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THE GROWTH, DEVELOPMENT AND YIELD OF APPLE TREES IN INTENSIVE FRUIT ORCHARDS ARE HARDWOOD CUTTING COMBINATIONS AND THEIR DEPENDENCE ON THE THICKNESS OF SEEDLINGS.

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Abstract :

In the article, hardwood cuttings' combination of growth, development and productivity increase of varieties such as Goldspur and Golden Delishes in intensive apple orchards of "Siyovush Agro" LLC farm located in the MFY in Bukhara District of "Boghi Kalon" in the Buxoro region, and the dependence on the thickness of seedlings have been studied in detail.

Keywords: intensive gardening, apple varieties, hardwood cutting, combination, planting thickness, biological properties, growth and development, productivity increase, efficiency.

Introduction :

The fruit-growing sector is considered one of the most important and unique sectors of Agriculture, and its area in the new intensive gardens of the country is significantly increasing with the restoration of seed-bearing fruit gardens, including apple and pear orchards.

On the basis of a sharp increase in fruit production in intensive fruit gardens, including apples and pears, an improvement in its quality and a reduction in the cost of manufactured products, it is planned to restore gardens connected to new fertile shrub trees, that is, low-growth orchards, and with intensive restoration of such gardens. Taking hardwood cuttings is the way to do it, but for years, I've been intimated to try this technique. Even seasoned gardeners say that it is hard to do successfully. With the following step-by-step methods, though, I found out just how easy it can be to make more of your most treasured woody plants. In recent years, intensive fruit orchards have been reconstructed in Uzbekistan, giving fruit trees a certain shape and taking into account the biological characteristics of the varieties, fruit trees are given shape, hardwood cutting, planting thickness and their biological characteristics are being studied in every way, and hardwood cutting combinations in intensive apple orchards, as well as the formation of planting thickness, development and, in particular, in the conditions of Bukhara region, research has not been thoroughly studied, holistic and complex on a scientific basis.

Main part :

One of the main factors in the creation of modern intensive gardens, including diamonds, is the creation of mother apple gardens, without this virus, that is, for the cultivation of clean various rooted cuttings. This prospect gives the opportunity to multiply the varieties of fruits in the best varieties of hardwood cutting. Hardwood cutting should be selected correctly and used them to ensure a high level of productivity in the native gardens. It is necessary to take into account the biological features of the Buda hardwood cuttings, as well as their care in different soil-climatic conditions. Hardwood cutting are usually taken in the dormant season (mid-autumn until late winter) after leaf fall, avoiding periods of

severe frost. The appropriate time is just after leaf fall or just before bud-burst in spring. Although this type of cutting may be slow to develop roots and shoots, it is usually successful.

Scientific research work will be carried out in the siyovush Agro LLC farmer farm located in the territory of "Boghi Kalon" MFY in Bukhara district, Bukhara region for 2021-2023 years. The climate is sharply continental, with an average precipitation of 125-175 mm per year. It is observed mainly at the beginning of spring, at the end of autumn and in winter. Warm sunny days last up to 240 days, during this period the average temperature of the air is 26-300S.

The hottest days will be in the summer. The air daytime temperature will be 38.6-46.2^{0}C degrees and even higher. According to the results of agrochemical studies, the amount of humus in the fields of meadows, old and freshly watered will be less. The amount of humus in the tillage layer of the soil is equal to 0.7332-0.7708%, nitrogen 0.06-0.12 mg/kg, the gross amount of phosphorus is 13.0-15.0 mg/kg, the amount of exchangeable potassium is 171.0-214.3 mg/kg. The soil of the farmer farm "Siyovush Agro" LLC, which is located in the territory of the Bukhoro District "Boghi Kalon" MFY, consists of weakly saline soils, irrigated from ancient alluvial, with a difference in the surface location of the water level (0.90-1.6 m), according to the mechanical composition – is considered to be moderately shallow soils [1, 2, 4].

