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THE BEHAVIOUR OF SOME HAZELNUT VARIETIES IN THE SOUTH AREA OF TIMIS COUNTY IN TERMS OF EXTERNAL FEATURES OF THE FRUITS

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Abstract

In our country the hazelnut is spread in the hill areas especially in Vâlcea, Gorj, Maramureș, Hunedoara counties. In cultures may be found only in some fruit growing resorts like Vâlcea, Fălticeni, Târgu Jiu. The Romanian hazelnut production it is generated mostly from the spontaneous flora where in can be detected valuable biotypes, but also from the newly established cultures with imported varieties. Nevertheless, the Banat area is disposing by a large germplasm on this important tree species, germplasm which deserve to be studied in order to identify some precious genotypes which may be isolated and multiplicated, thus contributing to improvement of Corylus avellana variety, which unfortunately in Romania is rather limited. The present work which is a part of a larger study on local hazelnut germplasm, is following some aspects of external features of the fruits: weight of the fruit, weight of the kernel, % kernel, large diameter of the fruit, small diameter of the fruit, fruit height. The studied biotypes were found in the peoples gardens from Ciacova, Ghilad, Jebel and Pădureni. In terms of the fruit weight were evidenced Jebel and Ciacova biotypes with 1.83 g respectively 1.73 g versus the experiment average with a value of 1.66 g. However, the kernel percentage on the above biotypes was smaller than the experiment average in both cases, on this parameter were distinguished the other two biotypes respectively Ghilad and Pădureni on which the percent kernel has exceeded 50%, a fact to be considered.

Key words: *hazelnut varieties, diameters and height of fruit, weight, per cent kernel*

INTRODUCTION

Hazelnut it is a quite important tree species for its fruits quality, decorative value of some of the species, stabilize and consolidate the lands, minimizing erosion.

Hazelnuts are rich in nutritional substances and are used as such, or in sweets and pharmaceutical industry. Hazelnut oil it is appreciated in painting, varnishing and cosmetics industry (Iordănescu, 2011).

Due to their high nutrition value and rich contribution in vitamins B (B_1, B_2, B_3, B_5), nicotinamide and especially vitamin E (tocopherol), hazelnuts are used in human food as fresh fruits or processed in a multitude of products (cakes, ice-creams, salads, candies, chocolate) (Cociu, 2003).

Hazelnut tree may be found in regions with wet oceanic climate, in bright oak forests, forest margin, or in bushes on the farm roadsides. In our country the hazelnut is spread in the hill areas especially in Vâlcea, Gorj, Maramureș, Hunedoara counties.

Unfortunately is slightly cultivated in Romania except some fruit growing resorts like Vâlcea, Fălticeni, Târgu Jiu, although its quality and economic importance determined it to be cultivated on large surfaces in a lot of countries.

In recent years in the hilly area of Banat were established hazelnut plantations by foreign investors, especially Italians, who have opted for planting Italian varieties, less known in our country.

MATERIAL AND METHOD

Hazelnut biotypes from which samples were collected, were found in the back gardens of people from Ciacova, Ghilad, Jebel and Pădureni, localities situated in the south of

Banat. Each biotype studied was named after the village of origin.

Average samples consisting of 25 fruits were conducted, on which were studied the following aspects: weight of the fruit, weight of the kernel, % kernel, large diameter of the fruit, small diameter of the fruit, fruit height.

Fruits were analyzed in the Fruit Growing Department laboratory of USAMVBT as follows:

- Initially the fruits were weighed with high accuracy balance, calculating the average weight for each biotype followed by husking and kernel weighing and subsequently kernel% calculation
- Large diameter of the fruit, small diameter of the fruit, fruit height were determined using electronic calipers, calculating average values for each biotype.

All the data were statistically processed using variance analysis, as the experiment control being used the varieties average.

RESULTS AND DISCUSSIONS

The obtained results regarding the external features of the hazelnut fruits on the studied biotypes are presented in Table 1, Table 2 and Table 3.

Concerning the large diameter of the fruits, the highest value was registered on Ciacova biotype (1.53cm), the difference to the experiment control being very significant positive. Another value superior to the control was registered on Pădureni biotype, but without registered significations due to the fairy close values.

Values under the experiment control were registered on Jebel and Ghilad biotypes (1.41 respectively 1.42 cm), both being significant negative to the control (Table 1).

