of crops (from one crop to four) after them, sowing soybeans in order to increase the yield of fodder and simultaneously improve its quality.

Research methodology. The studies were carried out on light gray soil soils of the Andijan region, on the territory of the Andijan branch (UzNIHI), the area of the experimental site is 2.0 hectares. The total area of the plot is 240 m^2, the accounting area is 120 m^2. The arrangement of the plots is single-tier. The variants were repeated four times. The soils of the experimental area are light gray soil of old irrigation, the average humus content in the arable horizon is 1.261%, total nitrogen is 0.153%, and the mobile form of phosphorus is 0.217%. The total area of the plot is 240 m2, the accounting area is 120 m^2. Based on these field experiments, an analysis of variance was made for the accuracy of the yield [3]. Verification of agrophysical (4) and agrochemical (5) soil properties was carried out according to the established methods.

Analysis and results. The compaction of crops reduces the herbage of forage crops, and the more forage crops in a mixed sowing, the less herbage of individual components. As the number of crops in mixed crops decreases, the density of triticale stands decreases from 1134.3 to 893.6 thousand / ha in double mixtures from 872.3 to 819.6 thousand / ha in crops consisting of four components. The herbage of rapeseed plants decreases from 581.9 to 573.4 thousand / ha in double mixtures from 411.7 to 406.3 thousand / ha and 406.5; 396.1 thousand / ha in mixed crops, consisting of four components, vetch from 451.3 to 411.4 thousand / ha in triple mixtures from 401.6 to 398.7 thousand / ha in quadruple mixed crops. A similar pattern was noted in all variants of the experiment.

When sown in pure form of mustard, barley, barley plants have a noticeable advantage in plant growth, outstripping mustard plants in this indicator. In double mixtures of triticale + rapeseed, the height of plants of both crops is slightly reduced, compared to their separate sowing in pure form.

Consolidation by mixed sowing of three crops (triticale + rapeseed + vetch) and four (triticale + rapeseed + vetch + peas) and (triticale + rapeseed + pea + oil radish) crops does not show a noticeable decrease in plants compared to sowing in pure form of barley.

Table № 1

Productivity of winter forage crops, kg/ha.

Option №	Culture	Repetition				Average, c/ha	Output, kg / ha	
		I	II	III	IV		Feed units	Let's digest, protein
1	2	3	4	5	6	7	8	9
3	Winter mustard	296,3	293,9	293,6	293,0	294,2	3236,2	411,9
4	Winter barley	393,2	397,6	394,4	395,8	395,2	7114,2	1185,7
5	Two-component							
	Winter triticale +	249,2	246,4	249,1	252,3	249,1	4401,2	548,1
	rapeseed	184,8	174,0	169,8	176,2	176,2	2819,2	523,6
	Total:	434,0	420,4	418,9	428,5	425,3	7220,4	1071,7
6	Three-component							
	Winter triticale +	193,3	191,8	188,8	195,9	192,4	3363,8	425,5
	rapeseed	148,2	145,6	146,8	148,2	147,1	2354,6	441,5
	shouts	109,1	106,5	103,6	103,7	105,8	1800,0	349,2
	Total:	450,6	443,9	439,2	447,8	445,3	7518,4	1216,2
7	Four component							
	Winter triticale +	144,1	145,1	143,3	144,9	144,4	2600,0	317,7
	rapeseed +	117,1	123,9	119,4	120,8	120,3	1924,8	361,0
	shouts +	101,9	100,9	102,2	102,5	102,0	1734,0	336,6
	peas	108,6	110,9	110,2	110,3	110,2	1963,2	308,6
	Total:	471,7	480,8	474,1	478,5	456,9	8022,0	1323,9
8	Four component							
	Winter triticale +	140,3	140,7	140,9	143,5	141,4	2545,2	311,1
	rapeseed +	123,8	126,9	125,5	125,5	125,6	2009,6	376,8
	peas +	106,6	105,4	106,3	106,6	107,3	1716,8	300,4
	oil radish	120,1	121,1	120,3	122,8	121,0	1936,0	363,0
	Total:	490,8	494,1	493,1	498,4	495,3	8207,6	1351,3

If the mustard plants at the time of harvesting had a height of 104.7 cm, of barley 126.7 cm, then in double mixtures the height of triticale was 123.7 cm, in triple mixtures - 119.1 cm and when compacted with four crops 118.3 and 115, 1 cm. A similar pattern was noted for other studied crops (rapeseed, vetch, peas, oil radish).

The research results showed that the combination of crops with different biological characteristics of fodder crops did not have a negative effect on plant growth, which is an important factor affecting both the overall yield of fodder and its quality. The results of the study showed further compaction of mixed crops by using a third crop - vetch, thus creating combined crops of winter crops - triticale - winter rape + winter vetch (var. 6), provides only an increase in the yield of green mass - 445.3 c/ha but improves quality of fodder products due to the presence of a legume component in fodder mixtures.

The most effective in terms of the yield of green mass are options where, in mixed crops with four crops - winter triticale + rape + vetch + peas (version 7) and winter crops - triticale + rapeseed + pea + oil radish (version 8). The yield of green mass in this case averaged 456.9 over three years; 495.3 c/ha.

The inclusion of the legume component in mixed crops further enhances the productivity of the forage field.

The greatest influence of the components in feed mixtures on the quality of products is observed when cultivating a mixed crop, consisting of cereal- cruciferous and leguminous bourgeois women, where the yield of feed units with three components of mixed crops was 7518.4 kg/ha, with four components - 8022.0 and 8207, 6 kg/ha, the output of digestible protein - respectively, increases to 1216.2 and 1323.9 - 1351.3 kg/ha.

A slight decrease in the yield of feed units and digestible protein is observed when using mixed crops without a legume component (var. 5), where the yield of feed units averaged over three years 7220.4 kg/ha, digestible protein - 1071.7 kg/ha.

Table № 2

Yield and fodder units obtained from intermediate and re-crops c/ha

№	Types of crops		Intermediate crops	Reculture of soybeans		Amount obtained from two harvests			
	1	2		Corn	Straw	Corn	Green mass	Feed units	Digestible protein, kg / ha
1	-	Cop-corn	–	62,3	366,1	62,3	366,1	22130	998,4
2	-	Soybeans	–	25,9	47,4	25,9	47,4	4930	899,0
3	Mustard	Soybeans	294,2	24,7	43,2	24,7	357,4	7870	1254,1
4	Barley	Soybeans	395,2	25,7	44,6	25,7	439,8	11850	2043,5
5	Rapeseed + triticale	Soybeans	425,3	26,8	46,1	26,8	471,4	12200	1984,2

6	Triticale + canola + vica	Soybeans	445,3	27,4	45,6	27,4	490,9	12590	2144,0
7	Triticale + canola + vetch + green peas	Soybeans	476,9	29,0	46,6	29,0	523,5	13340	2301,2
8	Triticale + rapeseed + green peas + oil radish	Soybeans	495,3	28,1	45,7	28,1	541,0	13380	2300,0

A slight decrease in the yield of feed units and digestible protein is observed when using mixed crops without a legume component (var. 5), where the yield of feed units averaged over three years 7220.4 kg/ha, digestible protein - 1071.7 kg/ha.

The cultivation of clean sowing barley (var. 4) also turned out to be an effective technique. In comparison with pure crops of winter mustard (var. 3), when the yield of fodder units is up to 7114.2 kg/ha and digestible protein is up to 1185.7 kg/ha.

The smallest yield of feed units and digestible protein was observed with pure crops of winter mustard (var. 3) - 3236.2 kg/ha of feed units and 411.9 kg / ha of digestible protein.

The average yield of corn grain and silage mass (var. 1) averaged over three years 62.3 and 366.1 c/ha.

When cultivating soybeans (var. 2), the yield of grain and stems, respectively, was: 25.9 and 47.4 c/ha. The yield of fodder products (on average for three years) was obtained - 49.3 c/ha of fodder units and 889.0 kg/ha of digestible protein.

Relatively high indicators for the sum of two yields were obtained when sowing soybeans on grain after triticale + rapeseed + vetch + green peas and triticale + rapeseed + peas + radish sown in autumn. The average grain yield from three fields was 29.0 and 28.1 c/ha, green mass - 523.5 and 541.0 c/ha, fodder units 13340 and 13380, and the amount of digested protein was equal to 2301.2 and 2300 kg/ha (table 1). The experiments determined the change in the quality of the grain yield of soybeans sown after intermediate food crops, while in the 2nd option (control) with sowing soybeans in the fields without sowing intermediate crops, the number of beans on one plant averaged 52.3 pieces, the number of grains in one bean 2.1 pieces, and the mass of grains of one plant is 8.6 g and the mass of 1000 pieces of grains is 163.7 g.

The highest rates were obtained on the 7th option with sowing soybeans after mixed 4 components (triticale + rapeseed + vetch + green peas) and these figures, respectively, amounted to 57.1; 2.6; pieces 9.7 and 166.1 g, respectively by 4.8; 0.5; pieces 1.1 and 2.4 g more compared to the control, and compared with one component option of sowing after barley were more by 3.9; 0.3; pieces 1.0 and 1.1 g. In the studies, the analysis of the chemical composition of corn and soybeans was carried out, relatively better results were obtained on the 4th option when sowing soybeans after barley, where the amount of NPK was higher by 0.26; 0.04 and 0.06%, the amount of protein by 1.7%, protein by 0.9, fiber by 3.98%, calcium by 0.15%, and the amount of ash was 0.34% less than the control option (2nd version), relatively close to the above indicators were obtained in the 7th option, where soybeans were sown after 4 mixed components, while one of the important indicators, the amount of protein, was 2.9% higher than with control and by 2% compared to the 4th option.

The possibility of year-round use of the irrigated hectare in the study region was confirmed. In addition, the possibility of saturation of winter crops of catch crops with 2, 3, 4 components different in their biological characteristics was established, the feed is enriched with proteins, the soil fertility increases, as well as the productivity of crop rotation in general.

Thus, our studies have established a high efficiency of mixed crops consisting of 2, 3 and 4 components, especially when they are saturated with legumes and after them soybean crops for grain, providing not only high yields of grain and green mass but also improving the quality of feed.

Conclusions.

1. In the conditions of light gray soils of the Andijan region, as a result of sowing soybeans after four combined components of intermediate crops triticale + rape + green peas + oil radish in 1:1 crop rotation sowing schemes, an increase in productivity of 2.0-2.5 times was achieved.

2. Due to the stubble and root residues left in the soil after sowing autumn food crops of three or four types (triticale + rapeseed + vetch + radish) in the 0-50 cm soil layer, the amount of stubble and root residues increased by 102.0 centners/ha (in one component per 36.7 c/ha), as a result, the soil fertility increased, its agrophysical and agrochemical properties improved.

3. When using the land during the year, sowing soybeans for grain after four-component (triticale + rapeseed + green peas + oil radish) winter catch crops, the number of feed units was 13380, the amount and quality of protein increased, the bulk density of the soil decreased by 0.05-0, 03 g/cm^3, and the water permeability increased by 20.9 mm/h. When sowing soybeans after one type of food crops in the 0-30 cm soil layer, the humus content increased from 1.103% to 1.116%, and when sowing soybeans after four types of catch crops, it increased from 1.145% to 1.165%, the total amount of nitrogen from 0.121% to 0.141%, the humus content after four types of soybean catch crops increased by 0.042-0.049%, and the amount of nitrogen by 0.020%.

4. To preserve and increase the fertility of light gray soil soils in the Andijan region, attention should be paid to the need to introduce into agricultural circulation crops that leave behind large amounts of organic residues that restore soil fertility with a short rotation scheme (1:1) of sowing cotton - grain when sowing soybeans for grain after new types of combined crops autumn triticale + rapeseed + vetch + green peas and also triticale + rapeseed + green peas + radish introduced in the next sowing schemes, a high grain yield was obtained, which on average from three fields amounted to 29.0 and 28.1 c/ha , and green mass 523.5 and 541.0 c/ha, fodder units amounted to 13340 and 13380, the amount of digestible protein 2301.2 and 2300 kg/ha.

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ANALYSIS OF HOUSEHOLD EQUIPMENT USED IN AGRICULTURE

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Annotatsiya: Mazkur maqolada inson xayoti uchun bir kunlik me'yoriy iste`mol qilishi mumkin bo'lgan ozuqalarning kilokaloriyadagi miqdori ayollar va erkaklar uchun qancha bo'lishi, shuningdek qishloq xo'jaligida xayotda zarurat tug'ilib qolganda ishlatililadigan maishiy uy jihozlarining turlari va ularning mavjudligi to'g'risida so'z yurtilgan. Bunda xar bir oila o'zlarni extiyojlari uchun zarur bo'lgan turli xil donlarni va boshqa turdagi quruq bargxazon va xashaklarni maydalash hamda boshoqli makka donlarini mardakdan uqalashni mexanizatsiyalashgan usuli uchun qurilmaning kinematik sxemasi, yaratilayotgan qurilmaning taxminiy konstruksiyasi hamda ularning qisqacha taxlillari to'g'risida ma'lumotlar keltirilgan.

Kalit so'zlar. Me'yor, kilokaloriya, maishiy, mo'tadil, erkak, ayol, maydalagich, disk, qirqish pichog'i, don, makkajo'xori, kinematika, mardak.

Аннотация: В данной статьи описаны ежедневное количество нормативные потребности необходимые килокалории продуктов питании для женшинь и мужчины в жизненный деятелности человека, а также существования в настоящей временивиды бытовых принадлежности и их использование для нужды индувидуалного хозяйства в сельском хозяйстве. А также приведены краткий анализ полученных данные и испытание конструкции , детали и принципы работы разработанного универсального измельчителя для зерна , кукурузы и другие сухих сельскохозяйственных продуктов и опавших листьев деревьев а также даны кинематическая схема,предварительная образец конструкции устройствы и для отделки кукурузы от початков .

Ключевые слова. Норма,килокалория.бытовой, нормальный, мужчины, женжины,измельчитель, диск, нож, зерна, кукурузы, кинематика початки.

Abstract: This article describes the daily amount of the normative requirements of the necessary kilocalories of food for women and men in human life, as well as the existence in the present time of types of household accessories and their use for the needs of an individual farm in agriculture. And also a brief analysis of the data obtained and testing of the design, details and principles of operation of the developed universal grinder for grain, corn and other dry agricultural products and fallen leaves of trees are given, as well as a kinematic diagram, a sample of the manufactured design of the device and a test for separating corn from the cobs.

Keywords. Norm, kilocalorie, Household, normal, men, women, chopper, disc, knife, grain, corn, cob kinematics.

Introduction. Today, as a result of world population growth, the demand of peoples for daily food products is growing rapidly. According to statistics from several years of experiments, the total number of calories a person should consume during the day can range from 2,100 to 4,200 kcal for men and 1,850 to 3053 kcal for women [1]. Of course, these data are scientifically based, and these quantities depend on a person's age, weight, and height. A person will have the ability to think healthy and sane only if he eats a certain amount of food, which is 1850-4250 kcal, in order to live a healthy life, and he can have the ability to think both physically or mentally. Otherwise, it is impossible to expect a positive result from a person who is not full. From the above, we can conclude that the current policy of our state requires the same. Every state strives and strives to ensure the well-being of its people. In order to carry out such work, the policy pursued by our state today, that is, the policy of every household entrepreneur, is the same. At the same time, the employment of our peoples will be ensured.

It is no secret that the earth feeds all people on earth. Because all food is harvested on the ground. The earth feeds all man kind.

