EVALUATION OF MORPHOLOGICAL AND PHENOLOGICAL ASPECTS OF THE SPECIES *CUCURBITA PEPO* L. IN IASI

Delia MUNTEAN[1], Neculai MUNTEANU[1], Ana-Maria CIURUŞNIUC[1]

Email: mundelia@yahoo.com

Abstract

The research was based on morphological and physiological characterization of a range of eight hybrids of ornamental cabbage, as forms of cabbage leaves (Brassica oleracea var. Acephala DC). The research was conducted in 2011 in the experimental field of the Department of Vegetable, within USAMV to farm "Vasile Adamache". The aim of the research was to promote forms of ornamental cabbage studied to enrich knowledge of these varieties and their exploitation in landscape architecture. The results obtained showed the influence of hybrids and B factor (month) on plant height, influence of hybrids and B factor (month) to the number of leaves and vegetative mass dynamics of the species studied. Phenological observations reveal characteristics of each hybrid in the study, on the number of days for each phenophase. Plants showed a morphology that falls in botanical description of the species, allowing their proper development.

Key words: *Brassica oleracea* var. *acephala*, physiology, morphology.

Ornamental value at the zucchini plant is given by habitus, shape, size and color of the fruit. Fruit shape has several forms: globular, flattened, elliptical, discoid, cordiform or pyriform, turkish turban or bent neck.

Zucchini is imposing in landscape through habit, size, shape and color of the fruit. This important aspect to be taken into consideration for selection, placement and grouping them in a whole landscape effects are added additional decorative flowers and leaves.

In housing lots, ornamental zucchini can be grown usually in a separate sector, apart from ornamental garden, among the flowers, shrubs, trees, or directly on the lawn etc. It also can be used in interior decorations where you can easily impose color, size and shape of the fruit (Dascălu Doina Mira, 2006).

As the importance of food zucchini is consumed to technical maturity being used alone or mixed with other vegetables to preparing dishes with or without meat (super, stuffed zucchini, soufflés, squash dishes, fried zucchini, puddings etc.) and conserve industry, for making pots and pickled vegetables. Fruits are used in early stages of development, until physiological maturity (Stan and Munteanu, 2001).

The strongest therapeutic effects have their seeds. It helps to eliminate intestinal parasites, unclogs blood vessels, regulates cholesterol and stimulates kidney activity. It also slows the aging process and helps the body in the regeneration process. It has a laxative action and is useful in dyspepsia and constipation, due to the rich in magnesium and potassium. It is indicated in hormonal disorders, menopausal disorders and intestinal worms. It can have sedative properties and is useful for insomnia. For external use, the pumpkin is a good remedy for burns, inflammations and abscesses. (http://www.farmaciata.ro/?option=com_k2&view=item&id=121&Itemid=13).

MATERIALS AND METHODS

The research was conducted in the experimental field of discipline of the farm gardening horticulture at the University of Agricultural Sciences and Veterinary Medicine "Ion Ionescu de la Brad", Iasi, 2011. The biological material consisted of seeds purchased from the collection of knowledge from Iasi City.

The study was to evaluate the morphological and phonological of an assortment of new ornamental squash F1 hybrids, in a comparative culture, organized in nests. Culture was established by direct sowing in the field on 15 May in all nine hybrids; place the nest in three

repetitions. The distance between rows was 120-140cm and 75-80 cm between plants at a time.

Plant harvesting fresh vegetative mass was effectuated gradually at the beginning of October.

The experimental data were processed by statistical and mathematical methods.

RESULTS AND DISCUSSION

Ornamental squash species in the first year, presented the following phenology (tab.1):

- Emergence in greenhouse conditions occurred after 4-7 days from sowing;
- The first true leaves appeared after 7-10 days after emergence;
- Appearance of the first fruits took place after 20-30 days after emergence;
- Plants to harvest maturation have occurred after 123-153 days (Lima A.R. and colab., 2000).

