

STUDY ON ASSESSMENT OF PRODUCTIVITY OF GOOSEBERRY VARIETY

STUDIU REFERITOR LA APRECIEREA PRODUCTIVITĂȚII UNOR SOIURI DE AGRİȘ

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Abstract. *In the article were presented the results of our investigations during the 2011-2013 about the assessment on productivity of gooseberry variety and fruit quality appreciation of the 10 gooseberry varieties introduced in Republic of Moldova on the new soil and climatic conditions. Research has highlighted the varieties of gooseberries traits in intensive plantation, on which it was established that the average: Mass gooseberry fruit varied between 1.6-2.7g, highest yielding fruit varieties Smena, Colobok, Captivator. Production obtained from a bush ranged from 0.9 kg / bush on variety Zenit and 2.6 kg / bush on variety Colobok.. Gooseberry fruit harvest obtained ranged from 6.2 t / ha on variety Zenit and 20.4 t/ha on variety Captivator. The production proved to be varieties: Colobok, Severnai capitan, Sadko, Captivator.*

Key words: *gooseberry, varieties, productivity, fruits.*

Rezumat. *În lucrare sunt prezentate rezultatele cercetarilor efectuate pe parcursul anilor 2011-2013 cu privire la acumularea substanțelor nutritive și aprecierea calității fructelor la 10 soiuri de agriș introduse în Republica Moldova în condiții noi de sol și climă. Cercetărilor efectuate au evidențiat trasaturile caracteristice soiurilor introduse de agriș într-o plantație intensivă, în baza cărora s-a stabilit că media: masei fructelor de agriș a variat între 1,6-2,7g, cele mai mari fructe obținându-se la soiurile Smena, Coloboc, Captivator. Producției obținute de la o tufă a variat între 0,9 kg/tufă la soiul Zenit și 2,6 kg/tufă la soiul Coloboc. Recoltei de fructe de agriș obținută a variat între 6,2 t/ha la soiul Zenit și 20,4 t/ha la soiul Captivator. Cele mai productive s-au dovedit a fi soiurile: Coloboc, Severnii capitan, Sadco, Captivator.*

Cuvinte cheie: *agriș, soiuri, productivitate, masa fructelor.*

INTRODUCTION

The fruit size, although it is a characteristic trait of the variety, varies greatly depending on the years and largely depends on the age, condition of plants and the climatic factors during the growing season.

This is why to obtain a high quality crop in plantations which are aging, rejuvenation of the plants is required by the appropriate agrotechnical measures (Franciuc, 1975). The average harvest of gooseberries in Russia is 15.9 q / ha, and in some regions (North West and Centre) it is more increased (2.29 and 2.56 t / ha). In the region of Lipetsk, the harvest varies from 3.0-4.5 to 25.0 t / ha, sometimes even more (Luchina, 1975). Gooseberries enter early in the bearing

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phase and are the most productive among the fruit trees. Gooseberries's harvest, by variety, can reach up to 10-20 t / ha under observance of the maintenance (Mladin and Mladin, 1992). Productivity of gooseberry bushes reaches 1.5-2.0 kg in the 4-5 year after planting, 3.0 to 6.0 kg / bush in the coming years. It can get 5-8 t / ha of fruit, and sometimes depending on the variety - 12 to 15 t / ha (Mihăiescu, 1977). After the result of the study conducted in the Republic of Belarus, it was established that the varieties of gooseberries Donetskii krupnoplodnai, Donetskii pervenets, Slivovai, Shcedrai, Krepash can reach fruit weight according to the following values: 3.8 g, 3.5 g, 3.6 g, 3.4 g 3.6 g (Zazulina, 2004).

MATERIAL AND METHOD

The research conducted during the years 2011 - 2013 on the varieties of gooseberries, studied in the Republic of Moldova, have allowed their appreciation after the amount of production and fruit weight, chunky plantations, involving 6667 plants per hectare, according to the methods established for fruit trees.

Studied varieties was: Colobok, Sadko, Severnai capitan, Smena, Slivovai, Captivator, Rezistent de Cluj, Zenit, Somesh, Grushenka. Gooseberry plantation was founded in 2004 year, by planting distance 1.5x1.0 m, on irrigated land.

RESULTS AND DISCUSSIONS

The research conducted at gooseberries species were assessed the varieties included in the study, after the obtained production, which allows emphasizing specific qualities, fruit weight, wich stand out, and the results are shown in table 1. The weight of gooseberries fruits can range from 1.0 g up to 20.0 g. The berries are graded in the following categories: small - 1.0-1.2 g; medium - 1.6-2.0 g; large - 2.1 to 4.0 g (Zaletilo, 1975).