It is known that to date, large-scale enterprises are in crisis in the former Soviet republics. Because large factories and plants that operated during the former Soviet era have come to a standstill. This was due to the fact that the machinery, equipment, machinery and raw materials needed for the plants and factories were imported from other Allied republics or the finished products were exported to them. That is, we know very well that one republic has been dependent on another. At present, large-scale

factories have been privatized to produce a variety of small products and goods. As a result, the demand of our peoples for daily necessities has increased. Taking advantage of this, the People's Republic of China has captured the world market with its various machinery and household appliances.

At present, our state creates a wide range of conditions for many young people in the country, as well as for those who want to engage in agriculture. In other words, starting from the spring, a person who wants to make a contribution to the national economy by creating conditions for farming is allocated 10-20 hundred square meters of land and at the same time provides employment. People who take advantage of this are earning extra income for their families. This has become a key factor in increasing the volume of agricultural production and achieving an abundance of fruits, vegetables and melons. As a result, price stability in the markets will be ensured.

We are well aware that today in our homes we widely use a variety of household appliances, equipment and other small mechanisms. Such equipment includes meat cutting, laundry, haymaking, vacuum cleaners, various solids grinders, refrigerators, room cooling and heating appliances of various constructions, televisions, hair dryers, cooking utensils, etc. Many people in different parts of the country, as mentioned above, are cultivating 10-20 hundred hectares of land, planting corn, rice, beans, peanuts and many other agricultural products. We all know that corn harvested from such lands can be separated from mardak at home or taken to special places for rice cultivation. During the winter, we observed cases of homes being massaged to separate corn from mardak. So far, we have not seen a device to separate corn from mardak in single-family homes. But it should also be noted that the concept is that there are methods of massaging the drum as a result of hitting several corns with a mare and beating them together.

Literature review. In order to mechanize the separation of maize from maize harvested in single-family homes and to mechanize its grinding, certain experiments were carried out and in practice household appliances with a certain design structure were made and tested in practice [2,3].

A special design device has been created for crushing any dry, leafy, hay, corn, wheat and other dry substances at home, and it has been tested in practice with positive results. The proposed device for crushing dry leaf litter, hay and other types of solid dry matter is as follows.

Figure 1. Universal shredder for leaf and dry matter at home.

Figure 2. Internal view of the crushing device.

Figure 3. Types of discs that are fastened to the cutting blade (the first for corn grains, the second for foliar or dry hay).

Figure 4. Samples from deciduous orchards (grape, shotut and palm leaves) using the device.

As you can see, Figure 1 depicts the axonometric view of the device, while Figure 2 shows the replacement discs for crushing leaf litter and other types of dry matter. Figure 3 shows the internal appearance of the device in the absence of discs, with a sharp knife on both sides and a diameter of 8 mm each, designed to drop the

crushed mass. 40 holes equal to. The device is equipped with a motor with a power of 400 watts and a shaft speed of 3000 rpm. Geometric parameters The volume of the bunker is 0.03 m^3. equal, as you can see, in the form of a cylinder with a diameter of 300 mm. height is 400 mm. It is also possible to extract the powder from the dried topinambur fruit using this device.

Research Methodology. The aim of creating various experiments and constructive developments is to mechanize the manual labor processes, which in the future will create the necessary tools for home grinding of corn, wheat or other similar agricultural products and other processes.For this purpose, certain experiments were conducted at the Department of "Organization of agricultural machinery and maintenance" of the Andijan Institute of Agriculture and Agrotechnology. From such experiments, the time taken by a person to massage a kilogram of corn, ie to separate it from the husk, as well as the geometric dimensions of the corn with the husks were determined. After that, mechanization of this process was started. To do this, we found it advisable to use an old washing machine with an electric motor. Its power is *P = 180* watts and its frequency is *n = 1420 rpm*. To do this, a kinematic scheme of the device of the following design was developed and in practice began to prepare a model copy of it (Figure 5).

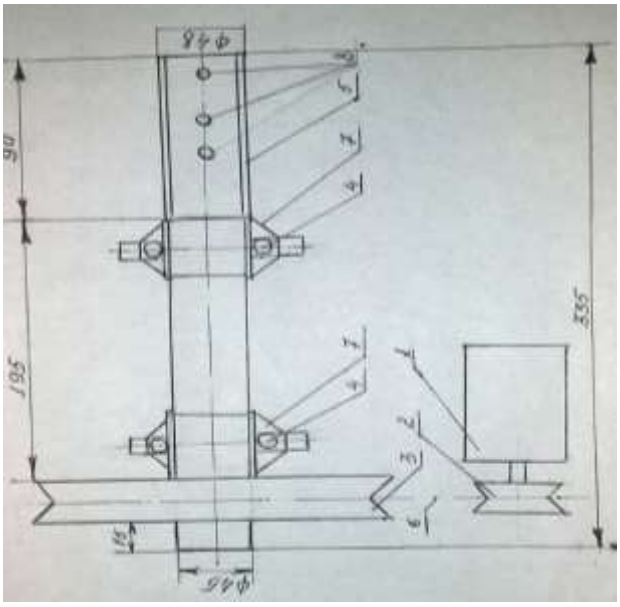

Figure 5. Kinematic diagram of a corn massage device.

It is planned to implement the design of the device in the form of a chair, including 1 electric motor, 2 drive pulleys, 3 drive pulleys, 4 bearings, 5 rotating shafts, 6 belt drives, 7 bearing supports, 8 adjustable pegs. (stir)

Analysis and result. Prior to the creation of the proposed device, statistical data were collected by measuring the geometric dimensions and weights of several giant corn husks in the wet state. Based on this, the dimensions of the device were established. The geometrical parameters of the corn cobs, the length of the pods *(L)*, the ends of the pods *(d_1)* and the diameter of the lower side *(d_2)* and the mass *(m)* of the weight of each pod were measured. The purpose was to select the diameters of the rotating shaft. Of course, the spikes vary in size from 134 to 250 mm in length, 32 to

41.5 mm in diameter at the head, and 39 to 54 mm in diameter at the bottom. (of course, these data are the average value of the 30 maize stalks we selected).

Based on the above data, we theoretically analyzed the device and laid the foundation for the geometric parameters and components of our design. It is given: engine power Nd = 180 watts, shaft speed $n_1 = 1420$ *rpm*, diameter of its pulley $D_1 = 48$*mm*, diameter of the drive pulley attached to the rotating shaft $D_2 = 180$*mm*, length of the belt belt $L_t = 1250$ *mm*. In this case, the number of transmissions of the belt drive is determined as follows

$$i_{uz}=\frac{180}{48} = 3{,}75$$

This means that the rotational frequency of the corn shaft rotates 3.75 times less than the rotational frequency of the engine shaft. $n_2 = 370$ *rpm*. Of course, the shattering of the belt drive is not taken into account here.

Figure 6. Unmasked and massaged corn husks.

The experiments were carried out four times and the average time spent on them and the amount of corn grains were subtracted. Its results can be seen in the table below (Table 1).

The time taken to massage the corn husks and their weight masses.

Table 1

N^0 t\r	Weight of corn in a glass jar, gr	Time spent massaging the corn, sec
1.	750	186
2.	735	147
3.	845	105
4.	800	122
Average	782,5	140

Based on the data in the table, the productivity of 1 hour of manual labor per 1 person was determined. Approximately $W_h = 20$ *kg / h.*

Conclusion. In conclusion, it should be noted that in agriculture, many individual households and entrepreneurs are now cultivating corn on a very large area. In most cases, manual grinding of corn kernels is carried out in households. In most cases, manual grinding of corn kernels is carried out in households. We hope that the proposed

device will certainly facilitate manual labor and benefit our people in agriculture by facilitating manual labor.

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PROTECTING POMEGRANATES AGAINST THE MAIN DRYING PEST

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Annotasiya. Mazkur maqolada anor shirasining biologiyasi va zarari bo‘yicha ilmiy tadqiqotlar natijalari keltirilgan bo‘lib, anorzorlarda anor shirasining zarar keltirish darajasiga yetishini kutmasdan barg yoza boshlaganda yoppasiga qiruvchi zaharli kimyoviy moddalardan ishlov berish maqsadga muvofiq. Anor shirasiga qarshi barcha xlornikotinoid preparatlar har gektariga 0,2 l (kg) sarf etilganida eng yuqori samara 14 kun mobaynida 97-99 % gacha bo‘ldi.

Kalit so‘zlar: anor, anorzor, zararkunanda, zararlanish, anor shirasi, lichinka, qarshi kurash

Аннотация. В этой статье представлены результаты научных исследований биологии и вреда гранатовой тли и рекомендуется обрабатывать её токсичными химическими веществами, которые массово убивают его, когда он начинает сбрасывать листья, не дожидаясь, пока гранатовая тля достигнет уровня повреждения. Поскольку в это время количество полезных насекомых невелико, тля не успевает спрятаться внутри деформированных листьев.

Ключевые слова: граната, гранатовый сад, вредитель, вредоносность, гранатовая тля, личинка, меры борьбы

Annotation. In this article is presented the results of scientific research on the biology and harm of pomegranate juice, and it is advisable to treat pomegranate juice with toxic chemicals that kill it en masse when it starts to shed leaves without waiting for the pomegranate juice to reach the level of damage. When all chlornicotinoid drugs were consumed against pomegranate juiceat 0.2 l (kg) per hectare that the maximum effect was 97-99% in 14 days.

Key words: Pomegranate, pomegranate pest, pest, pomegranate juice, larvae, control.

Introduction. Horticulture is the most labor-intensive branch of agriculture in the country. Since the first years of independence, special attention has been paid to the development of the horticultural industry.

On the basis of the proposals of President Sh. M. Mirziyoyev on the creation of intensive parks, expansion and development of territories on the territory of the republic, large-scale work is being carried out.

After all, ensuring the country's food security, growing quality fruits and vegetables for the population is one of the main foundations of well-being.

Literature review. Grace table and pomegranates planted it in accordance with the requirements of the fruits of development, in addition to a number of pests - the arguments actually became directly related to protection [5].

Methodology. Pomegranate trees affect the pomegranate aphid (Aphis punicae), the pomegranate scale insect (Aspidiotus hederae, Coccus magnoliarum, Lepidosaphes ulmi), the moth (Euzophera punicaella Mooze), the comstock worm (Pseudococcidae); Diseases include phomopsia, gray rot of fruits (Kulkov, 1986; Nabiev, 1991; q / x encyclopedia, 1949; Popov, 1961).

In 2018-2019, we studied the biological properties of the pomegranate aphid (Aphis punicae Pass), one of the most significant and persistent pomegranate pests, as well as its harmfulness.

This pest lives only on the pomegranate plant. Size 1.75 - 2.00 mm, the body is ovoid, light green, with dark green spots on the abdomen. Winged spreaders are dark green and stand out from the rest. Aphids live in the newly emerged shoots of the plant, in the lower and upper parts of new leaves, in parts of the flower and feed, sucking the sap [3]. Fallen leaves curl and become dirty, under the influence of aphids they stop functioning and dry up [1]. Attacking young twigs and pomegranate leaves, the colony forms clusters. The normal state of the plant is disturbed, growth slows down, young branches wither.

Under the influence of aphids, the yield decreases, the fruits fall off unripe, the quality of ripening deteriorates. The skin of the fruit darkens and becomes infected with aphids. Homemade syrup is formed in a full cycle. Winters in an ovoid state around the buds of branches. The founders of this sap begin to emerge from winter, when the buds begin to wake up in early spring when the pomegranate leaves begin to write. The awakening of the buds coincides with the moment the larvae emerge from the egg, and in most cases occurs simultaneously. The clutch of eggs by the founders

depends on the weather and lasts 15-20 days. The total amount of useful temperature is 400 - 4200C. Observations have shown that the larvae of the first founders begin to emerge at an average air temperature of + 140C and a relative humidity of 64% [2].

From the above, it can be seen that the release of pomegranate aphids from eggs depends on natural climatic factors, biological properties of plants and many other factors. The founder of the generation of aphids that emerged from overwintered eggs and gave rise to all the next generations. These insects hatch in spring, grow rapidly, and upon reaching the imago station reproduce several parthenogenetic generations of wingless insects. [3]. As a rule, the founders hatch from the eggs at the same time as the buds open or the shoots of the primary food plant appear. This usually occurs in late March or early April (for example, melon aphids leave their wintering grounds when the air warms up to 12 degrees). Within about 2 weeks, and under favorable conditions, aphids after 5-8 days, they grow up, and the next 2 weeks they multiply. During this time, one aphid is capable of spawning from 40 to 200-300 larvae of the next generation. [1] Depending on the type of plant on which the pest feeds, the founder lays 5-15 larvae per day. This is especially true in mountainous and foothill areas. The intensive development of the founders of the pomegranate aphid occurs in the second half of April, and they occur until the end of April - the first half of May.

Wingless female - reproduce by parthenogenesis. Wingless insects appear among both migratory and non-migratory aphids. They are born from the founding female and themselves, in turn, give several spring-summer generations of insects. The appearance of wingless insects and their further reproduction is due to a combination of certain abiotic factors: an increase in air temperature and an increase in the duration of daylight hours [1].

Analysis and results. Wingless live reproductive aphids can be found in large numbers in the last 10 days of April. From one viviparous wingless aphid, 160-210 aphids are born in 5-6 days. Founding aphids and wingless viviparous aphids give birth more often in the dark part of the day than in the light one. In years with favorable weather, it is observed that every 8-10 days, separate aphids are formed, which begin to multiply. By mid-May, aphid development is at its peak, development is at its peak, during which time it forms a large colony on the leaves, at three points of growth, flower-based, fruit-based.

Among these colonies, a winged individual (or a winged female) is formed - the phase of the life cycle of aphids, which ensures the dispersal of the colony and migration to other plants. They fly to other intact plants and spread throughout the pomegranate plantation. In general, for good development of the second and new generations of pomegranate aphids, the maximum air temperature is 24-260C, the minimum is 16-180C, and the relative humidity is 78-85%. And vice versa, at high or low air temperatures, the life processes of aphids slow down, the interval between peeling of the peel lengthens, and nutrition deteriorates.

In pomegranate gardens from mid-May to late June, aphids strongly affect the pomegranate plant. An increase in the number of aphids at this time takes into account 4–6 generations, depending on conditions. The pomegranate aphid reaches the level of pomegranate infestation in the last 10 days of April.

At this time, when the number of the pest is two mature insects per leaf, when it reaches up to 35-40 pieces, then the shine of the leaves begins to disappear, the color changes from green to light green. The edges of the leaves begin to curl inward.

Picture 1. Damage to the pomegranate aphid (Aphis punicae)

Under the influence of the pest, the fruits and leaves of the pomegranate begin to darken. At the time of growth, reddish leaves begin to turn yellow, growth slows down, especially when leaves with aphids are closed under the influence of pest juice, leaf respiration and metabolic processes deteriorate. The pressure of turgor in them, the tension of the leaves disappears.

Conclusion/Recommendations. In pomegranate orchards, it is recommended to treat against the pomegranate aphid from toxic chemicals (nitrophene, imidor) when it begins to shed its leaves without waiting for it to reach a level of damage. Since at this time the number of beneficial insects is small, the aphid does not have time to hide inside the deformed leaves. Other arthropods do not lay eggs. The absence of this time leads to a rapid increase in the number of pests and widespread use of pesticides, which destroy all insects in this agrocenosis and pollute the environment. Processing at the specified time does not have a negative impact on the beneficial entomo fauna.

1) Parasites and predators enter pomegranate gardens later than weeds. Control observed trees will not undergo chemical treatment until the end of April, which will lead to a sharp increase in the number of pests. 2) At this time, the grenade is severely damaged by the pest. Pomegranate orchards aged 5 to 6 years are severely damaged. Young seedlings are damaged before drying out. 3) The leaves and fruits of the plant are strongly shaken under the influence of the liquid secreted by the pest. Ripe fruits fall from some trees. 4) At this time, chemical treatment of pomegranate plantations is effective.

