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ROLE OF MULCHING AGROTECHNOLOGY IN DEVELOPING WATER SAVING AGRICULTURE AND OPPORTUNITIES OF GARDENING WITHOUT WATERING IN NAMANGAN REGION ADYRES

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Annotatsiya: maqolada suv taqchil bo'lgan hududlarning qishloq xo'jaligi sohasida ko'p foydalaniladigan mulchalash agrotexnikasi, uning suvni tejashdagi ahamiyati yoritilgan. Shuningdek, mulchalashdan foydalanib Namangan viloyati adirlarida sug'ormasdan bog' yaratish imkoniyatlari bo'yicha olib borilgan tajriba natijalari bayon qilingan.

Kalit so'zlar: mulching, tuproq namligi, adir mintaqasi, sug'ormasdan bog' yaratish, suvtejamkor qishloq xo'jaligi.

Abstract: the article discusses mulching agro technology which is frequently used in water rare areas and the role of water saving. Besides that experiment results of opportunities of gardening by mulching in Namangan region hills are presented.

Key words: mulching, soil moisture, hills, gardening without watering, water saving agriculture.

Аннотация: в статье рассматривается агротехника мульчирование, которая часто используется в сфере сельского хозяйства в регионах с проблемой воды и его роль в экономии воды. А также, представлены результаты эксперимента по возможностям разбивки сада в холмистых местностях Наманганской области, пользуясь мульчированием

Ключевые слова: мульчирование, влажность почвы, адырная зона, разбивка сада без полива, сельское хозяйство с экономией воды.

Introduction. One of the important agro technological measure to be taken to preserve soil moisture in agriculture is called mulching [8]. (Mulching



English word, which “mulch” means covering, that covering the surface of soil with mulch paper or not compact materials such as rice or wheat straws, wood shavings, fertilizer humus and others completely or in rows. Mulching is used, especially, water rare, cold weather with few sunny day continent as well as in countries where day and night temperature is high. Because as mulching prevents from useless evaporation, consequently soil moisture is used for a long time for plant growing.

Literature review. People has been using mulching to prevent their plants due to uncomfortable weather or harvest productivity decrease. Mulching has been carried out in different regions with various ways and their results are not the same respectively.

For instance, people in Sogd Province, Asht district utilized stone as mulching in highlands near the river. Because it can be seen the moisture under a big stone in sunny days of summer. Gathering stone around the tree makes effective condition for the tree growing [9].

Local fertilizer (manure), rice or wheat straws, wood shavings, hay and cane have been used in Namangan region hills as mulching and is still being used in some areas the region. Sapling trunks are surrounded by one of the above mentioned mulching items 1- 1,5 meters radius from sapling and 10-15 sm in depth. Besides that, means of mulching are scattered between the rows and cultivated so that rodents cannot harm in winter [2].

Current research results shows that some gardeners in some regions of Uzbekistan use different ways instead of above-mentioned methods. Plants seeds which are not lost green grass condition are sowed thickly under fruit trees in autumn or early spring. Consequently that grass will grow and cover the ground. The grass absorbs the majority of the sunbeams, along with it protects from high temperature and over evaporating soil moisture thanks to shadows of surface of the ground leaves. In addition to this, drops of dew may serve as a way of increasing soil moisture. Water less evaporates in the field which is



covered with plants in comparison with it is not. For instance the amount of evaporation in 10 cm part of the soil less than 1,1-1,6% in Zarafshan valley grounds covered with plants in comparison with open ground.[10].Moreover grass due to raining protects effectively from becoming a crust, water and wind erosion. This certainly leads to affect the growth of the fruit trees positively and upgrade the productivity.

.At the end of the 90th years of the XX century cotton sowing of Andijan technology is realized in huge fields. [8] By this way, polyethylene is put on the garden-bed, sowed cotton seeds in per holed by the help of special adjustment which is fixed with sowing-machine. Polyethylene is removed after budding.

Using polyethylene as mulching material in near Tashkent and Dushanbe cities is worthy pointing out the experiment which was done by N.Lukin. He did an experiment on the peanut and apple tree. He covered the sapling trunk with polyethylene. He covered soil in 3 – 5 cm to prevent from increasing soil temperature under polyethylene greenhouse effect. According to results mulched peanut saplings grew 2,5 faster than not mulched ones. Likewise, mulched apple trees harvest is more than 10 – 15 5% than not mulched trees.

The next experiments were performed on vegetables. In 1986 although the weather was hot and dry, tomatoes was harvested 250 centner from per hectare. It is fact that its crop turned to be small, but its taste was nice. it is fact that size of the fruit was smaller, however its taste was sweet [9].

Research methodology. It was conducted a gardening experiment by considering to use save soil moisture peculiarities of mulching agrotechnics in Namangan region hills. The first experiment began by separating enough ground (0.05 hectare) and cultivating in autumn, 2013. The reason is cultivated ground gathers absorbs more moisture. [1] Brooklet was dug through each of those planted sapling trunk in 80 – 100 cm radius and 25 – 35 cm in depth.

As soon as planting saplings their trunks, at the edge of the dug brook let of the planted sapling trunk was covered with polyethylene, with another word,



mulching is done. Its surface was covered with soil 3- 5 cm not to increase degree of soil, that to protect from greenhouse effect.

By this was the main part of the work is completed. In the next step phenological observation is done until the end of vegetation of the saplings”. In mid-autumn, that is, at the end of vegetation, polyethylene which was covered around the saplings was removed and then carried out hoeing to reserve water from atmospheric precipitation in winter and spring [7].

Analysis and results. According to experiment results, vegetation of mulched saplings is the same with watered saplings. Blossoming, being in leaf, having branches and growing happened in both type of the saplings. Leaf dropping began 10 -15 days earlier. During vegetation apricot trees grew 35 – 40 cm in average, apple trees grew 25 – 30 cm, peach tree 30 cm. [6, 7]. Not drying of not watered saplings and Having positive vegetation period shows that there is possibility of gardening without watering.

0,05 hectare, new experiment field was made near the area where the first experiment was held in 2014 and 5 bushes of apricot - trees, cherry – trees, quince – trees saplings were planted on March 19. Every sapling covered with Polyethelene, according to above mentioned technology.

Phenological observation was done on growing and developing of saplings from the date of planted until the end of vegetation [3,4,5].

According to results vegetation period of saplings passed well without being watered. The first blossom and complete blossoming, coming into leaf, at the end of vegetation period leaf shedding periods happened in the same period with watered trees vegetation. The pace of growing of experiment planted trees in 2014 is higher than the trees planted in 2013. Five apricot – trees had 100 flower buds, but they did not have fruit. Some saplings grew even 100 cm within a year.

The paces of saplings in the experiment garden grew differently depends on tree types in newly cultivated garden in 2014. Growth of peach – trees and quince – trees was better other trees. The least results were observed in cherry – trees, apple – trees



and apricot – trees. It was observed that some of those trees dried up.

According to research results, growing of removed saplings in autumn trees and replanting them in spring was ineffective. Plum – tree, apple – tree and apricot – tree had the same result due to that condition. On the contrary, replanting peach and quince – trees in spring happened to grow better.

Conclusion and recommendation. Plasmolysis on sapling leaves occurred in hot and sunny days of summer. But deplasmolysis process was observed in the afternoon the leaves turned to recover. No matter the precipitation is low, the condition of saplings is good and this result showed a possibility to do gardening on the hills without watering. In addition to this, it showed to develop this technology because of experiment saplings had few brunches, low growth rate, few numbers of flowers, losing of their fruit before they were raped and their weakness for cold weather in weather.

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