

Studying the process of phenological monitoring of late varieties of plums grown in the climatic conditions of Namangan region

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Abstract. In this article, the study and analysis of late varieties of plum grown by farmers and private entrepreneurs in the Yangikurgan district of Namangan region, the area where plum orchards are located, the height above sea level, during the phenological observation of Plum (Burton) variety's phenological observations show that from 10.10.2022 to 10.10.2023 budding, the beginning of vegetation, the beginning of flowering, the end of flowering, the end of branch growth, the beginning and end of autumn, the periods of watering the field, information about pesticide spraying dates, herbicide spraying dates, number, biological control.

1 Introduction

According to the geographical location and climatic conditions of the Yangikurgan region, the Namangan region is one of the leading areas of our republic for the cultivation of plums. According to statistical data, plum orchards today occupy a leading position in terms of volume and area of fruits grown in our republic. Of the 274.8 thousand hectares of garden areas in Uzbekistan, 128.5 thousand hectares are occupied by seed orchards. Thus, 11.2 percent are plum orchards. About 2.5% of orchards in this country are plums. The widespread use of plum trees is explained by their adaptability to various soil and climatic conditions, durability, productivity, water resistance for many years, usefulness of the fruit and commercial value as a marketable product [2].

According to the decision of the President of the Republic of Uzbekistan dated October 23, 2019 No. PF-5853 “On approval of the Agricultural Development Strategy of the Republic of Uzbekistan for 2020-2030” and in the decisions of Uzbekistan the Resolution of the President of the Republic dated 01.11.2021 No. PQ-4941 “On measures for the development of horticulture and viticulture in Kosonsoy, Chortok and Yangikurgan districts of the Namangan region”, measures were determined to further improve the fruit and vegetable industry of viticulture [1-5].

It is known that cultivated plum fruits can be divided into three seasons depending on the growing period: early-ripening, mid- and late-ripening varieties. Early ripening varieties can be supplied to the domestic market or exported fresh, depending on their structure and

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chemical composition. Mid-ripening varieties are mainly varieties intended for fresh sale on the domestic market, for export or deep processing, while late plum varieties are mainly based on deep processing and delivery to further consumers through storage.

It is worth noting that in order to provide the population with freshly cut (red) fruits during the season, most varieties of plums grown in our republic belong to late-ripening varieties. Deep processing is one of the optimal ways to deliver late-ripening plum varieties to consumers.

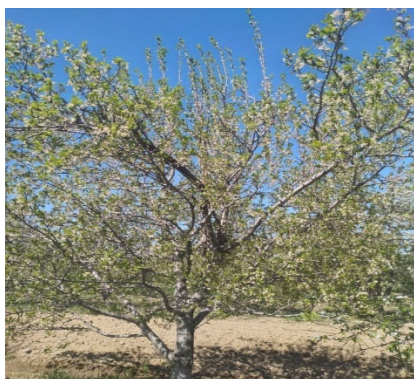
An analysis of the studied literature and scientific articles shows that the results of scientific research related to the collection processes and phenological observations of plum fruits grown in our republic are currently insufficient.

2 Methods

One of the objectives of our research is related to the study and analysis of plum varieties grown in the Yangikurgan district of the Namangan region, which has extensive experience in growing plum fruits in our Republic [6-11].

3 Results and discussion

We visited the Nazirjon Ilkhomjon Arabboy and Lukhmanov Khakimkhan farms located in this area and studied the existing plum orchards (Figure 1)



Plum orchards in the peasant farm named after "Nazirjon Ilkhomjon Arabboy" KFG "Navruzobot", Yangikurgan district.



Plum orchards in the peasant farm named after "Lukhmonov Khakimkhan" KFG "Zarbdor", KFG Yangikurgan.

Fig. 1. Photos of the Plum Orchard Study.

As you can see from the photos above, during our research it turned out that the plum orchards were still in a dormant period. At the same time, this region has its own climatic conditions. According to the studied data, the plum varieties grown in the Yangikurgan district of the Namangan region and their condition are shown in Table 1.