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APPLICATION OF ORGANIC-MINERAL COMPOST AND YIELD AGRICULTURAL CROPS

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Annotatsiya: Paxta yetishtirishda bo'z tuproq sharoitida kuzgi bug'doy+suli ekish soya orqali, organik-mineral kompost (15 t/ga) qo'llash bilan g'o'za, kuzgi bug'doy uchun N-150, P-100, K-75. kg/ga foydalanishning so'ya va paxta hosildorligiga tasiri bayon qilingan.

Kalitso'zlar: kuzgi bug'doy, qayta ekish-soya, Organik-mineral kompost, mineral o'g'it, azot, fosfor, kaliy, paxtahosildorligi.

Abstract. In the condition of light-grey soil in growing cotton in the table 1:1 autumn wheat+replanting oats, cotton, organic-mineral compost (15 t/ga) to autumn wheat with N-150, P-100, K-75 kg /ga and replanting oats gives positive influence to the productivity of cotton.

Key words: autumn-wheat, replanting-oats,Organic-mineral compost, mineral fertilizer, nitrogen, phosphorus, potassium, productivity of cotton.

Introduction. As you know, good nutrition of plants is not only one of the main factors of a high yield, high-quality production is ultimately good nutrition and human health. We can say the harmony of man and our nature. Plants, as the first link in the

human chain, serve as the main source of proteins, fats, vitamins and biological active substances for both humans and other animals.

Inadequate plant nutrition leads to the need for synthetic food additives. Therefore, the scientifically grounded use of organic mineral fertilizers in agriculture is of great practical importance.

Literary review. There are a lot of works have been doing for applying organic-mineral compost and yield agricultural crops. In this direction a lot of scientists had done several works. They are IminovAbduvaliAbdumannobovich, Tursunhodjayev Z.T., Bolkunov A.S, Mirzahonov K.M, Umarova P and so on.

Research methodology. In this article analysis and synthesis, abstract-logical thinking and comparison methods were used.

In Uzbekistan, large-scale measures are being taken to efficiently use the available land and water resources for the fullest satisfaction of the population's needs for food and other types of agricultural products, as well as the production of raw materials for the industry, an annual uninterrupted, two-three-fold high-quality harvest, as well as an increase in the volume of products obtained. [1-2].

In this regard, when introducing short crop rotation systems on irrigated lands, the main attention should be paid to the cultivation of cereals, legumes, and vegetable crops that contribute to the preservation and increase of soil fertility and the provision of food to the population, their cultivation as secondary and catch crops with the use of organo-mineral composts.

Analysis and Results. All these issues together with efficient land use are urgent tasks [3-5]. Our experiments were carried out "Omad-97" with a short-rotation crop rotation of 1: 1 (winter wheat + repeated soybean culture: cotton), the aftereffect of the previously introduced organic-mineral compost (15 t / ha) and the effect of soybeans on fertility were studied soils and cotton productivity in the Andijan. On the control variant, N-180, P2O5-125, K2O-90 kg / ha were used.

The soil under the experiment is light gray soil, medium loamy in texture, groundwater occurs at a depth of 4-5 m.

The studies were carried out in time and space (each year at a different site). The cotton variety Andijan-36 was cultivated. The following types of fertilizers were used: ammonium nitrate (N 33-34%), superphosphate (N 5-6%, P2O5-32%), potassium chloride (K2O-60%). Organic-mineral compost was prepared on the basis of cattle manure and 10% NKFU (nitro- phosphate) and stored in piles for 4 months. In the fall, before sowing winter wheat, it was introduced into the soil according to the experimental scheme. It contained total nitrogen - 0.5%, phosphorus - 0.28%, potassium - 0.7%.

Before laying the experiment, the soil contained: total humus in soil layers 0-30 and 30-50 cm, respectively, 1.068-0.648%, nitrogen 0.106-0.086%, phosphorus 0.193-0.071%, potassium 1.67-1.56%, N- N03 -17.5-6.6; P2O5 27.6 - 12.6 and K2O-190-130 mg / kg soil.

Phonological observations carried out on August 1 showed that in the variant where cotton was cultivated after winter wheat (1-background) with the introduction of N-150, P2O5-100, K2O-75 kg / ha, the height of the main stem was 90.8 cm, the number of sympodial branches 11.2 pcs., boxes (September 1) 10.1 pcs., including

opened 2.8 pcs. Application against this background on cotton N-200, P2O5-140, K2O-100 kg / ha led to a further improvement in the growth, development of plants, and the above data, respectively, amounted to 92.8 cm, 12.1; 11.0 and 2.9 pieces, which is 2.0 cm, 0.9; 0.9 and 0.1 pcs. more in comparison with the 1st variant of experience. With an increase in the norms of mineral fertilizers to N-250, P2O5-175, K2O-125 kg / ha, no significant differences were observed between the options.

It was found that when using only mineral fertilizers on winter wheat in the amount of N-180, P2O5-125, K2O-90 kg / ha on cotton, the optimal rates were N-200, P2O5-140, K2O-100 kg / ha. It should be noted that similar results were also obtained in other experiments.

On the second background, created on winter wheat by introducing N-180, P2O5-125, K2O-90 kg / ha and 15 t / ha of organic-mineral compost when applied to cotton N-150, P2O5-100, K2O-75 kg / ha the height of the main stem of cotton was 93.5 cm, the number of sympodial branches was 13.1 pcs. and boxes (1.09) 11.2 pcs., including opened 3.5 pieces. These indicators, in comparison with the parallel (1) version of the 1st background, were respectively 2.7 cm, 1.9; 1.1 and 0.7 pieces, which is explained by the improvement of soil fertility after the introduction of organic-mineral compost (15 t / ha) on winter wheat. Against this (2) background, when applying fertilizers on cotton in the amount of N-200, P2O5-140, K2O-100 kg / ha, the height of the main stem was (1.08) 95.2 cm, the number of sympodial branches 14.1 pcs., Bolls (1.09) 12.1 pieces, including open 3.8 pieces, which is 1.7 cm, 1.0; 0.9 and 0.3 pcs. more in comparison with the 4th option.

On the third background of the experiment, where N-180, P2O5-125, K2O-90 kg / ha (without compost) were applied on winter wheat and a second crop was cultivated - soy, when N-150, P2O5-100, K2O- 75 kg / ha (7-var.), At the end of the growing season the height of the main stem was 94.5 cm, the number of sympodial

branches 14.1 pcs., Bolls (1.09) 13.6 pcs., Including open 3.8 PC. These indicators were more, respectively, by 3.7 cm, 2.9; 3.5 and 1.6 pcs. in comparison with the parallel versions of the 1st background, and the 4th version (2nd background) by 1.0 cm, 1.0; 2.4 and 0.3 pcs.

It was revealed that in order to improve the growth and development of cotton, it is necessary not only to introduce organic-mineral compost for winter wheat, but also to cultivate a re-culture of soybeans.

It was determined that relatively high experimental values were obtained on the 4th background, where N-180, P2O5-125, K2O-90 kg / ha + 15 t / ha organic-mineral compost were introduced on winter wheat and a repeated soybean culture was cultivated. Against this background, when using N-150, P2O5-100, K2O-75 kg / ha on cotton (10-var.), The height of the main stem was (1.08) 98.0 cm, the number of sympodial branches 15.2 pcs., Bolls 14.1 pieces, including 3.9 disclosed pieces.

Table 1

Cotton productivity depending on the norms of mineral fertilizers and the aftereffect of organic compost and re-culture of soybeans (c / ha)

Variant number	Fertilizer rates on winter wheat, kg / ha	Mineral fertilizer rates on secondary crops, soybeans kg / ha	Norms of mineral fertilizers on cotton, kg / ha			Years			On average for 3 years	Increase in yield			
			N	P_2O_5	K_2O	2014	2015	2016		From the effect of repeated soybean culture	From the aftereffect of organic-mineral compost	From soybeans and compost together	From the norms of mineral fertilizers one
1	N-180, P-125, K-90	Not sown	150	100	75	31,5	32,3	31,6	31,8	-	-	-	-
2			200	140	100	33,8	35,4	34,3	34,5	-	-	-	2,7
3			250	175	125	34,1	36,2	35,3	35,2	-	-	-	3,4
4	N-180, P-125, K-90 Compost 15 т/га	Not sown	150	100	75	32,8	34,6	33,4	33,4	-	1,6	-	-
5			200	140	100	35,9	37,6	36,0	36,5	-	2,0	-	3,1
6			250	175	125	36,6	38,9	37,3	37,5	-	2,3	-	4,1
7	N-180, P-125, K-90	N-25, P-90, K-60	150	100	75	37,0	38,6	37,8	37,8	6,0	-	-	-
8			200	140	100	37,6	39,1	38,0	38,3	3,8	-	-	0,5
9			250	175	125	37,9	40,1	38,7	39,1	3,9	-	-	1,3
10	N-180, P-125, K-90 Compost 15 т/га	N-25, P-90, K-60	150	100	75	38,8	40,8	39,8	39,8	6,4	2,0	8,0	-
11			200	140	100	39,2	41,1	40,0	40,1	3,6	1,8	5,6	0,3
12			250	175	125	34,7	42,1	41,0	40,8	3,3	1,7	5,6	1,0

It should be noted that these indicators were relatively high in comparison with the rest of the test options.

It was found that with a short-rotation scheme (1: 1) crop rotation, the application of mineral fertilizers N-180, P2O5-125, K2O-90 kg / ha and 15 t / ha of organic-mineral compost improves soil fertility, increases the productivity of winter wheat, as well as repeated soybean crops, which ultimately lead to a greater accumulation of root and crop residues, and also creates optimal nutritional conditions for the subsequent cotton crop.

In conclusion, we can say that in the conditions of light gray soil of the Andijan region, in order to increase soil fertility and productivity of cotton crop rotation, it should be applied against the background of mineral fertilizers and organic-mineral compost (15 t / ha) for winter wheat, as well as to cultivate repeated legumes soybeans.

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DEPENDENCE OF SOIL PROPERTIES ON THE APPLIED HERBICIDES

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Annotasiya. Maqolada Andijon viloyati o'tloqi tuproqlarda gerbisidlar va ularni o'g'itlar bilan birga qo'llashning tuproq azot rejimiga ta'siri o'rganilgan. Dala tajribalarida shu narsa aniqlanganki u gerbisidlarni va ularni ma'danli o'g'itlar bilan birga qo'llash tuproqdagi oson o'zlashadigan nitrat azoti miqdoriga ijobiy ta'siri

aniqlangan. Natijada g‘o‘za o‘simligining o‘sishi qulay sharoitda o‘tganligi aniqlangan.

Kalit so‘zlar: stomp, strobi, gerbisidlar, mineral o‘g‘itlar, nitrat azoti, g‘o‘za, kuzgi bug‘doy, begona o‘tlar, ammiakli azot, harakatchan fosfor.

Аннотация. В статье приведены результаты полевых исследований по влиянии гербицидов «СТОМП» и «СТРОБИ» и их совместное применение с минеральными удобрениями на азотный режим орошаемой луговой почвы. Определено, что указанные гербициды с минеральными удобрениями положительно влияли на содержание нитратного азота.Установлено, в связи с применением гербицидов Стомп и Стробы рост, развитие растений хлопчатника проходить значительно лучших условиях.

Ключевые слова: стомп, строби, гербициды, минеральные удобрения, нитратный азот, хлопчатник, озимая пшеница, сорные растение, аммиачый азот, подвижный фосфор.

Abstract. The article presents the results of field studies on the effect of herbicides "STOMP" and "STROBI" and their combined use with mineral fertilizers on the nitrogen regime of irrigated meadow soil. It was determined that these herbicides with mineral fertilizers had a positive effect on the content of nitrate nitrogen. It has been established that, in connection with the use of herbicides Stomp and Stroba, the growth and development of cotton plants undergo much better conditions.

Key words: stomp, strobe, herbicides, mineral fertilizers, nitrate nitrogen, cotton, winter wheat, weeds, ammonia nitrogen, mobile phosphorus.

Introduction. In the decisions and decrees of the President of the Republic of Uzbekistan and the government, scientists and farmers have been assigned specific tasks to increase the yield of agricultural crops, the quality of products and environmental protection, to meet the needs of the country's population.

One of the main tasks in the field of agriculture is the further development of cotton and grain growing, this can be achieved through the introduction of more productive varieties of cotton, grain crops, especially winter wheat, the correct development of scientifically grounded crop rotations, as well as the correct and effective use of fertilizers, plant protection products so how weed infestation of fields brings a high level of crop yields (up to 15-20% or more). The chemical method of control, as the most affordable, effective, although not cheap, will retain its leading place in the complex of agricultural activities in the coming years. For further study of the effectiveness of herbicides, it is necessary to investigate the nature of their action on cultivated and weed plants, as well as on the agrochemical properties of soils. It should be noted that the effect of herbicides "Stomp" and "Strobi" on the agrochemical properties of soils has not yet been studied, all this shows the relevance of the observed studies.

In connection with the above, we carried out field experiments and laboratory analyzes with the task of determining the effect of herbicides Stomp, Strobi on the agrochemical properties of soils, on the growth, development and yield of cotton in the conditions of irrigated meadow soils of the Andijan region.

Literature review. Literature data show that one of the ways to reduce the unproductive removal of nutrients by weeds, which improve soil fertility, is the use of

herbicides, which, having an inhibitory effect on weeds, contribute to a more productive use of nutrients by cultivated plants [1.2.3,4,5].

By the work of the researchers [6.8.9.10,11] Aliyev it was established that when the optimal doses of herbicides were applied in different soil and climatic regions, in the variants with the use of herbicides, the content of nitrate, ammoniacal nitrogen and mobile phosphorus was higher than in the control variant.

Familiarization with the scientific results of domestic and foreign authors on the effect of herbicides on the agrochemical properties of different types of soils testifies that herbicides applied when sowing crops have a diverse effect on the content of basic nutrients.

Research methodology. Field experiments were carried out in the Altinkul region of the Andijan region of the Republic of Uzbekistan.Most of the region's territory is located on the left bank of the Kara-Darya. A part of the Pakhtaabad region and the Izboskan region are located on the right bank.

In general, the region is located in an arid climatic zone. A characteristic feature of the climate is a sharp continentality, in addition, the confinement of annual precipitation, mainly to the winter-spring period. In old-irrigated meadow soils, the highest amount of humus (Table 1) falls on the horizon of 10-30 cm - 1.35%, and its content evenly decreases with depth. The distribution of total nitrogen along the profile of the section is similar to humus and varies within 0.091-0.121% in the upper horizons (30-50 cm). These soils are comparatively rich in gross phosphorus and potassium. The maximum CO_2 of carbonates is located at a depth of 80-90 cm, and in general, its distribution along the profile is uniform, 7.40-8.17%.

Table 1

Agrochemical soil characteristics

Horizon depth, cm	Content, %				
	humus	nitrogen	phosphorus	potassium	CO_2 carbonates
0-10	1,27	0,113	0,213	2,35	8,17
10-30	1,35	0,121	0,195	2,19	7,86
30-41	1,05	0,097	0,196	2,24	7,65
55-65	0,90	0,091	0,158	2,20	8,05
80-90	0,75	0,063	0,161	1,97	9,14
100-110	0,54	0,045	0,155	2,01	8,12
130-140	0,31	0,030	0,112	2,07	8,00
160-180	0,26	0,015	0,112	2,38	7,40

In terms of the amount of nitrate and ammonia nitrogen, irrigated meadow soils rank first among the soils of the region. The content of mobile phosphorus and exchangeable potassium in meadow soils is also low and amounts to 18.3-21.6 and 220-200 mg / kg of soil.

