

## THE EFFECT OF PURIFICATION OF SWEET CHERRY VARIETIES IN PROTECTED LAND ON FRUIT QUALITY.

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**Abstract:** *The article presents data on the effect of 30, 50, and 70% pruning of sweet cherry varieties grown in protected areas on fruit quality (fruit weight, size, dry matter, and acidity).*

**Keywords:** *Protected area, sweet cherry, variety, pruning, flower bud, flower, fruit, fruit weight, caliber, dry matter and acidity.*

**Introduction.** In recent years, global climate change has increased the efficiency of sweet cherry cultivation around the world, as well as research aimed at growing them in different climatic environments, allowing for the cultivation of cherries in open and protected areas with high production quality and early ripening of the fruit.

Fruit trees usually flower profusely, not all of which can turn into fruit. The number of flowers on a tree is very large, depending on the type and size of the tree, there can be up to 50,000 flowers per sweet cherry tree and up to 20,000 flowers per peach tree. In pome fruit species, a good yield is obtained when 7% of the flowers set fruit to obtain a good quality harvest. Stone fruit species require a high level of pollination. In peach, a sufficient yield is obtained when 25% of the flowers set fruit, while cherries produce a good yield with a fruiting rate of 25–40% [1,3]

a sweet cherry tree has a large number of fruit or flower buds, early pruning can significantly increase the value of the crop. However, thinning to regulate the size and increase the value of the crop of some fruit species and varieties is carried out only in high-yielding years, that is, when the number of buds or fruit buds is very large. With low yields, the fruit will naturally be larger and of better quality. In addition, for pome fruits, pruning of flower buds has been recommended by scientists to prevent the breakage of branches with excessive fruit [2,4].

**Research Methods.** The conducted researches were conducted on the basis of «Программа и методика сортоизучения плодовых, ягодных и орехоплодных культур» (Орёл 1999), «Методы биохимического исследования растений» (1987) methods for determining the biochemical composition of sweet cherry fruits.

**Research results.** The results of our study on the pruning of sweet cherry varieties in protected areas show that as a result of pruning, the main quality indicators of sweet

cherry fruits (fruit weight, hummingbird, dry matter content, sugar content, and acidity) changed significantly, showing positive results compared to the control option.

In the control (unpruned) variant of the babor variety, the fruit weight reached only 7.1 g, and the fruits were relatively small. Their diameter was 25.0 mm, and the dry matter was 15.1%, the sugar content was 15.1%, and the acidity was 0.61%. When 30% of the flowers were pruned, the fruits became much larger, reaching an average weight of 8.9 g. This figure was 125.4% compared to the control. The fruit diameter expanded to 26.8 mm, the dry matter increased to 15.6%, the sugar content reached 15.4%, and the acidity decreased to 0.53%. When 50% of the flowers were pruned, the fruits became even larger, reaching an average weight of 10.1 g, which is 142.3% compared to the control . also

**Table 1.**

The effect of thinning sweet cherry blossoms on fruit quality.

Varieties name	Options	Weight of one fruit, g	Regarding control	A single fruit hummingbird, mm	Dry matter,%	Sugar content,%	Acidity,%
Bahor	Control, thinning	7.1	100.0	25.0	15.1	15.1	0.61
	Thinning 30%	8.9	125.4	26.8	15.6	15.4	0.53
	Thinning 50%	10.1	142.3	28.0	17.5	16.8	0.47
	Thinning 70%	10.8	152.1	28.3	18.9	18.1	0.44
Royal tioga	Unthinning	8.5	119.7	27.4	15.9	15.3	0.53
	Thinning 30%	9.6	135.2	27.8	16.6	15.9	0.51
	Thinning 50%	10.8	152.1	28.3	18.9	18.1	0.44
	Thinning 70%	11.1	156.3	28.8	19.2	18.4	0.43

increased sharply, reaching 28.0 mm. At the same time, the dry matter content increased by 17.5%, the sugar content by 16.8%, and the acidity decreased to 0.47%. The highest result was obtained when 70% of the flowers were pruned. The fruit weight

reached 10.8 g, which was 152.1% compared to the control. The hummingbird also increased to 28.3 mm. It was also found that the dry matter was 18.9%, the sugar content was 18.1%, and the acidity decreased to 0.44%. This indicates that high pruning of flowers serves to further improve the quality of the fruit.

Similar positive changes were observed in the Royal Tioga variety. In our unpruned variant, the fruit weight was 8.5 g, the hummingbird was 27.4 mm, the dry matter was 15.9%, the sugar content was 15.3%, and the acidity was 0.53%. As a result of pruning 30% of the flowers, the fruit weight increased by 9.6 g, that is, by 135.2% compared to the control. The hummingbird was 27.8 mm, the dry matter increased by 16.6%, the sugar content by 15.9%, and the acidity decreased to 0.51%. In the variant with 50% of the flowers, the fruit weight increased even more, reaching 10.8 g (152.1%). The hummingbird fruit was 28.3 mm. Dry matter increased to 18.9%, sugar content to 18.1%, and acidity decreased to 0.44%. Good results were also observed when 70% of the flowers were cut. The weight of one fruit was 11.1 g, which was 156.3% compared to the control. The hummingbird reached 28.8 mm. At the same time, dry matter increased to 19.2%, sugar content to 18.4%, and acidity decreased to 0.43% (see Table 1).

**Conclusion.** The results of the study show that the most favorable conditions for the development of sweet cherry varieties in protected areas were 50% pruning of flowers. In the “Bahor” variety, the average fruit weight was 10.1 g, which is 142.3% compared to the control, the hummingbird diameter was 28.0 mm, the dry matter content was 17.5%, the sugar content was 16.8%, and the acidity was 0.47%. In the “Royal Tioga” variety, the fruit weight was 10.8 g (152.1% compared to the control), the hummingbird diameter was 28.3 mm, the dry matter content was 18.9%, the sugar content was 18.1%, and the acidity was 0.44%. However, lower indicators were observed for pruning of flower buds.

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