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THE INFLUENCE OF HARVESTING TIME ON THE CHEMICAL COMPOSITION OF DIFFERENT HOT PEPPER CROPS – *Capsicum annuum* L.

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Abstract:Hot pepper (*Capsicum annuum* L.) is one of the most valuable vegetable crops. Peppers are important, being a source of nutrients in the human diet and a source of A and C vitamins as well as phenolic compounds that are important antioxidants for the body in the fight against various diseases. In addition to its nutritional value, it has a bright color, such as red, orange or yellow, as well as a pleasant aroma. The content of C vitamin, both in fruits at consumption maturity and in those at physiological maturity is higher in the field crop, where the maximum recorded is 282.25 for the local variety. The lowest carotenoid content was registered for the Paprica Giallo variety 0.165 mg / g, and the highest for the local variety 3.305 mg / g, in the submontane area from Păniceni locality, Cluj county.

- Introduction The diversity of uses of pepper in obtaining various products and culinary preparations, as well as its valuable content in nutrients explains the expansion of this crop. The nutritional value of pepper fruits is given by their content in carbohydrates (6-7%), proteins (1-1.3%), lipids (0.5-1%), vitamin C (100-300 mg / 100 g fresh matter), A, P, B_1, B_2, B_6, E and H vitamins and minerals such as potassium, phosphorus, calcium and iron [13, 14]. Some species and varieties of peppers have a special decorative, artisanal value and are suitable to be grown in pots, confined spaces or formal gardens, for the decoration of confined interior spaces. Of all the existing varieties, ornamental hot peppers are cultivated for decorative purposes, due to the decorative effect of the fruits [2].

- Material and method The research carried out in this paper aimed at the behavior of hot peppers in a submountain area, in the village of Paniceni, Cluj County, obtaining fruits with parameters close to those grown in specific areas. Within this paper, a single-factor field experiment was organized, in which the experimental factor was the cultivar, with 6 graduations: Pietro F1, Arwad F1, Hyffae F1, De Cayenne, Peperone Paprica Giallo, Local variety.

- Results and discussions The content of C vitamin shows quite large variations between cultivars, both at the maturity of consumption and at the physiological one (Table 1 and Table 2). At these matures, the local variety has the highest C vitamin content with 187.33 mg / 100 g, respectively 282.25 mg / 100 g.

The content of C vitamin in hot pepper fruits at consumption maturity

Cultivar	C vitamin mg/100g	C vitamin relative content	Difference ±	Significance
Pietro F1	130.33	100.0	0.00	Mt
Arwad F1	86.33	66.2	-44.00	0
Hyffae F1	112.33	86.2	-18.00	-
De cayenne	169.33	129.9	39.00	-
Paprica giallo	135.67	104.1	5.33	-
Local variety	187.33	143.7	57.00	*
	LSD (p 5%)		42.75	
	LSD (p 1%)		60.78	
	LSD (p 0.1%)		88.00	

The content of vitamin C in hot pepper fruits at physiological maturity

Cultivar	C vitamin mg/100g	C vitamin relative content	Difference ±	Significance
Pietro F1	214.76	100.0	0.00	Mt
Arwad F1	191.29	89.1	-23.48	-
Hyffae F1	235.85	109.8	21.09	-
De cayenne	246.36	114.7	31.59	-
Paprica giallo	249.30	116.1	34.53	-
Local variety	282.25	131.4	67.49	*
	LSD (p 5%)		49.61	
	LSD (p 1%)		70.52	
	LSD (p 0.1%)		102.11	

Carbohydrate content of hot peppers at consumption maturity and physiological maturity

Hybrid / Variety	Consumption maturity			Physiological maturity		
	Fructose g/100g	Glucose g/100g	Sucrose g/100 g	Fructose g/100g	Glucose g/100g	Sucrose g/100 g
Pietro F1	0.82	1.30	1.76	2.68	2.80	-
Arwad F1	1.39	1.83	1.21	2.92	3.51	0.12
Hyffae F1	1.07	1.61	1.08	4.07	5.09	-
De cayenne	0.92	1.66	1.63	3.73	4.19	-
Paprica giallo	0.93	1.47	1.73	5.79	5.95	0.12
Local variety	0.33	1.12	0.28	2.17	2.05	-

The content of carotenoids in hot pepper fruits at consumption and physiological maturity

Hybrid / Variety	Carotenoids mg/g at consumption maturity	Carotenoids mg/g at physiological maturity
Pietro F1	0.20±0.12	0.63±0.6
Arwad F1	0.30±0.32	0.71±0.4
Hyffae F1	0.35±0.41	0.97±0.22
De cayenne	0.42±0.18	1.61±0.32
Paprica giallo	0.17±0.16	0.16±0.31
Local variety	0.59±0.15	3.30±1.65

•Conclusions The content of vitamin C, both in fruits at consumption maturity and in those at physiological maturity, is higher in field cultivation, where the maximum recorded is 282.25 for the local variety. The carbohydrate content is influenced by the ripening stage of the fruit. In the ripe fruits of consumption is found in addition to fructose and glucose and sucrose, which during the ripening period of the fruit gradually disappears.The local variety was marked by the high content of the analyzed chemical components, registering the highest content and carotenoids.