These soils are poorly provided with mobile types of nutrients. Our studies to study the effect of herbicides Stomp and Strobi together with mineral fertilizers on the

agrochemical properties of soils, on the growth of cotton plants and weeds were carried out in the Altinkul district of the Andijan region.

The soils of the experimental plot are irrigated meadow on proluvial-alluvial deposits, non-saline. They are confined to the middle part of the alluvial cones of the rivers on the pre-adier piedmont plain. Groundwater occurs at a depth of 2-3 meters.

The humus content in the arable horizon is equal to 1.05-1.20%, total nitrogen - 0.097 -0.115% of total phosphorus and potassium, respectively, equal to -0.183-0.189 and 2.24-2.49%. Down the soil profile, the amount of gross nutrients decreases steadily. Here the potassium content should be highlighted, which equals 2.07% in the 130-140 cm layer, as can be seen again increasing.

Agrotechnics based on field experience was generally accepted for this soil and climatic region. All types of activities for the care of cotton crops and phenological observations were carried out by us independently and with our participation.

Experience scheme

1. Control - N -180, P_2O_5 - 170 and K_2O - 100 kg / ha (FON)
2. Stomp 1.5 kg / ha + FON
3. Stomp 2.0 kg / ha + FON
4. Strobe 1.5 kg / ha + FON
5. Strobe 2.0 kg / ha + FON

In soil samples under laboratory conditions, the following was determined:

1) Mechanical composition according to the bootie method using sodium hexamethophosphate.
2) Humus according to the Tyurin method.
3) Total nitrogen according to Kjeldahl.
4) Gross phosphorus, potassium according to the method of K.E. Ginzburg, modifications of I.M. Maltseva and A.I. Gritsenko.
5) CO_2 carbonates –acidemetric.

The research works were carried out using “Methods for conducting experiments with cotton” (1983) to do field researches, “Methods of agrochemical analyzes of soils and plants” (1977) to analyze agro chemical features, and “Methods of agrophysical research” (1973) to analyze agro physical features of soil.

Analysis and results. As you know, the main criterion characterizing the nutritional regime of cultivated plants is the content of mobile forms of nitrogen, phosphorus and potassium. The normal development of plants, the size and quality of the resulting crop depend on them.

To study the norms for the use of herbicides for the content of nutrients on irrigated meadow soils widespread in the Andijan region, we took soil samples from the sections laid in different areas where herbicides were used, applied for one year, 3-4 years and more than 5 years.

It is noticed that in the initial phases of cotton vegetation, the content of nitrates in the soil in the case of using herbicides is not high.

Table 1

Effect of herbicides on nitrate nitrogen content

Option number	Experience options	Herbicide dose, kg / ha	Horizon depth, cm	Development phases of cotton and nitrate content, mg / kg				
				Before sowing	2-4 standing leaves	Budding	Bloom	End of vegetation
1	Control	0	0-10	20,2	28,3	26,0	20,3	11,2
			10-20	12,1	15,5	14,7	10,9	8,4
			20-30	8,1	11,2	10,8	8,0	3,6
			30-50	3,8	5,6	6,3	3,6	2,3
2	Stomp	1,5	0-10	19,0	24,5	42,9	27,5	13,6
			10-20	11,6	16,6	27,5	17,6	3,5
			20-30	8,1	12,2	15,2	10,3	6,8
			30-50	4,9	6,7	10,8	6,7	1,4
3	Stomp	2,0	0-10	22,5	31,0	52,0	31,1	15,6
			10-20	15,5	19,8	24,7	17,5	10,7
			20-30	9,9	12,6	13,7	12,7	7,7
			30-50	5,5	9,3	10,1	8,5	4,9
4	Strobe	1,5	0-10	19,0	25.9	41.6	24.7	14.3
			10-20	12,9	16,0	20,1	13,6	9,2
			20-30	9,5	12,1	12,9	12,1	6,0
			30-50	5,4	6,9	10,5	8,5	2,6
5	Strobe	2,0	0-10	21,9	31,9	55,6	30,8	15,3
			10-20	14,6	17,1	22,1	17,9	9,9
			20-30	9,7	11,8	12,7	10,4	6,8
			30-50	6,5	8,0	10,3	8,9	1,8

Its value was 18-33% higher than that in the variants where the herbicides were applied separately, by belt methods during sowing. The greatest accumulation of nitrates in the arable (0-10, 10-20 and 20-30 cm) and subsurface horizons (30-50 cm) was found in the period of 2-4 true leaves. Down the profile, their content decreased, reaching a minimum in the horizon of 30-50 cm.

In the variants with strobe, the content of nitrate nitrogen in the soil was the highest when the drug was used at a dose of 2.0 kg / ha by the belt method. Here, the amount of nitrates in phase 2-4 of these leaves was equal to 70.6 mg / kg versus 46; 7 mg / kg in the control variant of the experiment.

From budding to the end of the cotton growing season, the amount of nitrates in the soil in the experimental variants was higher than in the control variant.

Conclusion and Recommendations: 1. on the basis of the studies carried out, it can be argued that Stopm, Strobi and their mixtures with mineral fertilizers in different doses and methods of application on cotton crops, destroying weeds and reducing their useless removal of nutrients, contribute to a more significant accumulation of nitrate nitrogen in the soil .

2. Consequently, the growth, development of plants takes place in more favorable conditions, and this contributes to an increase in the productivity of cotton plants.

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THE INFLUENCE OF VARIETIES OF WINTER LENTILS ON THE DENSITY OF PLANTINGS AND THE TIMING OF SOWING ON THE COMPOSITION OF THE GRAIN YIELD OF PLANTS.

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Annotasiya. Olib borgan dala tajribalarida o‘rganilgan kuzgi yasmiqning Darmon va Sarbon navlarini gektariga 850, 1100, 1300 ming tup ko‘chat qalinligida ikki xil muddatda o‘stirilganda o‘simliklarda hosil qismlarining shakllanishi turlicha bo‘lishi kuzatildi.

Kalit so‘zlar. Kuzgi yasmiq, nav, Darmon, Sarbon, variant, muddat

Abstract: In our field experiments carried out for this purpose, it was revealed that when growing varieties of winter lentils Darvon and Sibron with a planting density of 850, 1100 and 1300 thousand grows / ha. at two different planting dates, the formation of crop components in plants varied.

Key words: winter lentils, variety, Darvon, Sibron, variant, term

Introduction. In the republic, the cultivation of winter lentils is expected to open the way for the development of this important food crop. For this purpose, a lot of scientific research is being carried out in our country. Experiments to determine the optimal planting dates, the norms of plant density of mineral fertilizers, the optimal water and nutritional regimes for soil and climatic conditions, on the basis of this, making recommendations ensures a wide distribution of this variety for any newly created variety.

Literature review. In our field experiments carried out for this purpose, it was revealed that when growing varieties of winter lentils Darvon and Sibron with a planting density of 850, 1100 and 1300 thousand grows / ha. at two different planting dates, the formation of crop components in plants varied. The height of the main stem of the autumn lentil variety Sibron was higher in the variant with a plant density of 1100 thousand plants / ha, in the 1st planting period it was 44.2 44.1 cm. In the other two variants, the height of the main stem was 4.1 and 1,5 cm below. In the Darvon variety, the height of the main stem is observed in the variant with a planting density of 1300 thousand hectares / ha, by 45.4 and 45.9 cm, respectively, or 3.6–1.9 and 3.1–1.3 cm higher, than in other options.

Results and discussion. The number of beans formed in each bush is 37.1-41.4, for Sibron and Darvon varieties - 39.2-43.1 in variants with 850,000-1100,000 bushes, and with a variant with 1300 thousand plant / ha the number of beans in plants it decreased by 1.8-8.7, on each bush - to 34.4-35.3. A similar situation was observed in the second planting period (table 1.)

One of the main criteria in analyzing the results of research aimed at improving the technology of growing crops is yield. In field experiments carried out this year, the

highest yield of both varieties was observed in variants with a planting density of 1,100,000 bushes per hectare (table 2.)

In the first sowing period, the yield of the Sibron variety in the first variant was 16.3 c / ha, the Darvon variety - 20.3 c / ha. In the variant with a planting density of 850 thousand plants / ha, the lowest yield was 15.7 and 15.6 c / ha, respectively, for the Sibron and Darvon varieties. With a planting density of 1,300,000 plants / ha, the yield decreased by 0.2 c / ha for the Sibron variety and by 1.2 c / ha for the Darvon variety.

The same results were obtained in the second term of sowing winter lentils. The Sibron variety gave a yield of 16.4 kg / ha with a planting density of 1,100,000 shoots, which is 1.4 centers / ha more than the variant with a planting density of 850,000 bushes and 1,300,000 bushes. For the Darvon variety, these readings were 17.2 and 0.1.0.6 c / ha, respectively. Based on this, this year high yields were achieved in the bushes of the winter lentil varieties Sibron and Darvon with a planting density of 1,100,000 bushes for both planting periods.

When comparing the yield by sowing dates, the sowing on October 20, the yield was higher. When sown on November 5, the yield of winter lentils was 1.1 - 1.8-0.2 c / ha for the Sibron variety and 0.7 - 3.1-0.8 c / ha for the Darvon variety, compared to October 20. Therefore, it is advisable to plan the optimal planting date for winter lentil varieties Sibron and Darvon on October 20.

Based on the results of field experiments and laboratory analyzes carried out in 2012-2013, we present the following conclusions and recommendations based on the characteristics of the cultivation of winter lentils.

Table 1.

Influence of varieties of winter lentils on the density of plantings and the timing of sowing on the composition of the grain yield of plants

1-sowing date

№	planting densityy	Sowing timee	Number of plants before harvest	The height of the main stem	Place of the first beans, so	On average 1 bush			Weight of 1000 grains, g.
						Number of beans	Quantity grainn	Grain weight, g.	
1	850000	20.10.11	831000	40,3	11,5	37,1	43	2,9	75
2	1100 000	20.10.11	1085000	44,2	13,3	41,4	53	3,0	80
3	1300000	20.10.11	1235000	43,1	12,9	35,3	41	3,0	80
4	850000	20.10.11	839000	41,6	10,9	39,2	47	2,8	77
5	1100000	20.10.11	1075000	43,3	13,1	43,1	50	3,1	80
6	1300000	20.10.11	1253000	45,2	14,1	34,4	42	3,1	80

Influence of varieties of winter lentils on the density of plantings and the timing of sowing on the composition of the grain yield of plants

2-sowing date

№	planting densityy	Sowing timee	Number of plants before harvest	The height of the main stem	Place of the first beans, so	On average 1 bush			Weight of 1000 grains, g.
						Number of beans	Quantity grainn	Grain weight, g.	
1	850000	5.11.11	732000	39,3	9,4	36,1	40	2,8	75
2	1100 000	5.11.11	1065000	44,1	13,1	39,3	45	3,1	79
3	1300000	5.11.11	1269000	42,7	14,6	35,2	39	3,0	80
4	850000	5.11.11	817000	41,2	10,3	36,3	40	2,7	75
5	1100000	5.11.11	1071000	44,8	11,7	40,9	44	2,9	80
6	1300000	5.11.11	1229000	45,9	13,9	35,1	39	2,9	80

Productivity of winter lentils, kg / ha (1 sowing period)

Table 2.

Variants	Repetition				Average yield
	I	II	III	IV	
Sibron 850000	15.2	15.7	16.1	16,1	15,7
Sibron 1100 000	19.6	19.3	18.8	18,9	19,1
Sibron 1300 000	16.2	16.3	16.9	15,8	16,1
Darvon 850000	17.2	16.8	16.2	16,3	16,6
Darvon 1100 000	19.2	20.5	20.6	20,3	20,3
Darvon 1300 000	17.4	17.1	17.5	17,5	17,1

Productivity of winter lentils, kg / ha (2 sowing period)

Variants	Repetition				Average yield
	I	II	III	IV	
Sibron 850000	15.1	14.3	14.1	15,2	14,7
Sibron 1100 000	16.2	16.4	16.9	16,9	16,3
Sibron 1300 000	15.8	16.3	15.6	15,9	15,9
Darvon 850000	15.1	15.4	15.7	16,0	15,9
Darvon 1100 000	17.7	17.4	17.1	16,7	17,2
Darvon 1300 000	16.2	16.1	16.9	15,9	16,3

Consolidated suggestions and recommendations. As the development of the farming movement in our country, as a result of ongoing reforms in agriculture, ensuring the implementation of the decree of the President of the country to replenish the domestic market, paying attention to growing non-traditional agricultural crops like winter lentils, growing imported winter lentil seeds since 2000 and actions taken on the basis of the project on the development of scientifically grounded agricultural technology for the corresponding varieties Darvon and Sibron, winter lentils are relevant and meet the requirements of today.

In our opinion, taking into account the development of lentil cultivation in our country, a change in the attitude towards this culture will improve the material and

technical base of the industry, maximize the specialization of the industry, and improve the quality of scientific research.

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ACTUAL PROBLEMS OF NATURAL SCIENCES

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SALVIA OFFICINALIS L. METHODS OF GENERATIC REPRODUCTION OF PLANTS

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Annotasiya. O'zbekiston farmasevtika sanoatini dorivor o'simliklar xom ashyosiga bo'lgan talabi kun sayin ortib bormoqda. Bunday ob'ektlarga dorivor mavrak, dorivor tirnokgul, dorivor moychechak, namatak, valeriana, do'lana, zirk va boshqalar kiradi. Bular orasida dorivor mavrak (Salvia officinalis L.) farmasevtika, parf'yumeriya va medisina sanotida o'zining keng qamrovda ishlatilishi bilan alohida ajralib turadi.

Shu maqsadda, ilmiy izlanishlarimizda biz dorivor mavrak (Salvia officinalis L.) o'simligini ilmiy ob'ekt sifatida o'rganishni maqsad qilib oldik. Ushbu maqolada dorivor mavrak o'simligini ko'paytirish usullari bilan tanishib chiqishingiz mumkun.

Kalit so'zlar: dorivor mavrak, GOST, sifat, unuvchanlik, urug', laboratoriya, petri likobchasi, sug'orish, ekish muddati.

Аннотация. Спрос фармацевтической промышленности Узбекистана в сырье для лекарственных растений растет день ото дня. К таким объектам относятся лечебный маврак, лечебный лак для ногтей, лекарственная ромашка, наматак, валериана, боярышник, барбарис и другие. Среди них лекарственный шалфей (Salvia

officinalis L.) отличается широким использованием в фармацевтической, парфюмерной и медицинской промышленности.

С этой целью в наших научных исследованиях мы стремились изучить лекарственное растение шалфей (Salvia officinalis L.) как научный объект. В этой статье вы можете познакомиться со способами размножения лекарственного растения маврак.

Ключевые слова: лекарственный маврак, ГОСТ, качество, забывчивость, семена, лаборатория, чашка Петри, орошение, срок посева.

Annotation. The demand of the pharmaceutical industry in Uzbekistan for raw materials for medicinal plants is growing day by day. Such objects include medicinal salvia, medicinal nail polish, medicinal chamomile, namatak, valerian, hawthorn, barberry and others. Among them, the Salvia officinalis L. is widely used in the pharmaceutical, perfumery and medical industries.

To this end, in our scientific research, we aimed to study the medicinal plant Salvia officinalis L. as a scientific object. In this article, you can get acquainted with the methods of propagation of the medicinal plant *Salvia officinalis L.*

Key words: *Salvia officinalis L.*, GOST, quality, forgetfulness, seeds, laboratory, Petri dish, irrigation, sowing time.