Table 1. Plum varieties grown in Yangikurgan district of Namangan region and their condition

Plum orchards of the farm "Nazirjon Ilkhomjon Arabboy" "Navruzobot" QFY					
	Plum varieties	" Berton "	" Samarkand Prunes "	"Yarhi"	" Gigantic "
1	Height of the area above sea level m.	981			
2	Area of existing plum orchards, hectares	3	0.2	0.5	0.8
3	Productivity of plum orchards, ton	26	8	10	18
Condition of plum trees					
4	Diseases	Not sick	Not sick	Not sick	Not sick
5	Given the shape	Form not provided	The form is given	The form is given	The form is given
6	Status of plum varieties	Harvesting	Harvesting	Harvesting	Harvesting
Plum orchards of the state farm "Zarbdor" KFU "Lukhmanov Khakimkhan"					
	Plum varieties	" Berton "	" Samarkand Prunes "	"Yarhi"	" Gigantic "
1	Height of the area above sea level m.	932			
2	Area of existing plum orchards, hectares	5	0.6	0.5	0.6
3	Productivity of plum orchards, ton	25	8	10	17
4	Diseases	Not sick	Not sick	Not sick	Not sick
5	Given the shape	Form not provided	The form is given	The form is given	The form is given
6	Status of plum varieties	Harvesting	Harvesting	Harvesting	Harvesting

According to the information presented in the table, the area on which the plum orchards of the Nazirjon Ilkhomjon Arabboy farm of the Navruzobot farm of Yangikurgan district are located is 981 meters above sea level. plums - from 4 to 6 hectares, yield - 8-25 tons per hectare, it was established that the trees are not sick, are in good shape, all varieties of plums are in the harvest period [12-13].

In addition, to our question about the year-round weather and climatic conditions of plum varieties in a given area, the process of obtaining high-quality plum fruits in various vagaries of nature in May and June in recent years, specialists from farming and gardening answered that it would be difficult.

Our second object of study in the Yangikurgan region is the Zarbdor farm of the Lukhmonov Khakimkhan KFU, the location of this site is at an altitude of 932 meters above sea level, and from (Figure 1) it is clear that the air temperature in this area is warmer, and the state of the above-mentioned plums was considered dormant, and all the varieties needed for study were available. It was noted above that all plum varieties chosen as the object of our scientific research are available in the climatic conditions of the Yangikurgan district of the Namangan region.

Table 2. The result of phenological observations of the studied plum variety (Burton) (2023).

Name of observations	Day, month, year					
	10%	30%	50%	80%	100%	
Recording buds - beginning of the growing season	22.03	28.03	2.04	8.04		-

Beginning of flowering	9.04	12.04	17.04	21.04	23.04	-	-	-	-
End of flowering	24.04	-	29.04	-	3.05	-	-	-	-
End of shoot growth	12.05		6.08		9.09	-	-	-	-
The beginning and end of a sequence of phases.	30.09	2.10	18.11	23.11	30.11	-	-	-	-
Periods of field irrigation	1	2	3	4	5	6	7	8	9
	26.04	11.05	22.05	30.05	10.06	22.06	26.06	10.07	19.07
Terms of use of pesticides	22.04	-	-	-	26.11	-	-	-	-
Conflict (if any)	-	-	-	-	-	-	-	-	-
Herbicide spraying time, quantity.	1	2	3	4	5				
Name of chemicals	ISO	-	-	-	fast , nitroph en	-	-	-	-
That there was biological control		-	-	-	-	-	-	-	-
How much and what kind of organic fertilizers do you give?	15.03	20.06	10.07	-	-	-	-	-	-
Name of used fertilizers	Organo mineral 1000	Organo mineral 1000	Organo mineral 1000	-	-	-	-	-	-

In Table 2, phenological observations of the plum variety (Burton) showed that from 10.10.2022 to 10.10.2023, budding occurs, the beginning of the growing season, the beginning of flowering, the end of flowering, the end of branch growth, the beginning. Autumn and full periods of field irrigation, timing of spraying with pesticides were studied , timing of spraying with herbicides, quantity, biological control, as well as how much and what kind of organic fertilizers were given, received information about in what period, in what quantity and what experiments on use were carried out.

4 Conclusion

Based on the results of the research, the plum varieties chosen for our research are grown on sufficient areas in the Yangikurgan district of the Namangan region, the correct implementation of measures for growing plum fruits in the region during the growing period and after harvesting is carried out. Suitability of the peasant farm named after "Zarbodor" KFU "Lukhmanov Khakimkhan" for Yangikurgan region. Among the existing plum varieties, the Burton variety predominates. Budding, the beginning of the growing season, the beginning of flowering, the end of flowering, the end of branch growth, the beginning and end of flowering, periods of irrigation, periods of spraying with pesticides, periods of spraying with

herbicides, numbers, biological control, determined, how significantly it has decreased. We believe that the scientific basis for the area thus selected is suitable for research.

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