Table 1

Results of phenological characterization of ornamental zucchini

Variety	Nr. of days to emergence	No. of days until the first true leaf	No. of days until the appearance of fruit	No. of days to harvest
	In the field			
Verrucosa	4	7	20	123
Festival	5	10	26	140
Bicolor-Pear	7	9	26	125
Dinosaur Egg	7	9	30	130
Styriaca	6	8	30	145
Daisy	5	9	28	153
Warzen Orange	5	7	25	128
Small Warted	5	7	28	153
Custard Marrow	6	8	27	145

Table 2

Influence on the mass vegetative hybrids

Name of factor	Veg. mass. (g)	% from witness	Differences (cm)	Meaning
Verrucosa	12.67	100.0	Martor	
Festival	13.45	106.13	0.78	-
Bicolor-Pear	53.00	418.33	40.33	*
Dinosaur Egg	20.24	159.74	7.57	-
Styriaca	29.52	232.99	16.85	-
Daisy	27.27	215.23	14.60	-
Warzen Orange	15.41	121.66	2.74	-
Small Warted	25.28	199.55	12.61	-
Custard Marrow	25.68	202.71	13.01	-

LD 5% : 38 LD1% : 52.4 LD0.1% : 72.1

*LD=limited differences

Vegetative mass dynamic grown from 12.67 g to 25.68 g. Pear Bicolor hybrid had a difference of 40.33 g witness being significant.

Although Custard Marrow hybrid achieved an increase of 102.71% was not statistically assured (tab.2).

Table 3

Influence of B factor (month) on vegetative mass

Name of factor	Veg. mass. (g)	% from witness	Differences (cm)	Meaning
May	2.96	27.17	-7.94	-
June	6.15	56.38	-4.75	-
July	10.90	100.0	Martor	-
August	17.33	159.01	6.43	-
September	25.59	234.75	14.69	**
October	35.98	330.06	25.08	***

LD 5% : 11.7 LD1% : 15.5 LD0.1% : 20

*LD= limited differences

B factor (month) resulted an increase in vegetative mass of 2.96 g 35.98 g from May to October. In August and September it saw a growth of 59.01%, but this was not statistically assured, respective 134.75%, difference from the control being significant (tab.3).

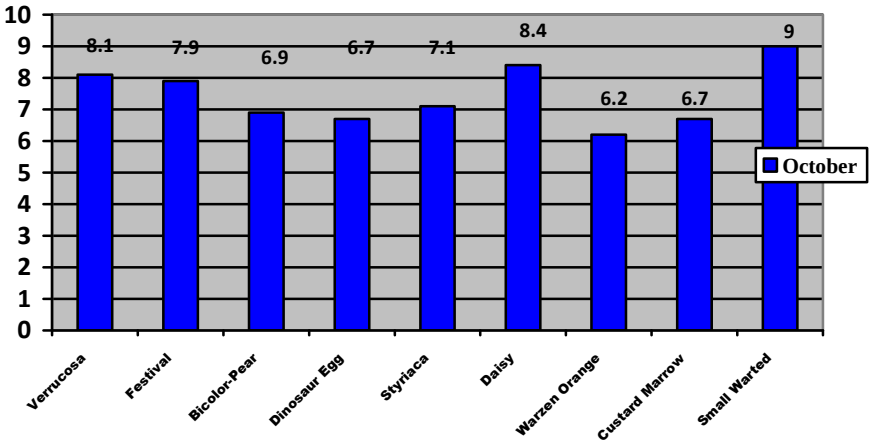

Fig.1. **Results on the dynamics of the fruit diameter species of ornamental squash**

From the comparative analysis of nine hybrids of ornamental squash, it is observed that the developed hybrid Warted Small largest fruit diameter of 9 cm. Because of the climatic conditions in 2011 and of the hybrids, fruit diameter ranged from 6.2cm at Warzen Orange hybrid to 9cm at Small Warted hybrid (fig.1).