Introduction. The cultivation of this plant, in turn, to some extent meets the demand of the pharmaceutical industry in Uzbekistan for this plant raw material. Overcoming these problems is directly related to the development of technology for the cultivation of medicinal plants and the preparation of raw materials.

Salvia officinalis L. is distinguished by its widespread use in the pharmaceutical, perfumery and medical industries.

Analysis of the literature on the subject. Salvia officinalis L. is not found naturally in Uzbekistan (I. Maltsev, 1994), it is cultivated as an ornamental and medicinal plant. It is also used in the CIS countries as a medicinal plant in Ukraine, Moldova, Russia and other countries. q. grown.

According to the literature, the following GOST requirements should be followed in the preparation of mavrak seeds. In this case, the seed must meet the requirements of class I, the purity of the seed should not be less than 94-96% and germination of 85-93%.

Research methodology. Experiments have shown that the seeds of Salvia officinalis L. have high quality indicators. In determining the quality indicators of plant seeds, the collected seeds were sorted and divided into clean and empty seeds. Its purity relative to the general condition was determined by proportion. At the same time, the purity was recorded at 94-96%.

Experiments have shown that medicinal mavrak seeds have high fertility rates. In order to determine the seed germination, seed samples collected from the model plant were tested in the laboratory and in the field by sowing 100 pieces on the basis of 4 repetitions. In determining the germination of seeds, germinated seeds were taken into account and determined as a percentage. In our experiment, the fertility of the seeds collected from the model plants in variants 1 and 2 was 70-75%, while in the plants of variant 4, these values were recorded around 70-80%.

Analysis and results. It is known that seed germination is a key indicator in the establishment of plant crop areas. To this end, our scientific research has studied the methods of propagation from plant seeds.

Salvia officinalis L. Fruits and seeds

The fruit of Salvia officinalis L. consists of 4 nuts. The seeds are 2.2–3 mm long, with a flat surface, dark brown or brownish-black. The weight of 1000 seeds is 7-8 g.

In order to study the germination of seeds in the laboratory, the experiments were carried out and tested on the basis of 4 replications, in which 100 seeds were sown by placing filter paper on a Petri dish. In the seeds sown on a Petri dish for testing, germination was observed after 16–20 days and lasted for 35–40 days.

Experiments have shown that the germination of seeds of Salvia officinalis L. is satisfactory and averages 80-85% under laboratory conditions (18-20 ºC).

Thus, the germination of plant seeds under laboratory conditions was high, and these figures were recorded in all variants in the range of 80-85%.

In order to determine the optimal sowing time of plant seeds in field conditions, experiments were conducted during the sowing seasons (spring and autumn), taking into account seed germination in laboratory conditions. The seeds were sown and tested in March-April and November-December of the year to obtain accurate data.

Dependence of seed germination on sowing time

Sowing time	Sowing time, (months)	Date of sowing the seeds	Germination, %
Spring	March	1.03.20 y	85
		15. 03.20 y	83
	April	01. 04.20 y	80
		15. 04.20 y	73
Autumn	October	01.10.20 y	70
		15.10.20 y	73
	November	01.11.20 y	73
		15.11.20 y	81

Note: The germination of seeds sown in late autumn is observed in early spring.

Experiments have shown that in all sown variants, the germination of sown seeds was observed around 75-80%. However, the germination of seeds sown in early spring in the

first days of March was relatively high, and these values were recorded at a slightly higher level of fertility observed in laboratory conditions 80-85% . When propagating from seed, medicinal salvia plant early spring seeds were sown at a depth of 2–3 cm, making row spacing 60–70 cm in late March when the soil temperature is 12–15 0S. Consumption of 8 kg of seeds from class 1 seeds per hectare gives an effective result.

The sown seeds germinated in 15-22 days and the seeds were observed to form leaves. The main root was 3.5–4 mm long, and the total length of the grass was noted to be around 1–1.5 cm. On 10–12 days of observations, the length of grass seed pods was 2–4 mm. It has been observed that since the grass period they have been covered with hairs. The main arrow root of the grass is 1-2 cm, and the widest first-order roots are 0.2-0.4 mm. At the same time it was observed that the total length of the plant reached 1.0-1.2 cm. When the appearance of the first true leaves in them is observed on 12-15 days of development, the upper part of the leaf blade is covered with fine hairs. Chin leaf shape is elongated, 0.5 mm wide and 0.8 mm long. At this time it was found that the main root reached 4.5–5 cm, the widest roots reached 0.8–1 cm.

The grasses grew slowly and their total length was 3-3.8 cm. In the spring, as a result of the harvest, foliage is observed in the areas planted with medicinal herbs. To eliminate stumps, the plant spaces were softened, mulched with wood chips and rotten manure, and at the same time uniformed, leaving 2-3 plants every 20 cm.

Observations showed that in the first growing year, the length of the main stem of the plant reached 40-48 cm, and the number of leaves reached 20-26. The inflorescence of the lower part of the main stem was 3-5 cm and the number of leaves shed from this place was on average 4-6. In the first growing year, the number of first-order branches reached 8-10 and 25-27 cm in length, the number of leaves reached 15-18. The leaf blade was 8-10 cm long, 2-2.8 cm wide, and 5-6.1 cm long.

Thus, scientific studies have shown that the medicinal mavrak plant grows sufficiently in irrigated soils with high fertility, moderate mechanical content. Sowing the seeds of the plant in autumn and early spring gives effective results. No generative period was recorded in the first year of development when propagated from seed. It was noted that the preservation of grass seedlings grown at the end of the growing season is high 70-80%. It is now irrigated depending on the soil moisture and the surface layer of the soil is being softened and cleared of weeds.

Depth of sowing seeds. When propagating each plant from seed, it is important to determine their planting depth.

With this in mind, an experiment was conducted based on several options in order to determine the optimal planting depth of the seeds of the Salvia officinalis L. plant.

It was also found that when the seeds were sown on the surface, they germinated less, and when they were planted relatively deep, the germination rate decreased. This is due to the decrease in moisture levels due to direct sunlight on the sown seeds and the lack of sufficient conditions for the seeds to germinate in the soil.

Thus, the germination of plant seeds depends on the sowing depth, and these indicators were recorded in the variants around 70-85%. In field conditions, the optimal sowing depth of plant seeds is 2-3 cm.

Conclusions and Recommendations.

1. The germination of seeds of Salvia officinalis L. The soil conditions are directly related to its mechanical composition and planting depth. In particular, germination of seeds in soils with heavy mechanical composition and poor soil composition was relatively low. It was noted that seed germination is much higher in typical gray soils rich in mechanical composition and rich in humus.

2. The optimal sowing depth of Salvia officinalis L. plant seeds was noted to be 2-2,5 cm.

3. The germination rate of Salvia officinalis L. plant seeds was recorded to be around 80-85% (average 83%).

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SENNA ACUTIFOLIA DEL. METHODS OF GENERATIC REPRODUCTION OF PLANTS

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Annonatsiya. O‘zbekiston farmatsevtika sanoatini dorivor o‘simliklar xom ashyosiga bo‘lgan talabi kun sayin ortib bormoqda. Bunday ob’yektlarga dorivor mavrak, dorivor tirnokgul, dorivor moychechak, namatak, valeriana, do‘lana, o’tkir bargli sano, zirk va boshqalar kiradi. Bular orasida dorivor sano *(Senna akutifolia Del.)* farmatsevtika, parfyumeriya va meditsina sanotida o‘zining keng qamrovda
ishlatilishi bilan alohida ajralib turadi.

Shu maqsadda, ilmiy izlanishlarimizda biz o’tkir bargli sano *(Senna akutifolia Del.)* o‘simligini ilmiy obyekt sifatida o‘rganishni maqsad qilib oldik. Ushbu maqolada o’tkir bargli sano o‘simligini ko‘paytirish usullari bilan tanishib chiqishingiz mumkin.

Аннотация. Спрос фармацевтической промошленности Узбекистана в соре для лекарственнох растений растет ден ото дня. К таким обектам относятся лечебной Сенна остролистная, лечебной лак для ногтей, лекарственная ромашка, наматак, валериана, боярошник, барбарис и другие. Среди них лекарственной Сенна остролистная (*Senna acutifolia Del*) отличается широким исползованием в фармацевтической, парфюмерной и медицинской промошленности.

С этой целю в наших научнох исследованиях мостремилис изучит лекарственное растение Сенна остролистная (*Senna acutifolia Del*) как научной обьект. В этой стате во можете познакомится со способами размножения лекарственного растения Сенна остролистная

Annotation. The demand of the pharmaceutical industry in Uzbekistan for raw materials for medicinal plants is growing day by day. Such objects include *Senna acutifolia Del*., medicinal nail polish, medicinal chamomile, namatak, valerian, hawthorn, barberry and others. Among them, the *Senna acutifolia Del*. is widely used in the pharmaceutical, perfumery and medical industries.

To this end, in our scientific research, we aimed to study the medicinal plant *Senna acutifolia Del*. as a scientific object. In this article, you can get acquainted with the methods of propagation of the medicinal plant *Senna acutifolia Del*.

Kalit so‘zlar: o’tkir bargli sano, GOST, sifat, unuvchanlik, urug‘, laboratoriya, petri likobchasi, sug‘orish, ekish muddati.

Ключевое слова: Сенна остролистная, ГОСТ, качество, забовчивост, семена, лаборатория, чашка Петри, орошение, срок посева.

Key words: *Senna acutifolia Del*., GOST, quality, forgetfulness, seeds, laboratory, Petri dish, irrigation, sowing time.

Introduction. The cultivation of this plant, in turn, to some extent meets the demand of the pharmaceutical industry in Uzbekistan for this plant raw material. Overcoming these problems is directly related to the development of technology for the cultivation of medicinal plants and the preparation of raw materials.

Senna acutifolia Del. is distinguished by its widespread use in the pharmaceutical, perfumery and medical industries.

Analysis of the literature on the subject. *Senna acutifolia Del*. is not found naturally in Uzbekistan (I. Maltsev, 1994), it is cultivated as an ornamental and medicinal plant. It is also used in the CIS countries as a medicinal plant in Ukraine, Moldova, Russia and other countries. q. grown.

According to the literature, the following GOST requirements should be followed in the preparation of senna ds. In this case, the seed must meet the requirements of class I, the purity of the seed should not be less than 94-96% and germination of 85-93%.

Plant distribution. The plant is native to Egypt (Nile
the middle reaches of the river) and Sudan. Of these countries the climate is hot, on the coldest days of the year the air temperature rarely drops below 5-10 ° C. Cultivated in Uzbekistan as a medicinal plant. The best place to grow Sano is in Denau district of Surkhandarya region.

Agrotechnical measures. It grows from the seeds of the Sano plant. 1000 seeds weigh 25-35 g. The germination capacity is 80-95%, but over time the germination rate decreases. Poorly ripened seeds quickly lose their germination.

The temperature of the air should be 18-20 ° C for the seeds to germinate. Seeds germinate in 6-20 days after sowing. Sprouted plants grow and develop very slowly. Growing occurs 2.5-3 months after germination. The vegetation period lasts until the first frost (-1 ° C). Beijing is so cold-blooded that the leaves and seeds lose their quality.

Sano grows well in light to moderately fertile soils. It is not recommended to plant in soils with high humidity and poor aeration. Because the root system does not develop well and is susceptible to fungal diseases. Therefore, the landfill system should be deep (1.2-1.5 m) and the groundwater should be at least 1.2-1.8 m deep. The Sanaa plant is soaked in warm water (30 ° C) for 6-8 hours before planting. Ivigan seeds are suitable for sowing. The unripe seeds are mixed with sand and the skin is damaged for 30 minutes. To do this, the seeds mixed with sand are spread on a flat board or floor and rubbed with a cloth or tarpaulin. It is then boiled in hot water (30 ° C) for 8-10 hours, during which time the hot water is changed twice. When sowing, the seeds should be placed in 1G3 of the bag.

After germination, the seeds are left in water for 2-3 days. Sowing begins as soon as the seeds begin to germinate. In our conditions, the sowing period is 10-15 days from
the second half of April, when the soil is well drained. The latest period is 5-10 days in May. Depending on the size of the field, it is planted using ash power and seeders. The seeds are dried before sowing. If the seeds are sown in a seed drill, 8 kg per hectare will be used. Seeds are sown at a depth of 2-3 cm. Seed germination is 56- 60%. Row spacing is 60-70 cm on irrigated lands and 50-60 cm on dry lands. It is watered immediately after planting.

Sprouting of seedlings begins in 5–6 days. If germination is delayed, re-irrigation is required. After the second leaf emerges, the sprouted grass is separated into 20-25 pieces in each nest at 20-25 cm. In the second unit, after 10-15 days, the plant is left at 40-50 cm. Simultaneously with the single do, the row spacing is softened. After each action, which leads to compaction of the soil, the row spacing is loosened to a depth of 8-12 cm. In irrigated areas, cultivate at least 5 times.

Twice fed with mineral fertilizers. In the first feeding - at the beginning of branching, 30 kg of nitrogen and 20 kg of phosphorus fertilizers are applied per hectare. In the second feeding, at the beginning of flowering, 20 kg of nitrogen and 30 kg of phosphorus fertilizers are applied per hectare. It is recommended to irrigate 7-8 times to get the raw material from the

leaves of the sano plant, and 5-6 times to get the seeds.

The leaves are sown in the fields where raw materials are made from the leaves of the Sana plant. Chekanka is carried out every 15-20 days and does not allow the plant to bloom. Each coin should not exceed 1-2 days.

Preparation of raw materials and its quality. During the flowering and fruiting phase of the plant, the picked, dried and crushed leaves should have separate leaves and bands, and those that are whole or partially crushed should have flowers, flowers and immature fruits. 1-3 cm, width 0.4-1.2 cm. Fruit pods, smooth, thick, partially curved, 3–5 cm long, 1.5–2 cm wide. The color of the leaves is gray-green on both sides or yellow-green on the surface; fruit - greenish-brown; buds and flowers – yellow, light, with a bitter taste.

Crushed raw materials are passed through sieve holes with a diameter of 7 mm. Color grey-green. The raw material is packed in bags up to 40 kg, and in hemp bags up to 15 kg. Shelf life is 3 years.

Medicinal uses and chemical composition. Sano drugs are used as an exfoliator. The resins in the leaves are soluble in alcohol and boiling water, and these resins have the property of irritating the intestines. Therefore, the prepared tincture is cooled and the resin is filtered. The leaves contain anthraglycosides (up to 6%), the fruits contain anthracene products (sennoside A, rein, aloe-emodin, etc.).

Recommendations. The most famous plant in the world is the Alexander Leaf. It can be grown on large-scale plantations in fertile soils.

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INTRASPECIFIC BIODIVERSITY OF *G.HIRSUTUM* L., *G.BARBADENSE* L. AND HAIRINESS OF SEEDS OF INITIAL MATERIALS IN *G.DARWINII* WATT SPECIES AND EPIDERMAL SURFACE ANALISYS PLANTS.

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Annotasiya: Tabiatda tarqalgan o'simliklarning yovvoyi, ruderal va madaniy tropik xilma-xilliklarida belgi-xususiyatlarni boshqarish, ayniqsa, irsiy axborotga bog'liq. O'simlikni vegetasiya davrida sodir bo'ladigan o'zgaruvchanlik esa tashqi muhit omillariga bo'ysinadi. Shundan kelib chiqqan holda, inson tomonidan amalga oshirilgan sun'iy tanlash evolyusion jarayonida progressga olib kelgan, deb faraz qilinadi. G'o'zani tola chiqimi o'simlikning asosiy qimmatli xo'jalik belgilaridan biri hisoblanadi.

