

# Correlation Between the Fruit Position on the Plant and Seeds Quality Indices of Green Peppers (*Capsicum annuum* L.)

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## Abstract

During the 2013-2014 period in the frame of the experimental field of RDIVFG VIDRA, three green pepper varieties, created at the Plant Breeding Department of the Institute, were investigated under comparative plots for evaluation. Several observations and morphological determinations were carried out aiming the following indices: the germinative faculty (GF) and the germinative energy (GE). Depending on the formation order of the fruits on the plant, there were significant differences between the values of the main physiological indices of the seeds' quality, both for the germinative faculty of the seeds and for their germinative energy. Between the position of the fruit on the plant and the quality of the seeds it is a strong negative correlation, distinct significant, the value of the relation coefficient ( $r$ ) being over the values for P 5% and P 1%.

**Keywords:** *pepper, fruit position, germinative faculty, germinative faculty, seed quality.*

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## Introduction

Ensuring the necessary seed quantities for the production extension of the biological material from the valuable varieties and hybrids, which may ensure the maintenance of their initial traits, implies permanently applying certain intervention methods and techniques, depending on the biological particularities of the species and cultivar (the variety or hybrid), in a well-defined system, bearing the name of "*production of the seeds and seedling material*" (Ciofu *et al.*, 2003; Sbîrciog, 2003).

## Aims and objectives

Starting from the premise that between the seeds' quality traits and the position/order of the fruits' formation on the mother plant there are certain connections (Demir, 1991; Ozlem and Benian, 2007), the work aims at assessing the seeds' quality parameters depending on the order of the formation on the mother plant, at three genotypes of sweet peppers 'Galben superior', 'Bârsan' and 'Vidra 9'.

## Materials and methods

In order to establish some technological solutions of intervention aiming at increasing the seeds' quality, the biological material represented by the three types of sweet pepper, was studied in comparative plots for evaluation, located following the layered randomized blocks method, in four repetitions. To this end, there were several biometric determinations made aiming at establishing the following indices: the germinative faculty and the germinative energy. The assessment of the connections between the variables under study was achieved through synthetic numerical expressions, namely by correlation coefficients, while the significance of the differences between the variants under study was achieved by using the Duncan test.

## Results and Discussion

The results obtained show the existence of certain distinctly significant negative correlations between the fruit's position on the plant and the seeds' main quality indices. Depending on the

formation order of the fruits on the plant, there were significant differences between the values of the main physiological indices of the seeds' quality, both for the germinative faculty of the seeds and for their germinative energy. Considering the influence of the fruit position on the plant over the seed germination, it has been concluded that there are big variations between the germinative faculty of the seeds from the first fruit that developed on the plant and the germination capacity of the seeds from the fruits which have been formed in the 6 or 7 position on the plant (Table 1). Statistical analysis show insignificant differences for the germinative faculty of the fruits from different varieties that had the same position on the plant. The influence of the fruit position on the plant over the germinative faculty of the seeds is bigger for the fruits placed in the last position of

fructification (V- VIII) than in the first ones. Our results are in accordance with foreign literature on this subject (Ozlem and Benian, 2007). Between the fruit position on the plant and the germinative energy, the negative correlation is distinctly significant, the values of the correlation coefficient  $r = -0.9202^{***}$ ,  $r = -0.92185^{***}$  and  $r = -0.9386^{***}$  were over the values for P5% and P1% (fig 1).

### Conclusion

Between the position of the fruit on the plant and the quality of the seeds (germinative faculty, germinative energy) it is a strong negative correlation, distinct significant, the value of the relation coefficient (r) being over the values for P 5% and P 1%. For all analyzed attributes, the germinative faculty and the germinative energy decrease gradually on the fructification period, beginning from the first fruit, regardless of variety of the plant.

**Tab. 1.** The statistical interpretation of the results concerning the influence of fruit position on the plant over germinative faculty (%)

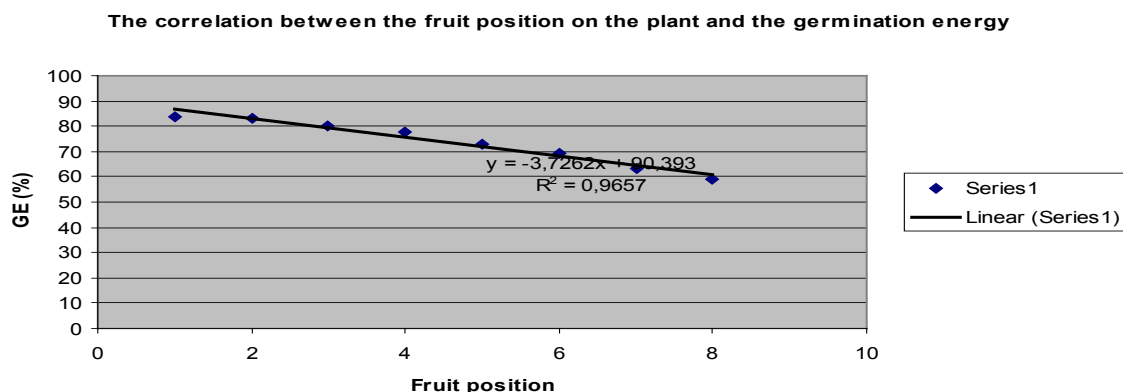
Nr. crt.	Variant	Germinative faculty (%)	Significance
1	V <sub>1</sub> V9	96	a
2	V <sub>2</sub> V9	94	a b
3	V <sub>3</sub> V9	91	b
4	V <sub>4</sub> V9	87	c
5	V <sub>5</sub> V9	85	c
6	V <sub>6</sub> V9	79	d
7	V <sub>7</sub> V9	68	e

Different letters between cultivars denote significant differences (Duncan test, P=5%).

SD 5%	4.45 %	4.81 %	4.98 %
	4.68 %	4.90 %	5.04 %

### REFERENCES

- Ciofu R, Stan N, Popescu V, Pelaghia Chilom, Apahidean S, Horgoş A, Berar V, Lauer KF, Atanasiu N (2003). Vegetable treaty. Editura Ceres. Bucureşti.
- Ciulca S (2002). Experimental tehniqe. Editura Mirton. Timișoara.
- Demir I, 1991. Changes in seed quality during seed development in pepper, tomato and marrow. Ph.D. Thesis, Depart. Agri. Uni. Reading
- Ozlem A , Benian E, 2007. Pepper Seed Yield and Quality in Relation to Fruit Position on the Mother Plant. Pakistan Journal of Biological Sciences, 10:4251-4255.
- Sbîrciog G (2003). The intensity of peppers heterosis phenomen. ASAS Bucureşti PhD Thesis.



**Fig.1.** The correlation between the fruit position on the plant and seeds germinative energy (%) –Bârsan variety