# RESEARCH REGARDING THE CONTENT IN DRY SUBSTANCE, C VITAMIN AND MINERAL ELEMENTS OF TOMATO FRUITS CULTIVATED IN NURSERY UNDER THE INFLUENCE OF THE CULTURE SUBSTRATE AND OF FERTILIZATION CONDITIONS

#### Vlad Ioana Andra \*, Raluca Vlad, Ioan Vlad, Mariana Vlad

\*University of Oradea, Faculty for environmental Protection, 26 General Magheru Street, 4100848, Oradea, Romania; ioana. <u>mester@yahoo.com</u>

#### Abstract

To realize the goal and the objectives of the research, two poly-factorial comparative experiments have been made, the first aiming the setting of the culture system, the duration of the production cycle, and the method of shadowing; and the second aiming the improvement of the fertilization system in the culture on organic substrate and in soil in one production cycle of tomatoes in nursery.

Keywords: Berdy F1, Nemarom F1, Matador F1.

# MATERIAL AND METODHS

In the first experiments it has been worked with tomato hybrids Nemarom F1 (H - 729) and Berdy F<sub>1</sub>. The seed of the Nemaron hybrid was produced in The Nursery Complex Galati, and that of the Berdy hybrid in Netherlands.

**Nemarom F<sub>1</sub> (H-729)** is a hybrid obtained in our country, it has a good resistance to the tobacco mosaic virus (TMV), Fusarium oxysporum, Cladosporium fulvum (species A +B) and nematodes. It is productive and expresses a good ecological adaptability. The fruits have the weight between 75 and 110 grams, the interior color when they are ripe is red. The fruits have 4-6 seminal lodges, they are firm, and the period of maintaining the firmness is of 16-19 days. The content in dry substance is comprised between 6,44% and 6,87%.

**Berdy**  $F_1$  is a precocious hybrid of tomatoes. The foliar device allows a good airflow, reducing the risk of disease. It has optimal values of maintaining skin and pulp firmness. The fruits persist 17-22 days, at a temperature of + 10  $^{0}$ C, without the reduction of qualitative traits. It is very resistant to mechanical sorting. The fruits weight is between 67 and 98 grams. The fruit has 3-5 seminal lodges, the interior color when it is ripe is red and it has a content of dry substance of 5,80% – 6,89%.

In the experiments regarding fertilization of tomatoes culture in extended cycle, it has been used the hybrid Matador  $F_1$ , produced in Netherlands.

**Matador**  $F_1$  is a hybrid resistant to tobacco mosaic virus (TMV), Verticilium species, Fusarium oxysporum, Cladosporium fulvum, the foliar device of the hybrid allowing a good airflow, which reduces the risk of disease. The fruits have the weight between 120 and 130 grams, each has 3-5 seminal lodges and the interior color when they are ripe is red. The content of fruits in dry substance is between 6,22 and 6,91%. The fruits are firm, and the period of maintaining their firmness being of 14-19 days.

### **RESULTAT AND DISCUSSIONS**

The chemical analyses of tomato fruits composition indicates that the culture system and the fertilization conditions do not modify essentially the content of dry substance, C vitamin and minerals (N, P, K), the values being situated between normal limits for this product (table 1).

It can be seen that the fruits with the highest content of dry substance were those of the second variant, culture in extended cycle, in bags on organic substrate, fertilized at the base with full dose and with complete fertilization during the vegetation period, maintaining the macro elements at optimal values, of 6,98%.

It can be seen that the hybrid Matador exceeds in terms of content of dry substance all the other hybrids.

The highest content in C vitamin – it belonged to the fruits of the fifth variant, culture in soil, fertilized during the vegetation period, only when the nitrogen and the potassium decreased to critical levels of 23,6 mg/100 g fresh product.

The content in C vitamin is more reduced at the fruits of the culture variants on organic substrate, with complete fertilization, which can be attributed to the higher volume of production, as well as to a more accentuated shadowing of the fruits, these variants (2 and 4) had the highest values of the growing and fructification elements.

No. crt.	Variants		D.S.	C Vitamin mg/ 100g	Mineral substances %		
	Culture system	Fertilization conditions		ing/ 100g	N	Р	K
1.	In bags on organic substrate, fertilized with full dose	When N and K decrease to critical levels	6.66	21.2	2.77	1.61	5.39
2.	In bags on organic substrate, fertilized with full dose	Complete fertilization, maintaining the macro elements to optimal values	6.98	19.3	2.83	1.76	5.46
3.	In bags on organic substrate, fertilized with ½ dose	When N and K decrease to critical levels	6.61	20.7	2.69	1.55	5.33
4.	In bags on organic substrate, fertilized with ½ dose	Complete fertilization, maintaining the macro elements to optimal values	6.80	19.1	2.79	1.69	5.37
5.	Soil	When N and K decrease to critical levels	6.55	23.6	2.60	1.41	5.24
6.	Soil	Complete fertilization, maintaining the macro elements to optimal values	6.60	22.3	2.64	1.49	5.52

# The content of dry substance, C vitamin and minerals, in tomato fruits in nursery, cultivated in extended cycle, under the influence of the culture substrate and fertilization conditions., Oradea 2008 -2009

Table 1

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# CONCLUSIONS

In terms of the content of mineral substances, the highest values of the nitrogen and phosphorus are found at the culture variants on organic substrate and more reduced at the soil culture. All of the three mineral elements (N, P, K) are found in higher quantity at the fruits of the variants which were sustained fertilized during the vegetation, by maintaining the macro elements to optimal levels and especially at the second variant, culture on organic substrate which was fertilized with full dose of fertilizers.

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