The object of the study is the combination of small apple varieties and hardwood cutting, which differ from each other in their biological properties, as well as the thickness of the seedlings. The varieties studied in the experiment are these Goldspur and Golden Delicious, while in hardwood cutting they are the M-9 that grow in the octave. Apple seedlings are planted at the end of February 2020, in which the following planting procedures: 4.0x1.0; 4,0x1,2; 4,0x1,4; 4,0x1,6; 4,0x1,8 and 4,0x2,0 m are placed in a standing place in order. Tree branches are shaped in a semi-sparse (spindle bush, gruzbek) way, taking into account their biological properties. The process of forming is carried out in 2-4 year. In the period of growth and operation of stunted apple orchards drip irrigation method is established. As a result, when watered in this way, the water norm is saved 2-3 marotaba. Drop irrigation is carried out daily through hoses.

Hardwood cutting is A M-9 type lowland and is the main hardwood cutting for apple trees. The M-9 type Apple was created in hardwood cutting in the 1920s by the British scientific research station "East Malling", which is widely standardized and widely distributed hardwood cutting in the World fruit industry. For several centuries now, in Europe, "Paradis" has been used as hardwood cuttings. The M-9 hardwood cutting has cloned species that differ in different quality and growth rates, which are widely supported in the production of species.

In 1960 in the US it was obtained from the clone of the variety of "Golden Delicious". Harvest, seedlings enter the harvest in 2-3 year after planting in fruit gardens and give a quality harvest. It requires fertile soil and high agrotechnics. The fruit of the seedlings connected to this hardwood cutting is interrupted in September. Recommended for planting in all regions of Uzbekistan and achieving high efficiency has been proved in industrial orchards.

The USA homeland of Golden Delishes variety, the time of harvesting the fruit is September, the ripeness of the fruit – 60-90mm, and the flowering period is medium, the growth rate of the tree is also medium, it enters the harvest very early and gives a high yield. In experiments, the growth of apple trees, the yield of which is considered to be largely dependent on the methods and levels of cutting shocks that yield [1,2,3].

Experience results :

In 2020-2021 years in the horticultural farm "Siyovushagro" LLC located in the territory of "Boghikalon" MFY of Bukhara District of Bukhara region, the combination of varieties of pakana apples and the effect

of planting thickness on the phytometric indicators and yield of fruit trees is being studied. In general, it is desirable to conduct a strong degree of cutting of the stalk to allow the pakana apple tree to grow and develop its vegetative mass depending on its growth. In the case of apples connected to Goldspur and Golden Delishes varieties M-9 hardwood cutting, strong reduction levels allow a high increase in the vegetative mass, darkening the tree top, which in this case negatively affects the transition of the sun's rays to its center of the trunk.

Therefore, in intensive orchards, the shrinkage of the branches of fruit trees every year, depending on the age, condition, variety, biological characteristics and the growth force of the hardwood cutting, is especially suitable for the purpose of applying a powerful method of shrinkage, which creates favorable conditions for the normal photosynthesis process in the leaves located in the inner parts of the tree, providing

In intensive apple orchards, stagnant hardwood cuttings are used correctly, observing the methods and levels of cutting in the connected varieties, creating a favorable environment for the growth, development and internal, external conditions of the trees, when used more wisely, allowing the generative organs to bear a large amount each year, which ensures a high harvest every year and causes a sharp increase in the indicators of the economic productivity

The generally accepted methodological guidelines on the varieties of small apples studied in the experimental process, calculation works, phytometric indicators of the apple tree, light and photosynthesis productivity, as well as the methodologies produced at the All-Union Scientific Research Institute of horticulture (1982) for the study of productivity and its quality indicators were used.

Not every plant is a candidate for the hardwood-cutting method of propagation. The ones that do qualify are mostly deciduous trees or shrubs that go through a period of dormancy before pushing significant new growth.

The results of the conducted scientific research show that depending on how the trees are shaped in intensive apple orchards, the biological characteristics of the hardwood cutting, the feeding area and the thickness of the seedlings, the degree of activation of the photosynthesis process in the leaves, the accumulation of dry matter, the anatomical structure of the tree, the dynamics of growth, the increase in leaf in varieties connected to the stunted slow-growing hardwood cutting, Goldspur is shown to be 4, 0x1,2 and 4,0x1,4m in the scheme of transplanting the Golden Delicious varieties seedlings into the garden, that is, a permanent place. Apple trees, located in this order, have developed well and have the highest phytometric indicators.

