

NEW PUMPKIN CULTIVARS FOR EDIBLE AND ORNAMENTAL PURPOSES

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Abstract

The fruits obtained from the pumpkin crops from the present range are used for human consumption, fodder or for decorative purposes.

In the past years, the pumpkin range has been diversified with new crops that have higher nourishing value, remarkable decorative features or extremely big fruits. The world weight record for a giant pumpkin fruit is over 600kg.

The giant pumpkins are being used as exhibits, which are very attractive to the public, in specialized fairs and in agricultural exhibitions.

This paper aims to present, for the first time at the national level, the results regarding the effect of some technological measures on the size of the fruits obtained from crops especially created for this purpose and the nourishing value of an edible range of pumpkins that is cultivated in Western Europe and North America.

*In Romania, the range of edible pumpkins includes only some crops from the species *Cucurbita maxima* L and *Cucurbita moschata* Duch. Given these facts, the research regarding the diversification of the edible pumpkin range is highly motivated.*

The present range of ornamental cucurbitaceous is diversified, including mainly ranges or species with very small fruits. Due to this fact, the general public especially appreciates the medium sized pumpkins that are used during some holidays (Halloween) but also the big sized pumpkins, which are used as exhibits at different fairs and exhibitions.

Key words: pumpkin range, very big pumpkin fruits.

Experimental

Elaboration of technological measures that contribute to obtaining very big pumpkin fruits.

Establishing the nourishing value of the fruits obtained from some edible pumpkin ranges that have not been grown before in our country.

For the purpose of carrying out this research, the variants presented in table 1 were studied.

The first two cultivars – Atlantic and Titan – are recommended for defining big fruits, while variants 3 through 7 are recommended for human consumption. Because the “Placintar” (V8) cultivar is being grown in Romania, it has been chosen as the reference crop of the experiment.

The experimental crop was grown near Slatina (Olt district), on two parcels, fertilized differently (table 2). By applying the organic and chemical fertilizers on the parcels, two fertilization levels were obtained: average and excellent.

The technology applied to variants 3 through 8 was similar to the one recommended in Romania for the edible pumpkin crops.

Table 1: Experimental variants - Pumpkin crop Slatina, 2004 – 2006

Experimental variants	Range	Source	The destination of the fruits
1	Atlantic	McKenzie – Canada	Extremely big (huge) fruits for exhibitions; fodder.
2	Titan	Thompson&Morgan Canada	Extremely big (huge) fruits for exhibitions; fodder.
3	Jack’s Lantern	Rennies Seeds - Canada	Decorative for Halloween; food consumption; fodder.
4	Kaempe	Garafarm – Ungaria	Food consumption
5	Tonda Padana	Gusto – Italia	Food consumption
6	Buttercup	McKenzie – Canada	Food consumption
7	Acorn	Victory Garden - Canada	Food consumption
8	Placintar	Romania	Food consumption

Table 2: Agrochemical features of the parcels where the experiment was located – Pumpkin crop Slatina – 2006

Amplasamente		pH	Solubile salt - %	Concentration soluble forme - ppm			
				N – NH ₄ ⁺	N – NO ₃ ⁻	P – PO ₄ ³⁻	K ⁺
1	Before the base fertilization	6,71	0,054	14,25	19,72	11,43	55,00
	After the base fertilization	6,64	0,050	47,50	152,86	28,57	165,00
2	Before the base fertilization	6,73	0,049	14,25	Trail	5,71	20,00
	After the base fertilization	6,69	0,040	23,75	39,45	9,50	50,00

To variants 1 and 2, a specific crop technology, having the following particularities was applied:

- The experimental crop was started on the 6th of May, by planting 30 day old seedlings, produced in plastic pots, having the capacity of 0.5L;
- The individual holes where the seedlings were planted have been set up by deep airing with the hoe of the ploughed autumn soil;
- The planting distances – 1.4 m between the rows and between the plants within the rows have ensured a density of approximately 5000 plants/hectare. The reserved space was approximately 2 m² for each plant.