Kalit so'zlar: G'o'za, ko'sak, urug', tola indeksi, shakl, tola chiqimi, o'zgaruvchanlik, irsiyat, chatishtirish, avlod, ustun, duragay, geterozis, rekombinant.

Аннотация: Управление характером диких, рудеральных и культурных тропических разнообразных растений, распространенных в природе, особенно зависит от генетической информации. Изменчивость, возникающая в течение вегетационного периода растения, зависит от внешних факторов окружающей среды. Следовательно, предполагается, что искусственный отбор человеком привел к прогрессу в эволюционном процессе. Расход хлопкового волокна - одна из основных ценных экономических характеристик завода.

Ключевые слова: хлопок, кокон, семя, индекс волокна, форма, выход волокна,изменчивость, наследственность, скрещивание, поколение, колонка, гибрид, гетерозис, рекомбинантный.

Abstract: The character management of wild, ruderal and cultivated tropical diverse plants found in nature is particularly dependent on genetic information. The variability that occurs during the growing season of a plant depends on external environmental factors. Therefore, it is assumed that artificial selection by humans has led to progress in the evolutionary process. The consumption of cotton fiber is one of the main valuable economic characteristics of the plant.

Key words: cotton, cocoon, seed, fiber index, shape, fiber yield, variability, heredity, crossing, generation, column, hybrid, heterosis, recombinant.

Introduction. It is known that the fiber color of the cotton can be white, tan, light tan, reddish brown, golden, green, light pink, bluish-green, dark brown. Several scientists have conducted research on this character [8; 11; 12]. While one group of scientists reported that the fiber color marker is inherited monogenically, others noted that it is inherited polygenically.

Literature review. In ontogenesis, differentiation of germ and outer epidermal tissue

has been studied as a fiber-forming layer [1]. Using the terminology adopted in our study, we took a detailed approach to the formation of cotton cell populations, changes in their ratios, and the stabilization of the ontogenesis of the germ and seed. [11] There are three types of cell populations: statistical, growing, and regenerating cell populations. Changes in population size over time can be seen as the most common manifestation of cell population kinetics.

Due to the differentiation of the outer epidermal cells, it is of great importance to determine the number of hairs in the germ and seed, the moving of hair cells in the germ, their topography, i.e. the direction of location and the degree of regionalization. The study of these issues is important in solving problems in developmental biology, such as cytological, genetic, physiological and biochemical mechanisms of differentiation, growth, life cycles of cell populations, and more.

In practice, this work is necessary to determine the parameters that indicate the amount of fiber for the seed and to determine the amount of fiber and the possibility of increasing its yield.

Determination of the number of differentiated cell populations of the germ epidermis, i.e., the number of hair cells and hair-forming cell populations; the change in the number of these populations in the ontogenesis of the seed are noteworthy. To address these issues, it is first necessary to determine the presence of changes of germ forming cell populations and their ratios in the ontogenesis of seed of cotton species and varietal diversity.

A few data have been given in the literature on the number of hairs in one seed. B.A.Krakhmalev, M. B. Sultanova [5] noted in their work that *G.hirsutum* L. species varieties have hairs in the seeds between 7,8 and 14,7 thous.

According to D. V. Ter-Avanesyan [8], in the seeds of *G.hirsutum* L. there are 7.8-18.0 thous. fibers, while in the varieties of *G.barbadense* L. 11,0-17,0 thous.fibers.

Research methodology. N. A. Vlasova [3] studied changes in cytoadnuclear relations of mitotic active and differentiated cells of the germ epidermis and identified that total number of epidermal cell of hairs close to regenerating population was 21,2% in “108-F” variety of cotton during the flowering stage . In the following days, the percentage of fibers decreased by 17.5%, because these days due to the increase in mitotic activity of cells, their total number increased by a large proportion relative to the number of fibers. 3-4 days after flowering, the epidermal cells do not break down into fibers, so they are almost of the same length in each part of the germ. By the 5^{th} day, 0.25% hairs appear of the total number of epidermal cells. On days 6–7–8, the proportion of hairs is 1.5%, 2.8%, and 4.0%, respectively.

Anaysis and results. The decrease in the number of hairs occurs due to the division and rapid growth of epidermal cells. Then, as a result of differentiation of epidermal cells and their gradual dehydration and pigmentation, the number of hairs per 1 mm^2 may increase slightly, for example, it can be observed in the 50-day period of cotton variety "Kelajak". Epidermal cells are often disproportionate, curved, and elongated, with 6–7 elongated cells per hair follicle.

In the wild subspecies *mexicanum* belonging to the genus *G. hirsutum* L., the number of hairs per 1 mm^2 is twice less, which is explained by the smaller size of their seeds, and there are only 3144 hairs per seed. The total number of hairs per seed in the cultivar "Kelajak" was 8638, respectively, and the share of hairs in the total number of epidermal

cells was 7.8%. Wild *G. darwinii Watt* species has the lowest number of hairs per 1 mm^2, with only 2760 hairs per seed (Table 3).

In the age dynamics, the number of epidermal cells of a growing population of seeds increases until cell division stops by metastasis, the volume of epidermal cells belonging to the statistical population increases rapidly due to cell growth by elongation and decreases in 1 mm^2 as seed continues to grow rapidly. Therefore, as the age of the seed increases, the number of hairs in the epidermal cells decreases by one when intensive cell growth is observed with elongation. There is a law that the smaller the proportion of hairs from the total number of epidermal cells, the greater the number of epidermal cells in the hair.

We hypothesized that the number of epidermal cells corresponding to a single fiber account would determine the degree of seed hairiness. However, this is not true because the number of cells in a single fiber is determined by the intensity of division of epidermal cells in the early stages of seed development and the elongated growth after division. The epidermal cells on the surface of the seed are elongated, with a minimum cell diameter of 7–31 μm and a maximum of 19.9–61.05 μm in *G. hirsutum* L.intraspecific varieties of cotton. In particular, the smallest diameter of epidermal cells in the cultivar Kelajak was 7.0 μm, while the largest share was recorded in subspecies *mexicanum var.nervosum* (Yucatan) of *G. hirsutum* L. with 61.05 μm indication. In *G. barbadense* L. intraspecific varieties, the minimum cell diameter is 7.0–29.7 μm and the maximum is in the range of 18.9–75.9 μm. In Surkhan-9 cultivar, the smallest diameter of epidermal cells was found to be 7.0 μm and the largest share in the form semi-wild subspecies *ruderale f.parnat* (tan fiber) in the range of 75.9 μm. In the wild *G. darwinii* Watt species, the smallest unit of epidermal cell diameter was found to be 23.1 μm, while the largest unit was found to be 59.4 μm (see Table 5.1).

Thus, the analysis of the results obtained revealed differences in the quantitative indicators specific to each sample, the proportion of hairs on the seed surface depends not only on seed size, number and size of epidermal cells, but also on the number of cells surrounding each fiber.

Based on the above, it can be concluded that further research is needed, involving many samples and varieties specimens. The nature and degree of hairiness of immature seeds were studied, epidermal cells and fibers (hairs) of and their parameters (length, middle part and base diameter) of *G. hirsutum* L. and *G. barbadense* L. intraspecific varieties and *G. darwinii* Watt species were determined.

Table-5.1

Epidermal cells and number of hairs of intraspecific varieties of *G.hirsutum* L. ва *G.barbadense* L. species of cotton and *G. darwinii* Watt species of cotton in 1 mm² surface and seeds

Initial sources	Length and width of seed, mm	Total surface of seed, mm²	Number of epidermal cells		Number of hairs		Proportion of number of epidermal cells to one hair	Percentage of total number of epidermal cells relative to number of hairs	Diameter of epidermal cells, μm	
			мм²да	уруғда	мм²да	уруғда			The smallest	The largest
G.hirsutum L. subsp.*mexicanum* var.*nervosum* (Yucatan)	9,0 x 5,0	90,27	261,4	23627,2	34,8	3144,1	7,0	13,3	31,35	61,05
*G.hirsutum*L.*ssp.punctatum*	9.3 x 4,9	90.3	876,3	79129,9	70,9	6402,3	12,4	8,1	12,4	19,9
*G.hirsutum*L.*ssp.paniculatum*	8,5x1,7	80,1	885,4	70920,5	74,5	5967,5	11,9	8,4	14,9	23,0
Kelajak	12,8 x 6,6	166,1	682,2	113324,0	52,0	8638,2	13,1	7,8	7,0	21,7
G.barbadense L. subsp.*ruderale ƒ.parnat*	11,5x6,0	136,6	461,1	63524,4	18,9	2540,6	13,0	5,4	29,7	75,9
*G.barbadense*L.*Surkhan-9*	11,3x7,1	164,6	859,6	14151,3	45,1	7422,9	19,1	7,2	7,0	18,9
G. darwinii Watt	11,0 x 6,0	131,9	275,9	36380,4	20,9	2760,2	13,0	13,1	23,1	59,4

A comparative comparison of the data showed some differences that belonged to each subtype. Thus, the smallest number of hairs in the large-celled epidermis and in 1 mm^2, as well as on the entire surface of the seed was observed in the ancient wild forms *paniculatum* and *punctatum* subspecies. The fibers of this representative are much shorter and thicker, which is especially noticeable in the diameter of the base. There are many cells on the epidermal surface, the hairs are surrounded by only 7-8 cells, while in the *paniculatum* and *punctatum* subspecies the figure was -11.9 and 12.4, respectively. The seeds of subspecies *paniculatum* have smaller cells, thinner and longer fibers than other specimens, and there are largest number of hairs per mm^2 and the entire seed surface.

It should be noted that the wild forms of subspecies *punctatum* and *paniculatum* were found to be close to each other in all respects relative to cultivated varieties. *Punctatum* and *paniculatum* subspecies were found to have twice the number of fibers per $1mm^2$ compared to the studied varieties, due to small size of seeds, and only 6402.3 and 5967.5 hairs per seed, respectively.

In terms of the number of hairs per 1 mm^2 in the semi-wild form *ruderale ƒ.parnat* (tan colored fiber), the lowest indication is 18.9, and 2540.6 hairs per seed. In the studied Surkhan-9 variety of *G. barbadense* L., the number of hairs per 1 mm2 was 45.1, and the number of hairs on the seed surface was 7422.9. The proportion of fiber cells in the total number of epidermal cells was lower than in *G. hirsutum* L. species varieties, with 97.2% in Surkhan-9 variety.

The data obtained revealed quantitative differences in the traits being analyzed in the studied representatives. Basically, the fiber index and yield are determined by the amount of fiber on the seed surface, and according to our data, the epidermis has a positive relationship with the number and size of cells. Also, these parameters, along with the hardness of the seed coat, the parameters of the hairs - length, middle part and diameter of the base - can be important in determining the causes of fiber deterioration (contamination) during seed cleaning (ginning).

Conclusion. Consequently, the results obtained showed that the differences in the quantitative indicators of the traits belonging to each representative under analysis, the proportion of hairs on the seed surface depends not only on seed size, amount and size of epidermal cells, but also on the number of cells surrounding each fiber.

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BIOECOLOGY AND CULTIVATION TECHNOLOGY OF CALENDULA (CALENDULA OFFICINALIS).

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Annotatsiya: Ushbu maqolada Andijon viloyatining och bo‘z tuproqlarida kalendula officinalisning agrotexnologiyasi, bioekologiyasi, dorivor xususiyatlari va yetishtirish va xalq tabobatida qo‘llanilishi haqida so‘z boradi.

Kalit so'zlar: tirnoq bioekologiyasi, tibbiyot, agrotexnika, urug'lar, o'g'itlar, dorivor xususiyatlari, xalq tabobati, ekologik toza, vanna, primochka.

Аннотация: В данной статье рассматриваются агротехника, биоэкология, лечебные свойства и возделывание календулы лекарственной на светло-сероземных почвах Андижанской области и ее использование в народной медицине.

Ключевые слова: биоэкология ногтей, медицина, агротехника, семена, удобрения, лечебные свойства, народная медицина, экологически чистота, баня, примочка.

Abstract: This article discusses the agrotechnology, bioecology, medicinal properties and cultivation of calendula officinalis in the light gray soils of Andijan region and its use in folk medicine.

Keywords: nail bioecology, medicine, agrotechnics, seeds, fertilizers, medicinal properties, folk medicine, ecologically clean, bath, primochka.

Introduction. A lot of scientific and practical work is being done in the field of development of local medicinal plants in our country. At present, the demand of the pharmaceutical industry for plant raw materials is being met as much as possible. It should be noted that in order to treat and prevent human diseases in the country, various drugs are prepared or isolated from them are pure medicinal substances. By delivering environmentally friendly, clean medicines to our people, it will help to restore people's health, prolong life, as well as a healthy lifestyle.

In recent years, the country has been carrying out consistent reforms in the field of protection of medicinal plants, rational use of natural resources, the establishment and processing of plantations for the cultivation of medicinal plants.

Literature review. Of the more than 4,300 species of plants belonging to the local flora, 750 species are medicinal, of which 112 species are registered for use in scientific medicine, of which 70 species are actively used in the pharmaceutical industry.

In 2019, $ 48 million worth of processed medicinal plant products were exported.

At the same time, the analysis shows the need to create a value chain through the protection of medicinal plants, the organization of their plantations, processing.

Research Methodology. In order to create a favorable environment for the further development of cultivation and processing of medicinal plants, increase the export potential of the industry, as well as the integration of educational, scientific and production processes: 'simlik (calendula officinalis) - Amaranthaceae. An annual herbaceous plant, 30-50 (sometimes 60) cm tall. Root-branched arrow root. Stems hard, erect, branched from the base, angular, the upper part is covered with glandular hairs. The leaves are simple, banded, elongated, inverted ovate, sessile, arranged at the base. The leaves on the upper part of the stem are bandless, ovoid or lanceolate. The flowers are in a basket. Mevasi-pistachio. It ripens from July. It blooms from June to late autumn. Before sowing the seeds in the early spring, level the soil, remove weeds, sow the seeds to a depth of 2-3 cm when the soil temperature is 20-22oC and consume 10-12 kg of seeds per hectare.

Seeds are sown with row spacing at 60 cm intervals, and the seeds germinate after 7-8 days. When it sprouts, the stalks are on fireand leaves 1-2 plants in each nest at a distance of 15-20 cm between rows. The product contains 7.6-7.8 mg% carotene, 0.02-0.4% ether oil, 0.33-0.88% flavanoids, 3.44% resins, up to 4% mucus, 10.4-11.2% additives, up to 19% bitter substance-calendula, 6.84% applepentadecyl and small amounts of salicylic acid, triterpene diols and alkaloids were detected

a) Nail flower	b) Nail flower seeds
	

Useful properties of nail polish in medicine. In folk medicine, tinctures made from the flower baskets of the plant are used to treat diseases of the liver, spleen, stomach and intestines. When a person burns his body, the tincture is applied to various wounds - abscesses, scabs, eye sores, rashes, a bath, primochka, compresses.

Nail preparations are widely used in scientific medicine. Various tinctures, tablets, emulsions made from it are used in the treatment of a number of diseases. The product is part of the drug KN, which is used in some cancers.