According to the obtained results depending on the climatic and technological conditions, we can say that the highest value for the average mass fruit obtained was highlighted in 2011, which ranged from 1.7 to 3.3 g; the biggest fruits for the varieties was Sadko, Kaptivator.

Table 1

Weight of fruits for the studied gooseberry varieties, g

Variety	2011	2012	2013	Average
1.Colobok	2.9	2.7	2.3	2.6
2.Sadko	3.3	2.3	2.4	2.7
3. Severnai capitan	1.8	2.5	1.0	1.8
4.Smena	2.9	2.5	2.3	2.6
5.Captivator	3.0	1.0	3.0	2.3
6.Rezistent de Cluj	2.0	1.2	2.4	1.9
7.Zenit	1.7	1.7	1.4	1.6
8.Somesş	1.9	1.3	1.6	1.6
9.Grushenka	2.2	1.7	1.5	1.8
Limit of variation	1.7-3.3	1.0-2.7	1.0-3.0	1.6-2.7

The average weight of fruits produced in 2012 ranged from 1.0 to 2.7 g, the largest fruit for the varieties being Smena, Coloboc and the average weight of fruits produced in 2013 showed higher values than in 2012 and ranged from 1.0-3.0 g, the largest fruit for the varieties being Kaptivator, Sadko, Resistent de Cluj.

The average weight of gooseberry fruits during the study years 2011-2013 varied between 1.6-2.7 g, the highest yielding fruit for the varieties Smena, Colobok, Captivator.

The technology of gooseberries's cultivation directly influence the development of the plants, vigor bushes. The more bushes are well developed, vigorous, with a healthy leaf area, the greater is the harvest from bush. The research conducted on the yield obtained from a gooseberries bush for the varieties during the years 2011-2013 studied is listed in table 2.

Table 2

The production of fruits for the studied gooseberry varieties, kg /shrub

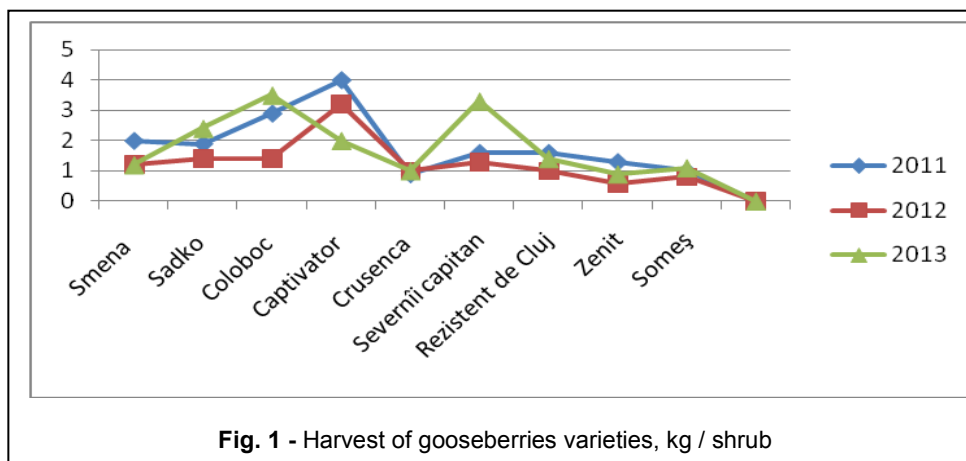
Variety	2011	2012	2013	Average
Smena	2.0	1.2	1.2	1.5
Sadko	1.9	1.4	2.4	1.9
Colobok	2.9	1.4	3.5	2.6
Captivator	4.0	3.2	2.0	2.0
Grushenka	0.9	1.0	1.0	2.0
Severnai capitan	1.6	1.3	3.3	2.1
Rezistent de Cluj	1.6	1.0	1.4	1.3
Zenit	1.3	0.6	0.9	0.9
Someș	1.0	0.8	1.1	1.0
Limit of variation	1.0-4.0	0.6-3.2	0.9-3.5	0.9-2.6

The productivity of gooseberries varieties depends heavily on the climatic conditions of the year, the ability to adapt to new conditions of cultivation and crop maintenance, of plantation the age etc.

The average productivity of a gooseberries bushes reach 2.0-3.0 kg / shrub (Hoza, 2000).

Varieties studied showed different qualities and quantity of the yield obtained from a bush and ranged from 0.6 to 4.0 kg / bush. The average crop from a bush was the largest in 2011, and ranged from 1.0 to 4.0 kg / bush. The average yield obtained from a bush during the study period varied between 0.9 kg / bush for the Zenit variety and 2.6 kg / bush for the variety Colobok.

Studied gooseberry varieties were influenced differently in each year of the climate established (fig. 1, fig. 2).



Data presented in figure 1 shows the variation in the amount of harvest bush varieties.

