

## A NEW ASSORTMENT OF EGGPLANT (*SOLANUM MELONGENA* L.) FOR GROWING IN POLY-TUNNELS

### UN NOU SORTIMENT DE PĂTLĂGELE VINETE (*SOLANUM MELONGENA* L.) PENTRU CULTURA ÎN SOLARII

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**Abstract.** *The economic efficiency of eggplant crops in tunnels is generally determined by any technological factors such as: providing seedlings with high biological value, crop establishing at time and proper density, assuring the measures to maintenance at optimum etc. The aim of the research was to determine the suitability of a new eggplant assortment for cultivation in tunnels around of Matca area. The biological material used was represented by three hybrid cultivars: Black Pearl F1 (Enza Zaden), Mirval F1 (Vilmorin) and Valeria F1 (Hazera-Nickerson). The highest yields, early (68.60 t/ha) and total (163.93 t/ha) were achieved by Black Pearl F1 hybrid. The highest number of fruits per plant was obtained by Valeria hybrid and the highest percentage of early production was achieved by Mirval F1 cultivar.*

**Key words:** eggplant, cultivars, yield, protected crop

**Rezumat.** *Eficiența economică a cultivării pătlăgelelor vinete în spații protejate în general este condiționată de o serie de factori tehnologici, cum ar fi: asigurarea materialului de plantat cu valoare biologică ridicată, înființarea culturii în epocă și la densități corespunzătoare, asigurarea lucrărilor de întreținere în perioade optime etc. Scopul cercetării a fost de a stabili preabilitatea unui sortiment nou de pătlăgele vinete, cultivat în solarii, în condițiile zonei Matca. Materialul biologic utilizat a fost reprezentat de trei cultivare hibride: Black Pearl F1 (Enza Zaden), Mirval F1 (Vilmorin) și Valeria F1 (Hazera-Nickerson). Cele mai ridicate producții, timpurie (68,60t/ha) și totală (163,93t/ha) au fost realizate în cazul hibridului Black Pearl F1. Cel mai mare număr de fructe pe plantă a fost realizat în cazul hibridului Valeria, iar procentul cel mai ridicat de producție timpurie a fost obținut în cazul cultivarului hibrid Mirval F1 (42,51%).*

**Cuvinte cheie:** pătlăgele vinete, cultivare, producție, culturi protejate

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## INTRODUCTION

Eggplants are annual plants really appreciate in Romania, original from India (Munteanu, 2003). Eggplant is grown for its fruit, which is just consumed at technological maturity as cooked.

Increasing the area dedicated to this species is determined by: the importance of nutrition, economic importance, agricultural technology and risk factors.

Romania currently grown over 8,500 hectares, of which approximately 32% are occupied areas of protected areas, which justifies high economic importance to this crop (INS, 2014; MAPAM, 2014).

Among the important factors of productivity, the cultivar is the most important factor for successful crop (Stoleru *et al.*, 2013).

With the entry of Romania into the EU, the cultivars circulate freely throughout the community space, which makes the free market to be present many varieties and hybrids that most often do not show high ecological plasticity as requested by farmer.

The present study complements this goal accounted add three new cultivation from community space for culture in greenhouses, in order to introduce and promote their culture in the N-E of Romania.

## MATERIAL AND METHOD

### Experimental site

The experiments were carried out in the vegetable are of Matca, Galați county, in the family farm (AF. Marin Vasile), during 2015. The crop was planted in a wooden tunnel structure, on the area of 3200 m<sup>2</sup>. The maintenance works were applied in accordance with the scientific literature (Ciofu *et al.*, 1998; Munteanu, 2003; Stoleru *et al.*, 2014). Matca area is characterized in terms of climate with average temperatures of 10.5 °C and rainfall around 440 mm annually. The experience was organized in randomized blocks, with 3 repetitions on each variant. Each variant of the repetition included 24 plants.

### Biological material used in the trials

To achieve its purpose were used in the experiment three growing eggplant with dark fruit, because the promotion cultivars primarily take into account the requirements of consumers.

In the research were used hybrid cultivars from Enza Zaden (Black Pearl F1), Vilmorin (Mirval F1) and Hazera-Nickerson (Valeria F1), (fig.1).

### Growth and development indicators

During the vegetation was used to determine and biometric measurements, both plants and fruits to characterize the morphology of the assortment use.

In terms of productivity indicator measurements and measurements were carried out on the fruit: the number of fruits, average fruit weight, early and total production.



Fig. 1 Assortment used in the experience

**Statistical analyses.** Experimental data processing was carried out using analysis of variance (ANOVA), which established limits of probability for each treatment compared with control (Leonte, 1997).

## RESULTS AND DISCUSSIONS

In the assortment studied precocity can affirm that Valeria F1 hybrid is earlier than Mirval F1 and Black Pearl (tab. 1). Production potential of hybrids in the study varied in large limits, between 120 to 180 t/ha.

In relation to fruit shape Mirval and Black Pearl F1 cultivars presents egg-shaped fruit with a diameter slightly larger upper third (to the point pistilar) and Valeria F1 has elongated fruit. In the color of the fruit maturity consumption, all three cultivation of fruits are dark purple color to black and very shiny to the Black Pearl. Fruit weight ranged from 268.9 g Valeria F1 cultivar to 374.7 g in the case of the Black Pearl hybrid.