Analysis and results. Prior to planting, the soil was plowed to a depth of 25-30 cm, with 20-30 tons of local fertilizer per hectare and 70% of the annual norm of phosphorus fertilizer applied before planting in the fall. In the early spring, before planting, the soil was leveled, weeded and planted to a depth of 2-3 cm. After germination, 30 kg of N and P fertilizers per hectare were applied. The second fertilization process was 40 kg N and 30 kg K fertilizer per hectare during the growing season. The last feeding was completed by applying 40 kg N and 30 kg P per hectare when the plant was in full bloom. When the nails are planted in the fall, the grass appears in April. Each bush has 3-4 leaves. As the warm autumn lasts, some of the seeds sprout and spend the winter in the form of balls. They often do not catch a cold. Winter seedlings begin to bloom in 35-40 days, ie in early May.

Harvesting and drying of cloves. Harvesting of the nail pollen begins as soon as it begins to bloom. The newly opened 1uls are first collected in the ashes. Due to the frequent opening of flower baskets, they are collected every 3 days and in the evening on the 4th day. Inflorescences collected from the plant should not be stored in baskets and collections for more than 3 hours to prevent overheating and deterioration of uiipg quality. Collected products in special dryers (SPK), x, ako (151 GG-400, 600) dryers up to 40-5 ° Cdried. The product of 4 lakomila kuritmlgam is stored in special paper bags of 20 kg without staining. The shelf life of the product in dry warehouses should not exceed zero.

Conclusions and Recommendations

1. In April, when the technology of growing clover in irrigated areas is planted on the basis of experiments, the grasses appear.
2. In the cultivation of the nail plant, when the warm autumn lasts, some of the seeds sprout and spend the winter in the form of leaves.
3. Clove plants are often not affected by cold. Winter seedlings begin to bloom in 35-40 days, ie in early May.

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FOREIGN LANGUAGE AMPLIFICATION IN UZBEKISTAN IN THE LATE XIX AND EARLY XX CENTURIES

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Annotasiya: Ushbu maqolada ma'rifatparvarlik g‘oyalari targ‘ibotchilarining xorijiy tillarni o‘rganishga qaratgan e'tibori bayon etiladi. Shuningdek, maqolada Avloniy, Fitrat, Cho‘lponning xorijiy tilni o‘rganish zaruriyati haqida fikr bildirilgan.

Kalit so‘zlar: ma'rifatparvarlar, jadid, targ‘ibot, xorijiy til, ta'lim, milliy ravnaq.

Аннотация: В этой статье уделяется внимание обучению иностранным языкам пропагандистов идей просветительства. А также приводятся высказывания Авлоний, Фитрат, Чулпана о необходимости изучения иностранных языков.

Ключевые слова: просветитель, джадид, пропаганда, иностранный язык, обучение, национальное процветание.

Annotation: This article focuses on the propagandistic ideas of enlightenment thinkers on learning foreign languages. Also in the article the view-points of Avloniy, Fitrat, Cho’lpon about the need to learn a foreign language are mentioned.

Key Words: educators, jadid, propagation, foreign language, education, national development.

Introduction. When we look at the development of the civilization of human life, they have always lived with the desire to know nature and society. It is appropriate to note that not only knowledge, but also the desire to change it on the basis of the acquired knowledge and experience – creates a basis for spiritual, educational, socio – economic development in the life of society. There are such a huge number of periods of history that revolutions of that time, or discoveries, are sealed in their own way. Our ancestors, who laid the foundation for such great changes and developments, were representatives of the school of intensive studies, which promoted the ideas of enlightenment at the end of the XIX and early XX centuries.

Literature analysis. There was no fundamental research on the topic of teaching foreign languages in Uzbekistan and the history of its development. Among the works written on this topic, the fact that the method of teaching foreign languages has a close relationship with other sciences is justified by scientists of various fields. The scientist who lived in this historical period, M.Behbudiy and A. Fitrat. The fact that such enlighteners as Fitrat should study the world experience first for national development is reflected in their works, calling on young people of that time to study and master foreign languages. Reading foreign languages is also widely learned in the works of the Chulpan and Ibrat.

Research methodology. Historical comparison and statistical research methods were used in the article on the basis of historicity, comparison, science and problem-chronological approach.

Analysis and results. During this period, the jadid school and its propagandist movement emerged as a result of the political, social, economic and spiritual situation prevailing in Turkestan. On the one hand, the Russian invasion, and on the other hand the oppression of local officials caused economic tension, educational poverty and national discord in the country. In this contradictory period, the pioneer, enlightener intellectuals, who sought ways to get the country out of the swamp of ignorance, were Mahmudkhu'ja Behbudiy, Chulpon, Fitrat, Munavvar Kari Abdurashidkhanov, Abdulla Avlani, Iskhokhon Ibrat and their other contemporaries. In this regard, the manifestations of the accelerated movement carried out multifaceted activities.

However, the aspect we are studying is that these intensive educators and the foreign languages in their works are focused on the need for learning. In his scientific works and articles, Iskhokhon Ibrat promoted the study of Western languages along with Eastern languages to his contemporaries. He also lived in the Central European cities, such as Istanbul, Sofia, Athens, Rome, except for the Eastern countries[1.8]. He came to India from Mecca through the Red Sea and the Indian Ocean. In 1892-1896 years he lived in Bombay and Calcutta, one of the largest port cities in India, where he perfectly studied the commonly used *arbailissoni*, namely four languages: Arabic, Persian, Indo-urdu and English.

At the beginning of the twentieth century, the colonial policy of the Tsarist government naturally increased the need for the Russian language among the local population. Russian-tuzem schools began to open not only in large cities of the country, but also in villages. In such schools, secular sciences, along with the native language, the Russian language is also taught. But for schoolchildren, independent learners of Russian and foreign languages, textbooks and manuals were missing.

Along with the Russian language, Iskhokhan Ibrat, who knew the ten Middle Eastern and Western languages quite well, extended his hand to help his people in this important matter. It contains six languages: Arabic, Persian, Hindi, Turkish, sartcha (Uzbek) and Russian, with the words "dictionary sitta al-sina (six-language dictionary)"[2.2]. created a dictionary book with a name. Iskhokhan collects valuable information for people's lives abroad, their culture, art, studied, scientific works. The lesson learned the French language in Arabia, the English language in India, at the same time the most ancient Phoenician, Jewish, Syrian, Greek inscriptions. Recognizing that he knew the languages of the peoples of the East and the West quite perfectly, his contemporaries Ibrahim Davron said: "..., Qazi Ta'ra (Iskhokhan), learned Turkish, Persian, Hindi, Russian, French, Armenian languages and wrote again Russian, and other letters " [2.9]

Iskhakhan studied cities of the European building method, getting acquainted with the innovations of cultural life and technology in them, understood well that in order to understand high technology, modern knowledge, it is necessary to know Western languages. But the life of the peoples who could not enjoy this cultural life, suffering under colonial oppression, would have tormented him. The writer had close relations with scholars and virtuous people abroad, no matter what religion or nationality they

belonged to. The Enlightenment, which understood that" each language was used along with the people of the journey", paid great attention to the study of foreign languages.

Jadids noted as a special task the issue of in –depth study of foreign languages, which is considered to be the most important condition for students not only to have a wide knowledge in the educational system, but also to actively communicate with their peers in foreign countries, to be aware of all the events, innovations and changes taking place in the world,

The fact that similar issues are also observed in the activities of other jadid manifestations indicates that the issues of national development and national statehood are continuing consistently even today. Hundreds of years ago, the views expressed by Mahmudkhodzha Behbudiy, one of our enlightened compatriots, were especially valuable, he said that for the progress of the nation it is necessary to know several languages. Behbudiy himself co-founded and edited the magazine "Oyna" (Mirror) in August 13, 1913 I-issue[3.150] "subject to two, not four languages" will come out with the article. The fact that the magazine was named in four languages during its activities indicates the extreme necessity of knowledge and possession of foreign languages. M.Behbudiy was a lesson in this matter personally, bringing up his children, who were one girl and three sons, to an adult level, who perfectly knew all four foreign languages (Arabic, Russian, Turkish, Persian).

Another jadid representative is Munavvar Kari Abdurashidkhanov, a pedagogue, journalist, public figure, who has been working for the sake of achieving national freedom of the Uzbek people. Munavvar Kari, who saw that the spirit of the people fell and the intelligentsia turned away from the spiritual decline due to the events taking place in the country at the beginning of the XX century, tries to check the social roots of these cases. This attempt was the impetus to come to the conclusion that it was necessary to fully reform the activities of his school and madrasah. He raised the issue of teaching Social Sciences along with religious lessons in madrasahs. The reason is that it is not possible to renew in politics without a change in consciousness, thinking, enlightenment. The reform of the Munavvar Kari school enlightenment, intending to create a literal National School did not return to the series. Positively solved the problem of teaching the Russian language at school, in 30 January in 1914 people's educational institutions of Sirdarya region wrote about this in his report [4.20] "there is only permission to teach the Russian language in Munavvar Kari. This is the only school where the Russian language is taught," he says. M.Abdurashidkhanov personally tried to improve his training programs. By 1914-1916, many schools in Turkistan worked on the basis of the program, which was established by Munavvar Kari. According to the program, study in schools is six years old, starting from the 4th grade of the schools "method jadid" is planned to teach the Russian language.

Munavvar Kari raised the issue of sending children abroad to study while staying as the founder of the" National School". Abdurahman Akbarov writes about this: it was at the end of 1916 year. At a meeting in Tashkent at the House of Kattakhoja Khujaev, Munavvar Kari said: "We are very eager to send and teach Uzbek educated children to Germany. Children are able to serve the nation great when they come to study and study knowledge." Such gatherings often passed and discussions continued.

Munavvar Kari in his activity is not enough with this, "edition of the educational" association also provides assistance to students. No matter what kind of craft the colonialists did not show, the writer and the coach managed to get the head of the local rich and serve the Enlightenment. Therefore, he was repeatedly detained.

Abdulhamid Chulpon, one of the famous representatives of the jadids, perfectly mastered the Arabic, Persian, Turkish languages in Andijan and Tashkent madrasahs after first reading in the old school. But the era's intensity was great, life was changing at a rapid pace. In order to function effectively in a new emerging social environment, it was not possible to be limited to traditional knowledge. Chulpan, who deeply felt the time, also entered the newly opened Russian-tuzem school in Andijan, where he perfectly studied several secular sciences, especially the Russian language[5.6]. Through the Russian language, he has widely opened the window of not only Russia, but also the whole European history and culture.

The jadids began, first of all, to bring out the literacy of the people and to increase their knowledge at the level of the world andosis. They demanded from the government to send young people to Germany, France, Turkey, Egypt and other countries for training. It is about Chulpan -"we will definitely be right to live in a row if we respond not with the Russian language, but even with the language and knowledge of the peoples of European culture" [6.20]. Such proposals were made by Chulpan "doctor Muhammaddiyor", M.Behbudy's" need is a nation", Hamza's" glory to the author gentlemen " is described in such articles.

Abdulla Avlani is a poet, playwright, journalist, notable representatives of the National Awakening literature of Turkestan. By the way, the coach, the author of the first textbooks. Founder of" school"," publishing " companies. One of the founders of the Uzbek theater – the developer of the group of theater lovers "Turon" in Tashkent. Finally, he was one of the diplomats of the new era, who tried to establish mutual relations between Afghanistan and Turkestan. Abdulla Avlani was well acquainted with Persian, Russian, Azerbaijani and Arabic languages[7.78], and was well acquainted with Eastern and Western cultures. It is not surprising that in 1930 he was approved as a professor of the Department of language knowledge of the Faculty of Pedagogy of SAGU. He did not only sympathize with the grief of his people, but also expressed sorrow for his prospects, calling for freedom, happiness and the struggle for Holy ideas. The schools opened and tried to enlighten the broad people and educate the youth in the progressive spirit of the era. He wrote educational-moral works, textbooks, left a significant mark in the development of Uzbek pedagogy. It also played a major role in the development of the movement of momentum, that is, the arrival of the national consciousness on the field.

Currently, a number of schools are functioning in the name of teacher pedagogue Abdulla Avloni. The Union of writers of Uzbekistan has established an award on children's literature after his name. It is also named after two neighborhoods in Tashkent, three schools and a kindergarten, as well as the Central Institute for professional development of teachers of the Republic.

Summary and suggestions. In conclusion, it is worth noting that the study of a foreign language not only keeps a person in a harmonious state, but also contributes to the prosperity of the country through the development of human thinking.

This means that the propagandists of Enlightenment were active in the development of the nation as the main goal of studying and promoting foreign languages in the activities of the jadids. This activity remains one of the important issues for the fate of our modernized country.

The following suggestions can be put forward on the topic under study:

The use of materials on the teaching of foreign languages and the history of its development for the modernization of educational centers of state and non-governmental organizations in the process of Language Teaching; innovative pedagogical process in the educational system, as well as aspects necessary to use in the field of scientific research work have been identified;

The use of foreign languages in the study of the history of Uzbekistan in research aimed at studying the problem of teaching and improving it;

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REFORMS OF HIGHER EDUCATION IN UZBEKISTAN (2017-2021)

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Annotasiya: Maqolada yurtimizda oliy ta'lim sohasida amalga oshirilgan islohotlar, ushbu islohotlarni vatan ravnaqini ko‘tarishga xizmat qilishi, jamiyatimiz

salohiyatini oshirishi, yetuk kadrlar va mutaxassislar yetishtirib chiqarishga xizmat qilishiga doir ilmiy xulosalar bayon etilgan.

Kalit so‘zlar: Oliy ta'lim, islohotlar, institut, universitet, ilm-fan, innovasiya, byurokratiya, korrupsiya, integratsiya, doktorantura, texnologiya, konsepsiya, intelleklual taraqqiyot, innovasion ta'lim, axborot-kommunikasiyasi.

Аннотация: В статье описываются научные выводы о реформах, проводимых в области высшего образования в нашей стране, служащих повышению благосостояния этих реформ, повышению потенциала нашего общества, служащих развитию зрелых кадров и специалистов.

Ключевые слова: Высшее образование, Ислам, Институт, Университет, наука, инновации, бюрократия, коррупция, интеграция, докторантура, технология, концепция, интеллектуальное развитие, инновационное обучение, информация и коммуникация.

Abstract: In the article, scientific conclusions on the reforms carried out in the field of higher education in our country, serving to increase the prosperity of these reforms, increasing the capacity of our society, serving to the development of mature personnel and specialists are described.

Key words: Higher education, Islam, Institute, University, science, innovation, bureaucracy, corruption, integration, doctorate, technology, concept, intellectual development, innovation training, information and communication.

As we all know, the cornerstone of development is also,
who makes the Country Strong, who makes the nation great
power is also this — science, education and upbringing.
Tomorrow, the light bulb of our homeland,
first of all, the education system and our children
it is closely related to the upbringing we are giving.
Shavkat Mirziyoev

Introduction. Each period is rich in its own factors of development, needs, requirements and vital principles. Of course, in the formation and development of all this, giving them a special meaning, it is important to determine the socio-political directions of the state and society.

When conducting socio-economic reforms of any state, the main goal is to increase the welfare of the population in the first place, to ensure their rights and interests, to strengthen the country's international influence.

Today, the socio-economic, political-cultural and scientific development of the state and society is evidence of the bright future of this country.

Literature review: The fourth priority direction of the strategy of action on five priority directions of development of the Republic of Uzbekistan in 2017-2021-the priority directions of development of the social sphere in the fourth paragraph of the article "development of the educational and scientific sphere in the transition to international standards of assessment of the quality of education and training"[1] priority

General rules in the concept of development of the higher education system of the Republic of Uzbekistan until 2030, the current state and existing problems of the higher

education system, strategic goals and priorities of the development of the higher education system, as well as the expected results of implementation of the concept are fully reflected[2].

Research methodology: the literature review and field information methods used in this scientific paper. If the opinions analyzed from these publications are used in practice, they will be effective for our society and the state, their disclosure will be habai and promoted.

