

INCREASING THE EFFICIENCY OF THE USE OF LANDS WITH GENERALLY LOW
SOIL IN THE KASHKADARYA REGION

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Annotasiya: *Maqolada Qashqadar viloyatini suvgo'rilmaydigan tog' oldi va tuproq unumdorligi past bo'lgan joylarni sharoitiga mos bo'lgan intensiv bog'larni tashkil etish va ulardan foydalanish darajasini yaxshilash hamda ko'p yillik bo'gdorchilik plantasiyalarni shakllantirish va bog' qator orlaridagi tuproqni himoya qiladigan tuproqqa ishlov berish mashinlaridan foylanib iqtisodiy samaradorlikka erish uchun zamonaviy usullardan foydlangan holda tashkil etish bugunki kunning talabi ekanligi, meva yetishtirishning texnologik va iqtisodiy jihatlari, mevachilik xo'jaliklari faoliyatidagi zamonaviy usullardan (tuproq tayyorlash, ekish, navlarni tanlash) kompleks chora-tadbirlari va nav tarkibi, mevali daraxtlarni parvarish qilish kabi tushunchlar keltirilgan*

Аннотация: *В статье рассмотрена организация интенсивных садов, подходящих для условий Кашкадарской области без орошения и участков с низким плодородием почв, и повышение уровня их использования, а также формирование многолетних садовых насаждений и охрана почва за садовыми рядами, что сегодня требует организация современными методами для достижения экономической эффективности с использованием почвообрабатывающих машин, технологические и экономические аспекты возделывания плодов, комплекс мероприятий современных методов (подготовка почвы, посадка, подбор сортов) в деятельности фруктовых ферм представлены такие понятия, как состав, уход за плодовыми деревьями.*

Abstract: *The article considers the organization of intensive gardens suitable for the conditions of the Kashkadar region without irrigation and areas with low soil fertility, and increasing the level of their use, as well as the formation of perennial garden plantations and soil protection behind garden rows, which today requires organization by modern methods to achieve economic efficiency. with the use of tillage machines, technological and economic aspects of fruit cultivation, a set of measures of modern methods (soil preparation, planting, selection of varieties) in the activities of fruit farms such concepts as composition, care of fruit trees are presented*

Tayanch so'zlar: *intensiv bog'lar, ildizpoya, novda, ekish, tuproq, meva berish, sug'orish, mexanizatsiyalash.*

Ключевые слова: *интенсивные сады, подвой, привой, почва, посадка, плодоношение, орошение, механизация.*

Key words: *intensive orchards, rootstock, scion, soil, planting, fruiting, irrigation, mechanization.*

Introduction. The sanctions that have been constantly imposed against Uzbekistan in recent years have a direct impact not only on the economy, but also on the country's food security, thus forcing it to take retaliatory measures, including the use of an import substitution strategy, which should give impetus to the development of agriculture, improve access of domestic goods to regional markets, increase demand for domestic raw materials from processing enterprises. Until recently, the production of fruits and berries in Uzbekistan amounted to only 31% of medically justified standards, and 52% was met by imports. Gardening has been and continues to be a highly profitable industry for many decades. After all, a fruit-bearing garden, with proper care, gives an income many times higher than the income from the production of annual crops. However, due to various reasons, the horticulture industry in our country was practically destroyed. In the Kashkadar region, as well as throughout Uzbekistan, the areas of perennial plantings were sharply reduced. Meanwhile, the natural aging processes of existing gardens are also a serious problem. It is necessary to plant young seedlings. And there are no more than six fruit-growing enterprises in the Kashkadarya region, for example, while only two or three of them are engaged in planting young plantations". Accordingly, the number of specialists capable of efficiently and competently organizing the processes of fruit production has also decreased. In the light of the above, the task of comprehensively informing business managers about the principles of organization and planning of horticultural enterprises, the latest research in the field of breeding, agricultural technology, intensification of the horticultural industry, ways to protect the garden from adverse factors, economic aspects and prospects for the development of horticulture becomes very relevant. The purpose of the authors of this article is to solve the problem of such information and to give a broad overview of the sources that should be used in the design and operation of intensive gardening facilities.

From this point of view, the advantages of so-called intensive type gardens are obvious. An intensive garden has two characteristic features:

- a) it is laid by planting from plants that enter into fruiting early;
- b) it must yield not only high-quality crops, but also exceeding the yield of traditional gardens.