Systematic measures have been taken to control the weeds, repetitive watering with norms of 5 – 20 L water/patch during periods with no precipitations, systematic phytosanitary treatments and stage fertilizations.

The damaged and late fruits were removed, keeping only the well placed and vigorous fruit.

The retained fruits were put on expanded polystyrene in order to avoid direct contact with the soil.

The fruits were harvested during the second decade of October, after the foliar apparatus of the plants had been destroyed by the low temperatures of the final part of the cropping season

The first observations and determinations had as purpose establishing the physical features and the main biochemical components in the fruits. The results are presented in tables 3 and 4.

Table 3. Biometrical determinations for the huge pumpkin fruits
Slatina – Bucuresti – 2004 – 2006

No.	Range	Sample	Avoirdupois (Kg)			The height of fruit (cm)	The grossness of fruit (cm)
			Altoget her fruit	Pulp	Placentar tissue + seed		
1	Atlantic	1) 2005	50,00	46,850	0,725	36	6,0
		2) 2006	58,00	53,940	0,850	66	7,4
		3) 2006	70,20	56,710	1,000	90	9,6
		4) 2006	44,60	42,400	0,650	34	5,8
2	Titan	1) 2006	16,00	14,350	0,115	25	5,5

Table 4: The main biochemical components - Pumpkin crop
Slatina – Bucuresti – 2004 – 2006

Nr. crt.	Range	Anhydrous content (g/100gs.p.)	Nitrogen altogether (g/100gs.p.)	Crude proteins (g/100gs.p.)	Reducing carbohydrate (g/100gs.p.)	Altogether carbohydrates (g/100gs.p.)	C vitamin (g/100gs.p)
1	Atlantic	5,84	0,44	2,75	2,43	2,93	5,28
2	Titan	14,20	0,65	4,03	1,68	6,09	11,44
3	Jack's Lantern	5,91	0,31	1,94	2,69	3,06	7,04
4	Kaempe	7,32	0,19	1,18	2,89	3,84	7,04
5	Tonda Padana	17,19	0,63	3,94	1,56	8,11	22,88
6	Buttercup	7,75	0,20	1,26	2,56	3,58	3,52
7	Acorn	11,88	0,28	1,72	1,56	7,30	3,52
8	Placintar	7,76	0,11	0,66	1,56	3,19	5,28

Result and Discussion

The weight of the fruits obtained from the Atlantic cultivars (table 3) has grown progressively during the three years of experiments, in 2006 reaching more than 70kg/fruit. At a first glance, this weight seems impressive. Until now, the specialty literature in our country does not include experimental data mentioning such big weights for edible or fodder pumpkin fruits. Compared to the world weight record, those 70,2kg/fruit represent, in fact, an encouraging start.

- The results regarding the weight of the big fruits obtained from the Titan cultivar (V2) do not recommend it as a biologic material for producing giant fruits for an exhibition.

- At the other crops, the average weights are considered to be within the normal limits for the fruits harvested at their physiological maturity.

- Regarding the nourishing value of the fruits obtained from the experiment, the fruits aimed for human consumption were emphasized by superior parameters.

Therefore, the Placintar cultivar excels through a high concentration of total carbohydrates (3.19g/100g fresh material), while Tonda Padana and Acorn do through a high concentration of dry substance.

At the fruits of Atlantic cultivar, which can be big or huge, a high concentration of gross protein can be noticed. This makes them suitable for human consumption or as succulent fodder for animals.

Conclusion

On the basis of the presented results, the following preliminary conclusions can be formulated:

1. The crop that is currently grown in Romania may be diversified by introducing new species aimed for production of human consumption fruits, exhibitions and fodder;
2. The results regarding the average weight of fruits, especially at the Atlantic cultivar, emphasize the fact that the cropping technology progressively perfected has determined the increase of the parameters up to 70.2 kg/fruit. This represents the highest value recorded for this species, in the Romanian specialty literature, until now.
3. Some crops with small sized fruits but with a very good nourishing value, like Tonda Padana, Acorn and Buttercup may be recommended for completing and diversifying the current edible pumpkin crop.
4. The obtained and presented results are strong motivators for continuing the studies on this interesting research field.

References

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