

Dependence of the Transition of the Phenological Phases of the Wine-Rangdor and Oltinday Varieties of Grapes on the Load of the Vine Bush

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Abstract: In this article, the phenological phases of the wine grape varieties: Oltinday and Rangdor varieties were observed, and the effect of vine bush loading on the phenophases of budding, branch growth, and flowering in these varieties was studied through field observations.

Keywords: phase, crowding, rangdor, oltinday, shingle, movement of sap, sugar content, vine variety, flowering, fruit, branch.

Viticulture is one of the most ancient and profitable branches of agriculture in our republic. viticulture as a field of plant science deals with the cultivation of grapes, as a science it develops various methods of managing its growth and development based on scientific theory and advanced experiences in order to obtain a consistent abundant and quality harvest from the vine, and as an educational subject studies them.[4]

Technical varieties of grapes are often called wine varieties, they are mainly used for wine production. Wine grape varieties differ from Khoraki and Kishmishbop varieties by the following characteristics. In particular, in wine-making varieties of grapes, the heads of grapes are light in weight, the heads of grapes are small, they have different shapes and colors, and the shape is often conical. [4] The number of grape heads is large, the cluster is small and close to each other. The sugar content and acidity of the wine will be high. musallas, champagne, strong and dessert musallas are prepared from such varieties. wintering buds are formed in late May-June in wine grape varieties, in late July in local khoraki and kishmishbop varieties. In the central wintering buds of khoraki and kishmishbop varieties, inflorescences are formed later than those of wine-growing varieties.[7]

The study of the biological characteristics of grape branches shows that the level of bud protrusion and branch growth in most cases depends on the expression of the polarity characteristic [8].

Shoots located further from the base of the crop branches have the characteristic of fast growth. The climatic conditions observed throughout the year, the long and short cutting of the crop branches, the position of the buds in the dry connection also affect the level of growth of the buds. many researchers note that some buds on the branch do not turn blue in the spring.[9]

According to A. M. Negrul and Ye. I. Mokhova, who have dealt with issues of transition of vine growth phases at different times, in order to know the biological characteristics of the varieties, their requirements for the environment, each viticultural. It will be necessary to carry out phenological observations. [3]

Materials and methods. Phenological observations Kh.CH. Buriyev and others, M.A. In all variants of the Lazarevsky method, the beginning and end of the phenophase, i.e. The growth of buds, flowering, ripening of fruits, ripening of branches, and the beginning and end of the phason line in vine branches are recorded. The growth of the branches was determined by counting the branches on the bush every year after hazonrez. [1,2]

Results and discussion. In the example of the comparison of the percentage of buds that have grown when the load of the vine bush is low, it can be observed that the percentage of buds that have grown well in the previous year is high. , slow development is observed. such a situation is expressed sufficiently when medium and high loads are given to varieties in practice, and weakly when they are given less loads. [6]

The analyzes showed that the Rangdor variety of grapes had the highest bud bulge - 68.6% when the load of buds was 80 pieces. when the load was increased by 50%, the number of bruised shoots decreased by 6.3%, and when the load was increased by 100%, it decreased by 11.1%. the growth of branches in buds was the most - 16% when the load of buds was 160. the least number of shoots - 8.3% was recorded when the load of shoots was 80. when the load was 120 shoots, the growth of branches took an intermediate place and was equal to 13.2%

When the load on the bush was increased, the tendency of bud growth to decrease was also observed in the Oltinday variety.

When the load of buds of Oltinday variety was left at 80 pieces, the swelling of buds was the most - 69.6%. when the load was increased to 50%, the number of bruised shoots decreased by 1.4%, and when the load was increased to 100%, it decreased by 10.1%.

The growth of branches in buds was the highest - 16.7% when the load of buds was 160. the least number of shoots - 8.2% was determined when the load of shoots was 80. When the stem load was 120 buds, the growth of branches took an intermediate place and was equal to 14.8%.

Table 1. Transition of phenological phases at different loads of the bush (2022-2023)

Variety	stem load, bud	Phenophases					
		sap action		swelling of buds		bloom	
		beginning	ending	beginning	ending	beginning	t ending
Rangdor	80	2/ III	15/III	29/III	20/1V	6/V	13/V
	120 (st)	2/ III	15/III	29/III	20/1V	6/V	15/V
	160	2/ III	12/III	29/III	29/1V	6/V	18/V
Oltinday	80	5/III	1/1V	1/1V	29/1V	11/1V	19/V
	120 (st)	5/III	1/1V	1/1V	29/1V	11/1V	19/V
	160	5/III	6/1V	1/1V	29/1V	11/1V	23/V

The analysis of Table 1 shows that the growth of shoots increases sharply from the bottom of the branches to the top. A high percentage of shoot growth is observed from the third and subsequent shoots. Its peculiarity is that not all shoots grow fully in the existing favorable conditions. The growth of buds indicates that it depends not only on the conditions during their formation, but also on the biological characteristics of each variety.

Studies show that the percentage of developing shoots decreases as a rule as the stem load increases.

In the study of the effect of different loads of vine bushes on the productivity and growth of one-year branches, the transition of phenophases, the opening of buds, flowering, the formation and ripening of the crop, and the seasonal periods were determined. the beginning of the movement of sap on vine bushes was on March 15-18, and the swelling of buds was on March 27-30.

Observations have shown that vine bush load does not affect the start of sap movement, swelling of buds and duration of flowering phases. With the exception of the end of the flowering phase, a

slight difference in the duration of the completion of this phase was found depending on the stem load. therefore, in the colorful variety, when the load is 80 buds, the end of flowering is recorded on the 13th day, when the load is increased by 50%, this phase is delayed by 2 days, and when the load is increased by 100%, it is found that it is delayed by 5 days.

A slightly different situation was noted in the Oltinday variety of grapes. The end of the flowering phase was recorded both when the load was 80 buds and when it was 120 buds - on the 19th. Only when the load was increased to 100, a delay of this phase by 4 days (23/v) was found (Table 1).

At the same time, it should be noted that due to the excessive load on the vine, the technical maturity of the bunches of grapes is delayed.

Conclusions.

1. Experiments have shown that the ripening period of wine grapes depends not only on the load of buds, but also on the cutting length of the stem. therefore, it was observed that the longer the branches were cut, the longer the ripening of the crop was delayed.
2. The information given above shows that in the wine-Rangdor variety of grapes, when the branches are cut to a short and medium length, the ripening of the crop was recorded in almost the same period. It was found that when the branches are cut long, the ripening of the crop is delayed by 5-6 days.

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