Table 1. External features of the fruits on the studied biotypes (large diameter of the fruits)

Variety	Large diameter (cm)	Relative value %	Difference to the control	Significance
Variety average	1.45	100	0	Control
Ciacova	1.53	105.52	0.08	XXX
Ghilad	1.42	97.93	-0.03	0
Jebel	1.41	97.24	-0.04	0
Pădureni	1.47	101.15	0.02	-

DL5% = 0.04 cm DL1% = 0.06 cm DL0,1% = 0.08 cm

Regarding the small diameter of the fruits, highest value was registered on the Ghilad biotype (1.50 cm), followed by Jebel biotype (1.48 cm), both being very positive to the control. The lower value of the small diameter was registered on Pădureni biotype (1.31cm), difference to the control being very significant negative (Table 2).

Table 2. External features of the fruits on the studied biotypes (small diameter of the fruits)

Variety	Small diameter (cm)	Relative value %	Difference to the control	Significance
Variety average	1.42	100	0	Control
Ciacova	1.42	100	0	-
Ghilad	1.50	105.63	0.08	XXX
Jebel	1.48	104.23	0.06	XXX
Pădureni	1.31	9..25	-0.11	000

DL5% = 0.03 cm DL1% = 0.04 cm DL0,1% = 0.05 cm

The highest value of the fruits height was registered on Pădureni biotype (2.2 cm), difference to the control being distinctly significant positive. The other biotypes registered values below the control and they were not statistically insured (Table 3).

Table 3. External features of the fruits on the studied biotypes (height of the fruits)

Variety	Fruit height (cm)	Relative value %	Difference to the control	Significance
Variety average	1.89	100	0	Control
Ciacova	1.77	93.65	-0.12	-
Ghilad	1.80	95.24	-0.09	-
Jebel	1.80	95.24	-0.09	-
Pădureni	2.2	117.46	0.33	XX

DL5% = 0.20 cm DL1% = 0.27 cm DL0,1% = 0.36 cm

Average weight of the fruit, % kernel and weight of the kernel on the studied biotypes are presented in the Table 4, Table 5 and Table 6.
The highest value of fruit weight was registered on Jebel biotype (1.83 g), difference to the experiment control being very significant positive. Another value superior to the control was registered by the Ciacova biotype fruits, difference being distinctly significant positive. The smallest values of the fruits weight were registered on Pădureni biotype (1.55 g) and Ghilad (1.56 g) both being distinctly significant negative to the experiment control (Table 4).

Table 4. Average weight of the fruits for the studied biotypes

Variety	Average weight (g)	Relative value %	Difference to the control	Significance
Variety average	1.66	100	0	Control
Ciacova	1.73	104.22	0.07	XX
Ghilad	1.56	93.98	-0.10	000
Jebel	1.83	11.24	0.17	XXX
Pădureni	1.55	93.17	-0.11	000

DL5% = 0.05 g DL1% = 0.07 g DL0,1% = 0.09 g

The highest kernel percentage was registered on Ghilad biotype (61.17%), difference to the experiment control being very significant positive. Value above 60% kernel was registered also on Pădureni biotype, difference to the experiment control being distinctly significant positive. The lowest kernel percentage was registered on Jebel biotype (43.53%), difference to the experiment control being very significant negative (Table 5, 6).

Table 5. Kernel percentage of the fruits for the studied biotypes

Variety	Kernel percentage %	Relative value %	Difference to the control	Significance
Variety average	54.4	100	0	Control
Ciacova	51.70	95.04	-2.70	-
Ghilad	61.17	112.44	6.77	XXX
Jebel	43.53	80.02	-10.87	000
Pădureni	60.47	111.15	6.07	XX

DL5% = 3.55% DL1% = 4.80% DL0,1% = 6.39%

Table 6. Kernel weight of the fruits for the studied biotypes

Variety	Kernel weight (g)	Relative value %	Difference to the control	Significance
Variety average	0.90	100	0	Control
Ciacova	0.90	100	0	-
Ghilad	0.96	106.67	0.06	-
Jebel	0.80	88.89	-0.10	00
Pădureni	0.95	105.56	0.05	-

DL5% = 0.07 g DL1% = 0.09 g DL0,1% = 0.12 g

CONCLUSION

In terms of the fruit weight were evidenced Jebel and Ciacova biotypes with 1.83 g respectively 1.73 g versus the experiment average with a value of 1.66 g.
However, the kernel percentage on the above biotypes was smaller than the experiment average in both cases, on this parameter were distinguished the other two biotypes respectively Ghilad and Pădureni on which the % kernel has exceeded 50%, a fact to be considered.

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