A garden with more than 1,500 trees per hectare is considered intensive. Now, however, many promising gardens have 2500-2800 trees per ha and even higher density-6-20 thousand/ha. Such gardens pay off the gardener's expenses in a short time, as a rule, this happens after 4-5 years. But it should be borne in mind that intensive gardening carries with it certain risks. It requires:

- serious capital and organizational investments during the first year;
- competent highly qualified management;
- special training of personnel for work;
- should enter fruiting within 2-3 years after planting;

Since an intensive garden does not live and bear fruit for long, a maximum of 20 years, the slightest mistake at the first stage can ruin it and make it unprofitable. The right choice of a place for a garden and its organization. The plot intended for intensive gardening should have a leveled relief, a slope of up to 6-9°. Depressions, hollows, closed depressions, waterlogging are undesirable. In the southern regions of Uzbekistan, wet northern or northwestern slopes are used. Gardens laid out without taking into account the site's exposure can seriously suffer from climatic factors. For intensive gardens, structural, highly fertile, well-drained, moisture—intensive soils without signs of salinization, with a density of no more than 1.35-1.40 g/cm³, carbonate content - no more than 12-15% are well suited. Areas with a close occurrence of groundwater (less than 1.5–2.0 m) are not suitable, because the trees on them are poorly developed, weakened and freeze harder in cold winters. Sandy, swampy, heavy clay soils devoid of aeration and drainage are of little use. The limit of total salinity is 0.14—0.20% . Preplanting tillage consists in creating a deep root layer, increasing its fertility and improving the structure. On well-fertilized soils, fruit trees can be planted immediately. Soils that are insufficiently fertile or heavily clogged are previously kept under black or occupied steam, while introducing organic fertilizers. The plot for the garden is plowed in autumn or spring. Landing on the strips is carried out in deep furrows. 40-50 tons of organic fertilizers (manure, peat fecal matter, compost), 2-3 tons of potash fertilizers and 4-5 tons of superphosphate are applied to each hectare before plowing. Instead of superphosphate, 8-10 to of phosphorous flour or 5-6 sty of phosphorous flour mixed with 2-3 to of superphosphate can be added. Acidic soils are limed at the rate of 3-5 tons of lime per 1 hectare, depending on the acidity of the soil. During the spring planting of fruit trees, the soil plowed since autumn should be broken in two tracks in the spring. In autumn planting, harrowing is carried out immediately after plowing. Instead of continuous cultivation of the soil when laying a garden, which requires a lot of organic and mineral fertilizers and labor, you can limit yourself to local cultivation of the soil in planting pits (1 m in diameter and 60 cm deep) . The territory allocated for the garden should be located inside the system of garden protection plantings, which protect the array of fruit trees, weakening the harmful effect of wind, improving the microclimate in the garden . Often new gardens are laid out along the slopes in previously existing squares without taking into account the terrain. The contour system of planting trees with a zero slope of rows eliminates the need for additional erosion control measures. In the case of a slope of more than 3°, water erosion can manifest itself quite strongly, which determines the need for anti-erosion measures . Selection of breeds and varieties. Annual high yields, which make it possible to recoup the costs of the pile for their

cultivation and make a profit, are one of the most important conditions for any agricultural production. But the varietal composition of the garden being laid should take into account a number of other factors: — with a generally favorable climate in the south, various negative weather phenomena are quite often noted: low temperatures in winter, spring frosts, droughts, excess heat in summer. This causes damage to fruit crops. Climatic conditions lay down requirements for frost resistance, wind resistance, drought resistance of plants;

—soil quality determines the requirements for resistance to growth in case of possible salinization, the appearance of nearby groundwater, etc;

—environmental features may favor the fact that nature begins to restore its borders, for example, in the form of afforestation of territories, and plant productivity decreases sharply;

— a number of varieties are susceptible to major fungal and viral diseases.

Growing gardens requires creating optimal conditions for the growth of trees. Unfortunately, it is not always possible to achieve this in the conditions of the Kashkadar region, primarily due to the climatic features of the region. Due to its southern position, the territory receives a lot of solar heat. But the so-called radiation balance can change dramatically from season to season. And in winter, there are often breakthroughs of cyclones from the south-west, which contribute to the removal of warm and humid air. In June–August, hot, sunny, arid weather prevails. The rainiest month is June, and July is the hottest. The average daytime temperature in July is +25 degrees, but often rises to +45. In this regard, it is necessary to pay attention to the scientific methods of zoning industrial horticulture, a comprehensive assessment of the territory, up to the mathematical modeling of its compliance with the requirements of varieties of fruit crops. To maintain productivity and ecological balance in any agricultural production, including fruit growing, agro ecological zoning of varieties is important. Land management design when laying the garden should be carried out taking into account the selection of the assortment for each zone and micro zone. Experience and world practice show that the future belongs to short-growing short-lived breeds and varieties. No less important is the question of choosing the rootstocks on which the garden will be laid. It is advisable to use more adaptive medium-sized rootstocks (up to 3 meters high), due to a fairly powerful root system, better adapted to the transfer of moisture and nutrient deficiencies. Such rootstocks are intended for plantings with a density of up to 1000 der. / ha. They are also the most promising for use in biological gardens and energy-saving and environmentally friendly technologies. Research on the introduction of new rootstock crops is no less extensive. Protection of gardens from frost and spring frosts. To assess the ability of different varieties to tolerate winter damage, two indicators are taken into account—frost resistance and winter hardiness. Frost resistance is the ability of plants to withstand low temperatures. Winter hardiness is resistance to the whole complex of adverse factors that plants may encounter in winter: not only frost, but also a sharp