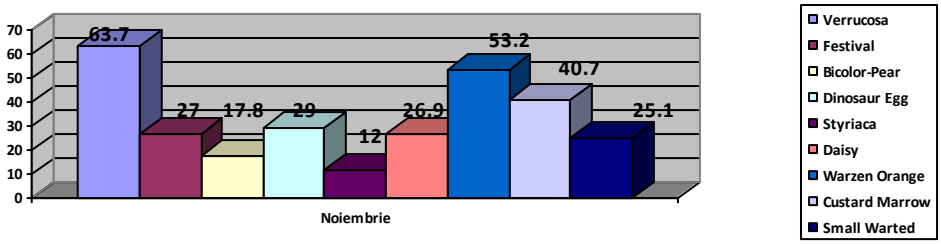

Fig.2. **Results on the dynamics of male flowers on pumpkin ornamental species**

From figure 2 it can see that hybrid Verrucosa achieved the highest number of male flowers, 63.7, followed by hybrids Warzen Orange and Custard Marrow, 53.2, respective 40.7 of male flowers. The fewer of male flowers were made at Styriaca hybrid, respective 12.

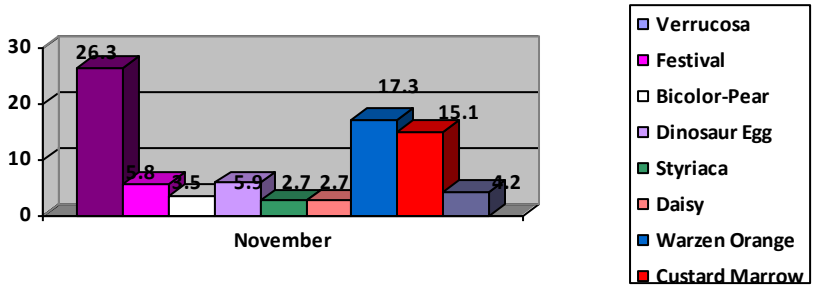

Fig.3. Results on the dynamics of the number of female flowers of pumpkin ornamental species

As you can see at the male flowers, hybrid Verrucosa has the highest number of female flowers respectively 26.3, followed by Warzen Orange and Custard Marrow hybrids with

a number of female flowers of 17.3 and 15.1. Styriaca hybrids and Daisy have made the same number of female flowers, of 2.7. The difference between these two hybrids and Verrucosa was major, respectively 23.6 (fig.3).

CONCLUSIONS

1. Plants showed a morphology that falls in botanical description of the species, allowing their proper development.

2. Phenological observations reveal characteristics of each hybrid in the study, on the number of days for each phenophase.

3. Vegetative mass dynamic grown from 12.67 g to 25.68 g. B factor (month) resulted in an increase in vegetative mass of 2.96 g in May to 35.98 g in October.

4. From the comparative analysis of nine hybrids of ornamental squash, it is observed that the developed hybrid Small Warted largest fruit diameter of 9 cm.

5. In terms of the number of male and female flowers, Verrucosa achieved the highest number of male flowers, 63.7, respectively 26.3 of female flowers.

REFERENCES

Dascălu Doina Mira (2006) - Peisagistica : o posibilă terapie pentru problemele mileniului al III-lea, Edit. Societății Academice "Matei - Teiu Botez", Iaşi;

Esquinas-Alcazar, J.T. (1983) – Genetic resources of Cucurbitaceae, IBPGR Secretariat, p.56-71;

Lima , A.R., Crepaldi , I.C., J.R.F. de Santana, 2000 - Characterization of Local Varieties of *Cucumis melo*, p.41-45;

Stan, N., Munteanu, N., 2001 – Legumicultură specială, vol.II, Editura “Ion Ionescu de la Brad”, Iaşi, p.233-234;

.http://www.farmaciata.ro/?option=com_k2&view=item&id=121&Itemid=13