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THE INFLUENCE OF CROPPING ON FRUIT YIELD AND QUALITY INDICATORS OF EVENING APPLE VARIETIES FEEDING IN DIFFERENT MODES

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Аннотация
Ушбу мақолада қишки “Старкримсон” олма нави гул тугунчаларини тоқалашнинг мева сифатига таъсирини ўрганиш бўйича ўтказилган тадқиқот натижалари берилган.

Калит сўзлар: Сийраклаштириш, тоқалаш, солкашлик, гул тугунчалари, сифат, товар даражаси, азот, фосфор, калий, тош-шағалли, ҳосил юки, ҳосилдорлик, даромад, соф фойда, рентабеллик.

Annotation
This article presents the results of a study on the effect of pruning flower buds of the winter variety "Starkrimson" on fruit quality.

Keywords. Thinning, reduction in the number of fruits, frequency offruitingflower buds, quality, marketable products, nitrogen, phosphorus, potassium, gravel, yield, net profit, profitability.

Fruit growing on the basis of modern intensive technology is important to manage the fruit load of the tree. Because, as a result of excessive harvest, the compatibility between vegetative growth and generative activity, which ensures optimal leaf level and high-quality fruit formation, may be disturbed.

Failure of compliance affects the economy of the fruit farm and the quality of the fruit. In the orchards, the fruit crumbles, the price and purchase demand decrease, significant damage is seen. Fruiting is an important agrotechnical measure that can control fruit quality and shoot formation for the following year. Although the positive effect of mulching on flower and fruit production has been known for two hundred years, gardeners began to pay attention to it only a decade later. When hand-picking apples, first of all, flower buds or fruits that are malformed, stunted, damaged by insects and diseases are removed. A portion of healthy fruit is also removed from behind. Usually one fruit is left in one flower ball.

Many studies on apples have shown that when proper pruning is done, the apple becomes larger, more attractive, and the fruit acquires more color without reducing the yield.

Apples are usually picked by hand in the late stages, when the apples are about the size of walnuts. Although the cost of manual labor is high, the increase in the quality of the fruit will be offset by the decrease in future costs. Large fruits are easier to pick, sort and pack compared to fruits of different sizes.

It is known that apples usually produce more flowers than normal. Flower buds multiply so much that the tree cannot provide them with enough nutrients. As a result, many young fruits fall off. Even then, the fruits become small as a result of overhanging. Due to the abundance of flowers, buds and fruits, the tree is exhausted and cannot form flower buds for the next year's harvest. Excessive production of fruits in this year stops the growth of branches and causes periodicity, swinging feature in the fruiting of the apple tree (fruiting between the years).

It is known that stunting occurs as a result of a disproportion between the growth process and crop load [1].

To avoid the above unpleasant situation, gardeners remove flowers and flower buds or moderate the yield of trees.

Research methodology. Researches were carried out in accordance with the current scientific methodology in an apple orchard established in 2001 on an area of 1.1 hectares in Kuva District, Fergana Region, on a low-fertility, stone-gravel land, 600 meters above sea level [2]. Weld tag MM-106, variety - Starkrimson, planting scheme - 6x2 m. Fruit trees were fed with two types of medium (nitrogen 200, phosphorus 100, potassium 45 kg) and high (nitrogen 250, phosphorus 130, potassium 60 kg) background.

In our studies, apple thinning was continued until 6 weeks after the opening of the central flower in the inflorescence. 1/2 of the total flower buds and small fruits (up to 25 mm) are removed, and the largest, quality fruits are left. This ensures that each fruit has thirty leaves.

Research results. In our studies, fruit yield was higher in non-stemmed trees compared to those that were stained. For example, the productivity of 1 hectare was 320.2 centners per hectare of the average food background, while the yield was 297.7 centners when the fruit was pruned, or the productivity decreased by 22.5 centners due to thinning (Table 1).

In the background of high nutrition, the above law was preserved, in the case of uncultivated land, 334 quintals were harvested per hectare, but as a result of culling, the yield decreased by 20 quintals and amounted to 314 quintals. So, in a fully harvested, mature apple orchard, the increase in nutrients (nitrogen by 50 kg, phosphorus by 30 kg, potassium by 15 kg) increased the yield of apples, while pruning led to a decrease in the total yield in both nutrients.

Table 1. The impact of apple picking on yield, quality and productivity (2016-2017, average)

№	Experiment veraity	fertilizer rate			yield, ts/ha	commodity level, percentage		fruit heavy	1kg retail price	Income, thousand soum	price thousand soum	Net price thousand soum	profibitality, percentage
		N	P_2O_5	K_2O		comm odity	Non-commodity						
	Starkrimson variety												
1	Non-touched	200	100	45	320,2	65	35	149,5	800	25616	9898	15718	159
2		250	130	60	334	67	33	154	800	26720	10198	16552	162
3	touched	200	100	45	297,7	93,5	6,5	217,5	1000	29770	9998	19772	198
4		250	130	60	314	95	5	232	1000	31400	10298	21102	205

As mentioned above, the taming event led to the improvement of fruit quality, and in untamed conditions, the share of high-quality, exportable, commodity-level fruit decreased. In particular,

the quality of the fruit was 65-67% in the trees that were not pruned, and the quality of the fruit was improved due to the pruning, and the quality of the fruit reached 93.5-95%. Therefore, the share of low-quality, unprofitable fruit was 33-35 percent or more than a third of the grown crop in the case of no pruning.

The percentage of low-quality, unprofitable fruits in the apple trees where the pruning event was held was 5-6.5 percent.

Although the productivity and weight of fruits increased with the increase of the nutrient background, the product level did not increase significantly (1.5-2 percent). So, the quantitative changes in the nutritional background did not lead to significant qualitative changes.

In unthinned trees, the weight of one piece of fruit reached 149.5 grams in the average food background, and 154 grams in the high background, but the marketability did not increase significantly (1.5-2 percent). The weight of one fruit in the trees without thinning was 149.5 grams in the average food background and 154 grams in the high background.

In the case of 2017, the retail price of 1 kg of fruit increased from 800 to 1,000 soums due to thinning of the fruit, the income from fruit sales increased from 25,616-26,720 thousand soums for unpeeled fruits and 29,770-31,400 thousand soums for dressed fruits.

Production costs or the cost of 1 hectare of garden area increased by 100,000 soums on average due to thinning, and 300,000 soums due to the increase in the rate of fertilizers, but this important event proved to be economically effective due to a significant increase in income. For example, 15,718,000 soums of net profit was obtained from each hectare of the unstemmed trees on the average basis of fertilizer, while the net profit due to the thinning increased to 19,772,000 soums. Due to the increase in the amount of fertilizer, the net profit in the unripened fruit was 16552 thousand soums, and in the account of the ripening it was 21102 thousand soums. Due to this, the yield reached 159-162 percent in unripened fruits, and 198-205 percent after ripening, respectively.

The results of the economic analysis show that pruning has a positive effect on the use of mineral fertilizers by fruit trees. So, the level of profitability increased by 39% in medium food background and 43% in high background due to fruit thinning.

In conclusion, it is economically effective to thin out the fruits of all autumn and winter apple varieties that have the characteristic of shaking.

Implementation of fruit thinning and pruning in all autumn and winter apple orchards as an important agrotechnical measure that positively affects the quality, size, color of the fruit, the prevention of drooping, the uniform distribution of the fruit along the tree branches, less disease, and the effective use of nutrients is recommended.

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