Analysis and results: "If you feed your people for a year, then you feed your people for ten years, then you feed your tree, if you feed your people for centuries, then knowledge is EC" – was Chinese philosopher Konfutsiy (551-479 BC years.

In the context of political-economic, cultural-educational reforms carried out in our society, it is the most effective and most beneficial reform in the state and society, in comparison with other reforms, that is, social reform. In fact, to what extent social life is inseparable, sertashvish, serdaromad, all the remaining reforms will continue to develop on their own. Because the creator, the executor of each reform and their implementation in life is also a person. Gradually, when mankind acquires the achievements of science, it begins to implement them first in the life of society and then in the life of society, which in itself contributes to the emergence of processes of renewal, modernization in society.

As a result of the reforms of Higher Education, which are the most effective of such reforms, the door of opportunities for any citizen wishing to receive higher education in our country was opened. More precisely, conditions were created for obtaining higher education regardless of age in the form of daytime, evening and Siti education. That is, every citizen of our country, regardless of age, nationality and Origin, has received full access to his constitutional rights.

The changes that have taken place as a result of the reforms carried out in the educational system, including higher education, have a great historical significance in terms of socio-political, legal, economic and spiritual. The reforms carried out have not only brought great positive changes in our country, but also brought our country's reputation to a new level, even in the international arena. A number of normative documents were adopted in this regard.

The president of our country critically analyzed the shortcomings in education and showed ways to eliminate them. The development of the educational system, improvement of the professional and prestige of teachers in society, raising the spirituality of the younger generation, adaptation of the spiritual and educational environment to the modern demand, increasing the prestige of the teacher, training teachers of the new period, development of pedagogical science, serious approach to the issues of paying great attention to the introduction of innovative

All conditions and opportunities are created in higher educational institutions for the implementation of the state policy aimed at confidently solving all issues put forward by modern science and production.

This year, the parameters of admission to higher education grew by 2.5 times compared to 2016, the level of coverage of our youth with higher education reached from 9 percent to 25 percent. About a thousand girls from needy families were first admitted to higher education institutions on the basis of special state grants[3].

The education system is being consistently developed in order to educate young people with knowledge and skills, to prepare specialists suitable for World Development. The first reforms in the field of higher education were aimed, first of all, at increasing coverage, improving the financial situation of institutions and universities, financial support of professors and teachers.

In particular, in the last 3 years, the number of higher education institutions has increased from 65 to 117 thousand, the reception space has increased from 66 thousand to 181 thousand. Their material and technical base was strengthened. Within the framework of joint educational programs with foreign countries, training of specialists in 64 new professions was launched. The salaries of professors and teachers were increased by 3.5 times on average[4].

At the meeting, the head of our state showed 4 priority tasks related to the sphere of Higher Education:

1. is to increase the role of the management councils of higher education institutions and expand their competence.

2. is to adapt the learning process to the requirements of the market, to ensure its consistency with production and to create an environment for the student to work on his own.

3. increase the scientific potential of higher educational institutions, development of Science and innovation.

4. reduce paperwork for professors, teachers and students, to dramatically reduce bureaucracy and corruption by digitizing the sector[5].

It was noted that for the effective performance of these tasks, higher education institutions will be given the authority to make independent decisions on academic and organizational and management.

That is, from now on, the educational plan and literature, the introduction of science programs, the teaching load of professors and teachers, as well as the forms of education are decided by the Supreme Management Council itself. Now the activities of each student are evaluated according to his scientific potential.

Another important aspect of the reforms of higher education was the issue of finding documents for several higher educational institutions of our youth at the same time. We looked with interest at the admission process of foreign higher education institutions operating in our country for many years. After all, at the same time it was possible to find documents in all foreign universities in the country. This situation caused us both admiration and enthusiasm. In the same issue, the president of our country "serves our young people the opportunity to find documents in several higher educational institutions at the same time, I think, their right to education"[6]., — that was asserted. In no time our young people had such an opportunity.

In the following years, the penetration into the higher education system of the non-state and private sector, as well as many foreign universities and branches, has become a positive phenomenon. In one sense, the coverage of Higher Education provides for mutual competition in a positive sense between the state and non-governmental educational institutions, in the second, market laws in the system begin to work. After all, its result is important, because every higher educational institution struggles for quality personnel training. Competition and the market do not like

products of poor quality. As a result, the creation of a competitive product becomes the main goal of every higher educational institution, the result will be as high as expected. This means that the reforms in self-education are carried out with a deep thought.

One of the most important aspects of the reforms in the system was the establishment of the linkageadorlik integration between higher education and production. After all, without cooperation it is impossible to train highly qualified, modern-time personnel. As a result of the collapse of large industrial enterprises in our country, cooperation was interrupted, education and production were functioning in their own way. To date, large and medium-sized production enterprises in the country have raised Kamen, the integration of cooperation between higher education and production has been established. Students of technical higher educational institutions are not only acquainted with new technologies, but also have the practice of managing them.

Particular attention was paid to the scientific potential of higher educational institutions.

It is known that such a university is not considered prestigious if the scientific potential in international practice is less than 70 percent. In our country, this figure is very low. For example, the scientific potential of 24 higher educational institutions does not go to 25 per cent, there are not a single professor and a doctor of Science in 19 theses. In the last 30 years, only 208 professors and teachers received scientific degrees abroad. Therefore, the president instructed the doctorate to increase the number of quotas by 2 times from next year, to increase by 50 percent annually from next year[7].

Today, the educational activities of the universities are further improved and the virtue of our people's striving for knowledge, which has been formed over the centuries, is once again manifested. Our young people are trying to achieve excellence and see education as the main condition in the process.

In our country, in October 2019, the concept of development of the higher education system of the Republic of Uzbekistan was adopted until 2030. This document was based on such tasks as the acceleration of development, training of competitive personnel, effective organization of scientific and innovative activities and the development of integration of Science, Education and production in order to strengthen international cooperation. The content of the concept reflects the priorities of the reform of the higher education system of our country. It includes the expansion of the level of coverage in higher educational institutions, improvement of the quality of Education, introduction of digital technologies and educational platforms, involvement of young people in scientific activities, formation of innovative structures, commercialization of the results of scientific research, achievement of international prestige and many other specific directions. All this serves to raise the educational process to a new level of quality.

Conclusions and Recommendations: In conclusion, it should be noted that the development of education and science in our society serves in all respects the development of competent persons, mature and highly qualified specialists. This in itself determines the future of our state.

The following suggestions can be put forward on the topic under study:

- Determination of priority directions of systematic reform of higher education in the Republic of Uzbekistan;
- to raise the process of training highly qualified personnel with modern knowledge and high moral and moral qualities, thinking independently to a qualitatively new level;
- modernization of higher education, development of social and economic sectors based on advanced educational technologies[8].

If these reforms are implemented, they will serve to determine the long-term prospects of the Republic of Uzbekistan.

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UDK 63.5995

HISTORY OF REFORMS TO IMPROVE THE EFFICIENCY OF IRRIGATION SYSTEM IN FERGANA VALLEY IN THE YEARS OF INDEPENDENCE (On the example of Andijan region 1991-2016y. y).

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Annotasiya. Ushbu maqolada mustaqillik yillarida qishloq xo‘jaligining yetakchi sohalaridan biri bo‘lgan irrigasiya tizimida olib borilgan islohotlar samaradorligi aytilgan. Bu ishlar bo‘yicha Andijon viloyatidagi katta o‘zgarishlar haqida fikrlar bildirilgan.

Kalit so‘zlar: sug‘orma dehqonchilik, sun'iy sug‘orish, irrigasiya, sug‘orish inshootlari, suv resurslari, ariq.

Аннотация. В данной статье описывается эффективность реформ, проведенных в ирригационной системе, одной из ведущих отраслей сельского хозяйства в годы независимости. В этой работе были высказаны мнения о серьезных изменениях в Андижанской области.

Ключевые слова: орошаемое земледелие, искусственное орошение, орошение, ирригационные сооружения, водные ресурсы, канава.

Abstract. This article describes the effectiveness of the reforms carried out in irrigation system, one of the leading sectors of Agriculture in the years of independence. Opinions on major changes in Andijan region have been expressed in this work.

Keywords: irrigation farming, artificial irrigation, irrigation, irrigation facilities, water resources, ditch.

Introduction. After Uzbekistan gained independence, a number of reforms were carried out in the economic, social and political spheres. Shular a number of positive works were also carried out on the development and reform of the agricultural sector. Updates in the irrigation system, which is one of the leading sectors of Agriculture, serve as an important factor for humans. The first president of the Republic of UzbekistanA.As Karimov pointed out:"the more important it is to preserve the signs of civilization, the more important it is to preserve land and water in a region based on farming, where agriculture has been completely irrigated for thousands of years."[1]

One of the characteristics characteristic of Agriculture of our republic is the implementation of this farming on irrigated lands.

Literature review. A number of monographs and textbooks were used to cover the topic.In particular, a who studied the irrigation of the Fergana Valley at the end of the XIX century. Middendorf wrote," First of all, we must get shogird to the lands that are rich in thousands of years of tested experience achievements"[2] while another expert in Fergana Valley wrote V.I.Kushelevsky said that "it is impossible to imagine how illiterate people, in terms of technical knowledge, were able to carry water from steep-edged places to their fields"[3].

Research methodology. In this scientific paper, the existing literature analysis and field information methods were used. If these analysis ideas are used in practice, they will be effective and the disclosure will be reported and promoted.

Analysis and results. Farming plays an important role in the formation and development of the ancient centers of human civilization. In the 4th millennium BC, in the south of Central Asia during the Eneolithic period, irrigation farming began, rivers and ditches were opened, various plants (barley,Willow, Rye) were planted, fruit-growing was also developed, using a wide range of fertile land. And in the Bronze Age, the peasant farm, based on artificial irrigation, formed the basis of the Central Asian farm. The high productivity forms of irrigation farming have led to decisive changes in the society. In particular, as a result of the peasant tradition, additional products and appearance of khusuiy property appeared.

As is known from history, the cultivation based on artificial irrigation developed in the Bronze Age in the south of Uzbekistan, in the regions of the Tashkent Oasis and

the Fergana Valley during the first Iron Age. It is worth noting that the method of irrigation-irrigation, according to archaeologists, began to be used about ten thousand years ago. At that time, they used flood waters to improve the water regime in the soil. Around the Nile, Tigris, Amudarya, Sirdarya, Zarafshan rivers, it is known that a few thousand years have been cultivated in the region of Azerbaijan. The remains of ancient irrigation facilities are the signs of irrigation of very old times, the places preserved until this time are many threeraydi.

In our country, as in ancient times, the irrigation method was used in the valleys of Khorezm, Karakalpakstan, Samarkand, Marv, in the Fergana Valley. In these places, the remains of ancient irrigation facilities can be found at every step. According to Herodotus, in ancient times more than 360 artificial irrigation canals, water facilities were restored along the Oks (Amudarya) river, water was supplied to the steppe and desert lands, and crop fields were built for farming.[4].

According to the conclusions of archaeologists, irrigation farming in the Fergana Valley began in the middle of the II millennium BC.

Central Asia, in particular, in the Fergana Valley, we can witness the fact that in the early periods of historical development, the main part of the population lived without vegetation and created a high-level peasant culture.Preliminary Written data on the ancient irrigation farming of the Fergana Valley are threeraydi in ancient Chinese sources. Such information was written by Chinese tourists of that time.

In this place, the Russian scientist V.I.Radlov's following statement states that "the irrigation system here is a technical miracle, and even the command that such discoveries are conceived by our real engineer irrigator scientists is Mahal.You will be surprised to see these works and you will say that it is well done to see the water essays and irrigation methods created by the ordinary Uzbek farmer due to such labor without scientific knowledge"[5] is also evidence of sufficient development of irrigation works in our regions.

By the last quarter of the twentieth century, it became clear that there were sharp problems in the agrarian sphere of the republics of Uzbekistan and the army, which had ancient traditions and rich experience in agriculture. The leadership of the former Union failed to take into account local conditions, centuries-old experience in the peasant culture, improper use of land and water, the use of cotton and other technical crops that require a lot of water, and serious economic and environmental problems began to emerge in Uzbekistan.

In the early years of independence, the creation of the necessary conditions for the further sustainable development of agricultural production, improvement of the land reclamation situation, increasing their productivity and on this basis increasing the yield of agricultural crops, as well as the organization of irrigation and melioration works and the improvement of financing mexanizm became one of the main priority tasks.

Today, the government program on the effective use of Water Resources has been adopted in the Republic of Uzbekistan. Various decisions, laws are adopted in the Republic on the development of this sphere.

In the "strategy of action on five priority directions of development of the Republic of Uzbekistan in 2017-2021"approved by the president of the Republic of

Uzbekistan on February 7, 2017, it was noted that the priority directions for modernization and rapid development of agriculture are improving the land reclamation situation of irrigated lands, the development of melioration and irrigation facilities, intensive[6]

The adoption of the decree of the president of the Republic of Uzbekistan dated October 29, 2007 "on measures to radically improve the land reclamation system"PF-3932 is also a sign of attention to water and Water Resources.

Decree of the president of the Republic of Uzbekistan "on measures to improve the land reclamation situation of irrigated lands in the period of 2013-2017 and further improvement of rational use of water resources"of April 19, 2013, decree of the Cabinet of Ministers "on measures to introduce and Finance effective organization of drip irrigation system and other water-saving irrigation technologies", The resolution"on the program of measures to mitigate the consequences of the island accident" and others are from the sentence.[7]

A number of effective works have also been carried out in Andijan region in this regard. In particular, according to the decree of the president of the Republic of Uzbekistan № 957 dated September 10, 2008 and the decree of the Ministry of Agriculture and Water Resources № 165 dated September 26, 2009 "ulugnor "nasos station in Andijan region, the decree of the president of the Republic of Uzbekistan № PP - 1052 dated February 2, 2009 and the decree of the ministry - 1 "also, in accordance with the decree of the president of the Republic of Uzbekistan dated September 12, 2008 № 958 PP and the decree of the Ministry of Agriculture and Water Resources № 164 № 26.09.2008, a large – scale work has been carried out within the framework of the project to restore the" Raish - Khakent – 1-1K " pump station in Andijan district.

In the following years, several pumps were reconstructed. In particular, the "Shirmonbulak" nasos station of Bulakbashi district was carried out in accordance with the decree of the president of the Republic of Uzbekistan dated April 19, 2013 № pp - 1958, including the "Kok gumbaz" nasos station of Andijan district dated June 4, 2013 № 01-02-70-48, and the "2013-2017" program approved in accordance with the statement of the Minister of the Republic the restoration project was carried out. Asaka district "Raish - Khakent - 2" nasos station was carried out according to the decree of the president of the Republic of Uzbekistan dated April 22, 2014 № PP - 2166, as well as the order of the Ministry of Agriculture and Water Resources dated April 22, 2014 № 97. Pump station "Asaka adir" in markhamat district according to the decree of the president of the Republic of Uzbekistan № PP - 2167 of April 22, 2014, as well as the order of the Ministry of Agriculture and Water Resources № 97 of April 22, 2014, the pump station "Kurama" in Izkankan district was approved by the scientific and technical Council of the Ministry of Agriculture and carried.[8]

The wide introduction of water-saving technologies in our country, the use of the state-created facilities for this purpose contributes to the development of agricultural production and further improvement of the well-being of our people.

Summary and recommendations. in other words, as a result of the irrigation networks, the work on the timely supply of water to farmers and farmers farms is giving a positive result. The unprecedented expansion of irrigation networks,

accompanied by the high level of agricultural work and the use of advanced agrotechnics, serves to increase the labor productivity of farmers.

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