The characterization assortment of eggplant in comparative crop

Cultivar	Precocity	Yield potential (t/ha)	Plant		Fruit characteristics					
			high (cm)	type of growing	form	long (cm)	diameter (cm)	color	weight (g)	tolerance/ resistance
<b>Mirval F1</b>	Semi-early	160-170	160-190	ND	ovoid	18.9	12.8	black/dark purple	359.9	TMVS, Tm:2
<b>Black Pearl F1</b>	Semi-early	160-180	160-180	ND	ovoid	19.4	10.7	black/dark purple	374.7	TMVS, V; F;
<b>Valeria F1</b>	early	130-140	180-200	ND	long, easy ovoid	23.5	9.0	black/dark purple	268.9	TMVS, Tm:2; F;

ND – un-determinat

TMVS – *Tobacco mosaic virus strain P<sub>0</sub>*, Tm- *Tobacco mosaic virus*, F-*Fusarium oxisporum*; V-*Verticillium dahliae*;

Early production in the experimental versions increased from 52.9 t/ha in the case of Valeria F1 variant to 68.6 t/ha in the Black Pearl F1 hybrid. Differences in production obtained from the average experience (8.5 t/ha) considered positive significant. Also, negative significantly yield results than the average for Valeria F1 hybrid, the differences being -7.2 t/ha (fig. 2).

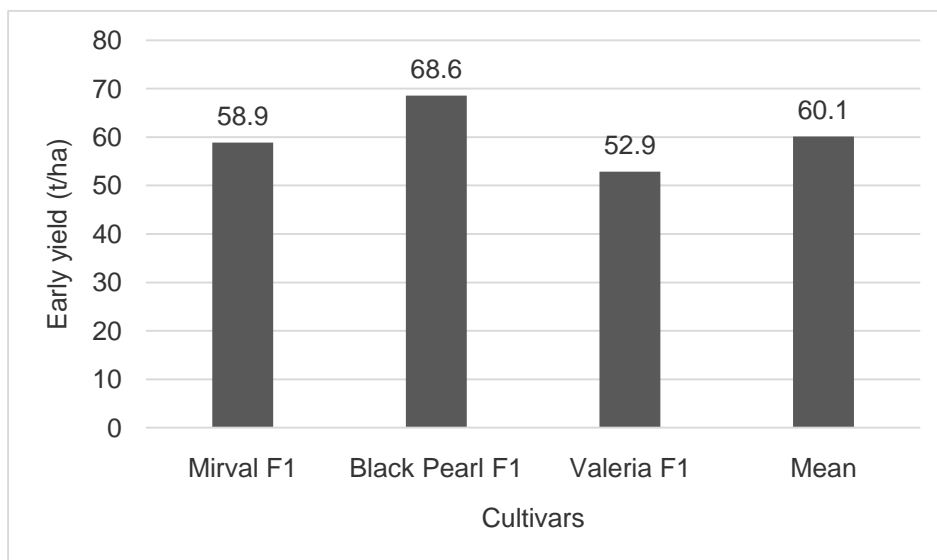


Fig. 2 Graphic for early production of eggplant

The total production varied from 127.05 t/ha in the case of Valeria F1 to 163.93 t/ha in the case of Black Pearl F1 hybrid (fig. 3). The difference compared to the average experience of 20.10 t/ha is considered significant positive. Similar results with experience mean were obtained in the Mirval F1 hybrid. Valeria F1 hybrid were obtained lowest yields, differences from the average experience are considered significant negative (-16.78 t/ha).

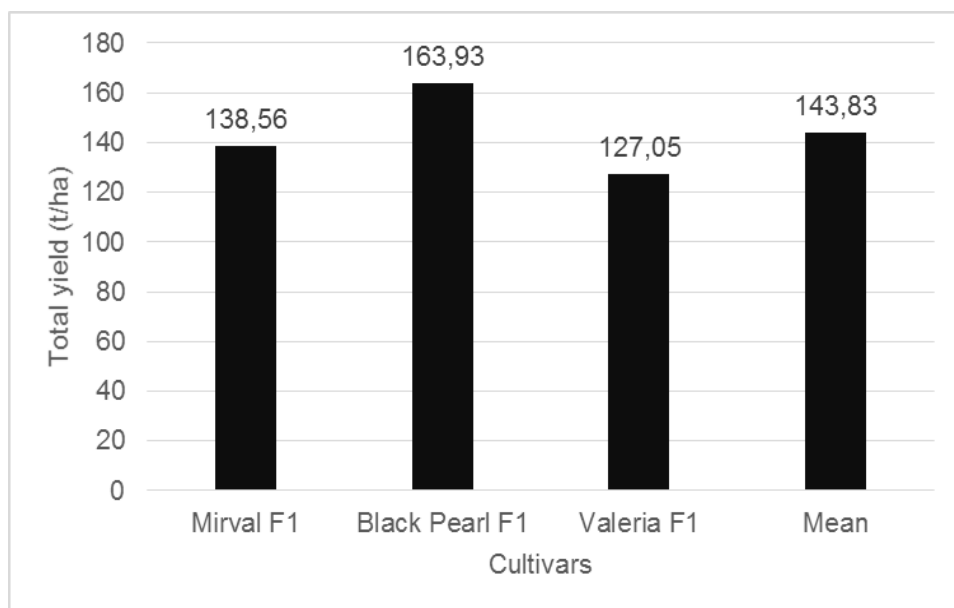


Fig. 3 Graphic for total yield of eggplant

## CONCLUSIONS

The highest productions of early and total, in tunnels were made by cultivar Black Pearl F1. The maximum amount of harvest is made in the months of June-July for all hybrids use. The highest percentage of early production in total production is achieved by Mirval F1 hybrid (42.51%).

The biggest fruits were obtained in the case of cultivar Black Pearl F1.

According to the destination of production and consumers requirements can be promoted all three cultivars, due to production qualities (Black Pearl F1), earliness (Mirval F1) and form of fruits (Valeria F1).

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