The productivity for the varieties of gooseberries is influenced by the climatic conditions of the year, the ability to adapt to new conditions of cultivation, maintenance mode and of plantation's age etc.

The varieties of gooseberries with a harvest of 4.0-6.0 t / ha are considered productive, those of 2.0-4.0 t / ha - average productive, and those of 2.0 t / ha - low productivity (Zaletilo, 1975).

According to research conducted on irrigated land from studying the varieties Donetskii krupnoplodnai and Donetskii pervenets, they gave the best results from the 8-9 year after planting, when we obtained maximum yields of 16.4 to 16.5 t / ha (Sava, 2003).

The established results in the research conducted on irrigated land on the quantity of berries obtained from the varieties studied were included in table 3.

Table 3

The production of gooseberry fruits for the studied varieties, t / ha

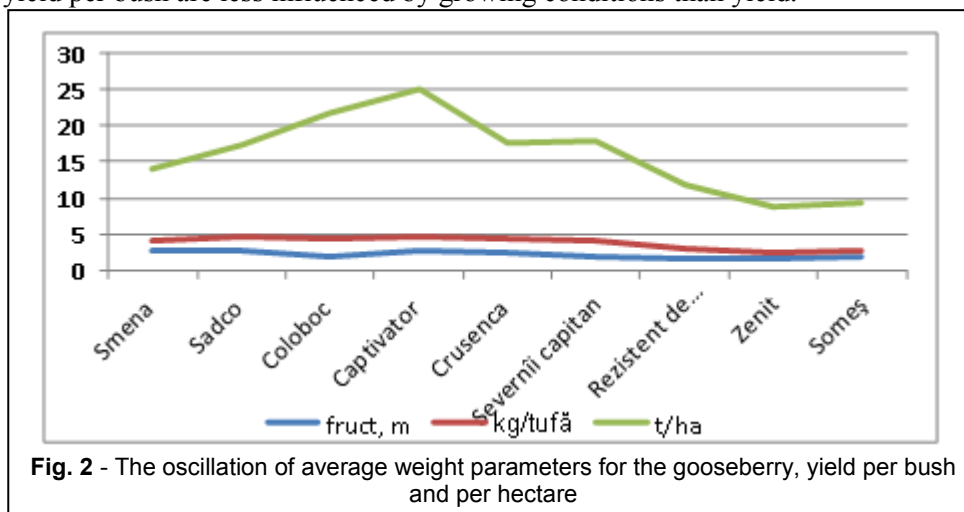
Variety	Years			Average
	2011	2012	2013	
Smena	13,3	8,0	8,0	9,8
Sadko	12,7	9,3	16,0	12,7
Colobok	19,3	9,3	23,3	17,3
Captivator	26,7	21,3	13,3	20,4
Grushenka	6,0	6,7	6,7	13,4
Severnai capitan	10,7	8,7	22,0	13,8
Rezistent de Cluj	10,7	6,7	9,3	8,9
Zenit	8,7	4,0	6,0	6,2
Someș	6,7	5,3	7,3	6,4
Limit of variation	6,0-26,7	4,0-21,3	6,0-23,3	6,2-20,4

The average gooseberry fruits harvest obtained in 2011 year varied between 6.0 t / ha on the variety Smena and 26.7 t / ha on the variety Captivator, in 2012 year from 4.0 to 21,3t / ha, in 2013 year the harvest was higher than in 2012 and ranged from 6.0 to 23.3 t / ha.

The average gooseberry fruits harvest obtained during the study period varied between 6.2 to 20.4 t / ha.

The average gooseberry fruits harvest, obtained during the years 2011-2013, varied between 6.2 t / ha on the variety Zenit, and 20.4 t / ha on the variety Captivator.

The data presented in Figure 2 allow us to conclude that fruit weight and yield per bush are less influenced by growing conditions than yield.



CONCLUSIONS

1. The assessment of gooseberries varieties after fruit production, their quality, allows the establishment of the dependence of climatic conditions, of the formation period of the crop, the maintenance conditions of the plantation etc. As a result of the research conducted on the capabilities that have been shown the varieties of gooseberries, quantity of production, fruit size in intensive plantation, from which it attested the high quality of the fruit, it was established that the average of:

- gooseberry fruits weight varied between 1,6-2,7g, the biggest yielding fruits for the studied varieties were Smena, Colobok, Captivator.

- obtained yield from a bush varied between 0.9 kg / bush for the variety Zenit, and 2.6 kg / bush for the variety Colobok.

- gooseberry fruits harvest obtained varied between 6.2 t / ha for the variety Zenit, and 20.4 t / ha for the variety Captivator.

4. The most productive proved to be the varieties: Colobok, Severnai capitán, Sadko, Captivator.

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