temperature drop, thaw. The assortment of trees zoned in the Don region is largely determined by the selection of highly hardy, weather-adapted varieties. It is impossible not to take into account the reclamation role of protective strips, because their competent location not only has a beneficial effect on the snow retention regime, but also ensures the safety of young plantings. Late frosts pose a serious problem, the fight against which has recently moved to a new level: the instrument control of the temperature regime is linked to blocks of chemical fuel, which can increase the ambient temperature. Physical means of protection against low temperatures are also used. When preparing a garden for winter, it may be necessary to use some agro technical techniques, such as sheltering low-hardy crops and forming an intensive garden. Pruning, care of plantings. Crown formation, pruning is one of the main types of work in the garden almost throughout the entire period of its life. Of particular importance, these works acquire in conditions of intensive gardening, with compacted tree planting, when it is impossible to create high-quality plantings without special crown care techniques. Not only the complexity and complexity of the work on the formation of the garden, but also the rapidity and productivity of plantings significantly depend on the type of crown. When choosing crown designs, much attention should be paid to obtaining not so much maximum as optimal effects aimed at the formation of sufficiently high and stable yields, at reducing labor and care costs for plantings and at maintaining ecological balance. The work on the formation of crowns requires a lot of attention and special training of workers, which, of course, cannot be ignored. Irrigation issues. Periodic watering is necessary to obtain maximum yields of any agricultural crops. If conventional sprinkling was used until the 1990s, then with the transition to intensive technologies for cultivating gardens, drip irrigation became the most rational option. For fruit crops, the soil moisture in the 0-100 cm layer should not be lower than 70-75% HB (the lowest moisture capacity). The depth of the moistened zone should vary depending on the type of rootstock: for gardens on weak and medium-sized rootstocks - 0.6-0.8 m, on strong-growing - 1-1.2 m. At the same time, we should not forget that intensive gardens are very diverse. They differ in planting schemes, types of crown formation, rootstock-graft combination. The soil structure under the plantings is also different. Mechanization of all labor-intensive works using new machines and tools. Modern gardening technologies are mainly oriented towards Western standards. Seedlings of imported varieties, foreign plant protection products against diseases and pests, fertilizers, and some technical means are widely distributed. At the same time, the level of mechanization of work often does not exceed 10-15%. A large number of different machines are required for maintenance and care in intensive gardening. Currently, farms have mainly equipment for spraying and weed control, often of foreign production. But intensive technology also requires other machines, including for pruning trees, tillage in rows of trees and between rows, mowing grass, harvesting and transporting fruits, etc. Chemicalization and bipolarization of gardening. According to scientists, the increase in yield by 55-

65% is associated with the introduction of agrochemicals; their use is still recognized as the main means of solving the food problem.

The use of chemical industry products in horticulture solves several problems:

- the rational use of fertilizers ensures stable yields;
- application of herbicides when preparing the soil for laying the garden;
- root formation stimulators, which have recently found wide application, allow you to grow high-quality planting material;
- protection of the garden from pests and diseases is unthinkable in the present without chemicals.

Methods of rational application of fertilizers in gardens are the most important task of modern fruit growing. At the same time, when using chemicals, the quality of the products obtained is very often reduced, the intensity of a number of biological processes in the soil is weakened, its nutritional regime is violated. More and more importance is attached to the use of full-fledged organic fertilizers. Manure, slurry, bird droppings, peat, various types of compost, bio humus provide the required level of biological activity of the soil, maintain the necessary balance of humus and optimal nutrient content in it. Currently, various concepts of economization of agriculture are being developed. The most radical directions are represented by alternative farming systems (organic, biodynamic, biological, etc.) The economics of the fruit industry. The current economic situation with its crisis phenomena, very difficult trade relations, rapid changes in the quality and assortment of products makes the issue of increasing the economic efficiency of gardening quite urgent and requires its separate consideration. The economic efficiency of investments in horticulture largely depends not only on technological factors (the species and varietal composition of plantings, their type, the costs of mechanization and chemicalization of production, etc.), but also on a number of external factors: global and regional conjuncture, state policy in agriculture, investment climate, etc. Gardening is a very labor—intensive branch of agriculture.

Conclusion. Solving the problem of gardening efficiency in Uzbekistan requires a comprehensive socio-economic approach, in-depth scientific research. When implementing gardening development plans that will make the industry attractive not only for investment, but also for business executives themselves, a comprehensive, integrative logistics concept of development should be considered. Despite the many advantages, gardening comes with some risks. Undoubtedly, only the one who correctly orients himself in this matter will benefit.

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