One of the main indicators in agro technical experiments is the permeability of the main stem of apple trees in varieties connected to the stunted slow-growing hardwood cuttings in the gardening farm of “Siyovushagro” LLC, located in the territory of Bukhara district Boghikalon MFY. These indicators were observed when transplanting seedlings 4,0x1,2 and 4,0x1,4m into the garden in the combination of hardwood cuttings are studied, and the growth of this indicator is 0,8-1,5 cm or 1,5-8,0%. Such data are reflected in scientific research conducted in many places.

Discussion :

In our research, it was found that the M-9 slow-growing hardwood cutting being tested did not fully absorb the lengthened area along the rows of trees from the second vegetation of the grafted Goldspur and Golden Delishes varieties, and there was a slow asthalic decrease depending on the top part of the tree. The following requirements are envisaged for the development and continuous production of high-quality and abundant harvest of apples Goldspur and Golden Delishes varieties 4,0x1,2m and 4,0x1,4m connected to a slow-growing vegetative budding in intensive orchards when the scheme is conducted in order.

In the process of using combinations of high, productive hardwood cutting varieties of apples, it is necessary to apply strictly, taking into account their biological properties, to densely place the seeds per hectare, against the background of the formation of an optimal tree trunk, the application of high agro technical measures, that is, to absorb less space, which ultimately leads to a sharp increase in the productivity.

The most necessary conditions for increasing the productivity of trees in intensive stunted apple orchards are the good and complete use of this sunscreen and the required reproduction of the leaf surface level. The grafted hardwood cutting variety combinations, methods of cutting trees, as well as the thickness of the seedlings, most often determines the size of the leaf part for the apple tree. It was determined and obtained that the optimal signs of these indicators were when planted in the garden 4,0x1,2m and 4,0x1,4m in the varieties studied. In the experiments, it was determined that the best growth, development and productivity of intensive apple seedlings connected to the slow-growing M-9 type hardwood cutting is dependent on the thickness of the seedlings [4, 5, 6, 7].

When it comes to keeping your cuttings wet, err on the dry side. Because the small branches don't have any roots to start, they won't be absorbing the excess water in the soil around them. Too much rainfall or watering by hand can quickly lead to rotted cuttings. Also, don't fertilize the cuttings until they are rooted and transplanted; fertilizers can burn tender cuttings or even kill them.

Even seasoned gardeners say that it is hard to do successfully. With the following step-by-step methods, though, we find out just how easy it can be to make more of your most treasured woody plants.

Leaf levels depend on several internal and external, metereological factors, the amount of energy coming to the account of the unit of area, and there will be no possibility to regulate them in field conditions.

Results:

As a result of the correct trimming of trees, they have a positive effect on their growth and development, high-quality and intensive fruiting. Including, using the emission from the distribution of solar energy, low costs are incurred on account of the area and the unit of the product. Even in the studies we conducted, it was found that light has regulated the degree of flowering and fruiting activity. It should be noted that in 50% light the leaves undergo a satisfactory process of photosynthesis. Lower than 30% of the light reduces the productivity of photosynthesis, under the influence of low-norm lighting, the fruits become smaller, negative indicators that are not characteristic of the variety are manifested, and this is evident in the varieties we studied, conducted in the garden in the Scheme 4, 0x1, 0m and 4, 0x1, 2m. Our research conducted in 2021 year showed that the amount of harvest in varieties, in which the sapling is connected to the slow-growing hardwood cutting, was 0,4-2,2 kg from one tree.

Conclusion :

In addition, with intensive dumpling apple varieties connected to slow-growing hardwood cutting M-9 and using agro technological factors correct and scientifically based layout, photosynthesis productivity will increase as a result of significant improvement in the brightness of the fruit tree trunks inside, while productivity and fruit quality will increase dramatically.

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