ORGANIC VEGETABLE PRODUCTS DIVERSIFICATION AND PROMOTION IN ORDER TO IMPROVE FOOD INTAKE

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Abstract

The requirement to increase production of vegetables is justified by their very high food value. Due to the important role they have in nutrition, fruits and vegetables enter the diet at a rate of 20-25% and are one of the indicators of living standards in a country.

In this paper it was tried to emphasize food quality vegetable products obtained by organic crops that are grown products without using chemical fertilizers, radiation and without GMOs and their production focuses on biodegradable resource use and water conservation and soil. However organic products contain pesticides, but in much smaller quantities than those found in food produced in conventional crops where pesticides are used to act as its purpose, to have no negative effects, effects on people and the environment.

The food quality of cucumber fruits analyzed between 2010 - 2012 in parallel with the food value of cucumbers grown under conventional system was superior in terms of sensorial quality. Compared to cucumbers produced in conventional cultures, the influence of these elements can be found also in the fruit production.

Key words: ecologic culture, quality of cucumber production, protected space, protected culture.

INTRODUCTION

In food strategy, along with other vegetable products, vegetables have always had an important place. Nutritional considerations make the modern human diet, less subjected to physical activity and to more intellectual ones, to increase consumption of vegetables.

Cucumber fruits at technological maturity are valued for qualities and diverse content of active principles as for the therapeutic effect. Food value of cucumbers is quite low, fruits containing 4-6% solids, 2.4 to 3.6% carbohydrate, 0.6 to 0.9% proteins. Energy value is only 15-16 calories/100 g of fresh substance (Măniuțiu, 2009). Vitamins are found in very small amounts of cucumber fruit: vitamin C - 5-14 mg, vitamin A - 0.2 mg, vitamin B1 - 0.03 mg Vitamin B2 - 0.04 mg Vitamin PP - 0, 2 mg per 100 g of fresh substance. A higher content stands out in terms of mineral salts: K - 170 mg (with a role in maintaining acid-base balance of the body) Ca 11 to 25 mg, Fe 0.4 to 1.1 mg, P 9-27 mg, Mg- 8 mg per 100 g of fresh substance.

The Cucurbitaceae B, present in cucurbits species is considered to have a natural anticancer effect (Chan K.T., Li K., Liu S.L., Chu K.H., Toh M., Xie W., 2010).

Balanced growth and development of cucumbers for conservation requires the provision of adequate water and nutrients. This study follows the possibility of increasing production and quality of cucumbers for conservation.

MATERIAL AND METHODS

The application of environmental technologies intervenes decisively in yield and quality parameters. An important issue is the behavior of some cucumber hybrids for the application of technologies.

The experimental culture of cucumbers of gherkin type was placed in two greenhouses where there were applied different culture technologies, namely:

- Solar 1 (S1) there has been applied green technology culture;
- Solar 2 (S2) in which the applied technology was the conventional one.

In the ecological culture there were used certified natural organic fertilizers.

AGRIFOR is a fertilizer containing fulvic acid, a bio-stimulator which enhances the ability of food absorption and transport in plants, soil microflora and activates regeneration, stimulates root system, improves uniformity in size and ripeness of fruit, fruit enhances latching on plant, improving hormonal balance.

Tecamin Max is a product that activates plant growth, helps recovery from stressful conditions, improving circulation and absorption.

RESULTS AND DISCUSSIONS

In the three experimental years, we can say that plants had generally a vigorous growth and good flowering and fructification. Analyzing cucumber fruit quality throughout the experimental period, it appears that in general we obtained good quality fruit, with smaller or greater differences depending on the variant

Cucumber fruit quality analysis in the three experimental years in all hybrids included in the study once again confirms the high quality of the fruits of variants mulched with black polyethylene film grown at a density of 44,400 plants/ha, where there was recorded the highest percentage of extra fruit quality of total production, with percentage differences of extra quality fruit 5.30% of the total in 2010 to 8.51% of total extra quality fruit in 2011 and 7.84 extra quality fruit in 2012.

Table 1

Commercial quality of cucumbers, Husasău de Tinca 2010

Variant Culture system	Density mii pl./ha	Hybrid	Experimental year 2010				
			Total production (kg/m^2)	Production in quality (kg/m^2)			Extra quality of all (%)
				Extra	Cal.I.	Cal. II	
Nemulcit	64,4	Szatmar	3,22	1,96	0,98	0,28	60,86
Nemulcit	64,4	Crispina	2,68	1,61	0,79	0,29	60,07
Nemulcit	64,4	Pasalimo	2,76	1,69	0,80	0,27	61,23
Nemulcit	64,4	Mirabelle	3,11	2,00	0,89	0,22	64,30
Nemulcit	44,4	Szatmar	3,91	2,54	1,01	0,36	64,96
Nemulcit	44,4	Crispina	3,13	1,98	0,90	0,25	63,25
Nemulcit	44,4	Pasalimo	3,61	2,30	1,06	0,25	63,71
Nemulcit	44,4	Mirabelle	3,82	2,77	0,82	0,23	72,51
Nemulcit	33,3	Szatmar	3,63	2,48	0,85	0,30	68,31
Nemulcit	33,3	Crispina	3,72	2,52	0,84	0,36	67,74
Nemulcit	33,3	Pasalimo	3,38	2,15	0,92	0,31	63,60
Nemulcit	33,3	Mirabelle	3,49	2,28	0,98	0,23	65,32
Mulcit	64,4	Szatmar	3,71	2,50	0,84	0,37	67,38
Mulcit	64,4	Crispina	3,30	2,11	0,87	0,32	63,93
Mulcit	64,4	Pasalimo	3,28	2,12	0,85	0,31	64,63
Mulcit	64,4	Mirabelle	3,53	2,39	0,90	0,24	67,70
Mulcit	44,4	Szatmar	5,16	3,93	0,91	0,32	76,16
Mulcit	44,4	Crispina	3,75	2,48	0,93	0,34	66,13
Mulcit	44,4	Pasalimo	4,19	2,68	1,12	0,39	63,96
Mulcit	44,4	Mirabelle	5,32	4,14	0,92	0,28	77,81
Mulcit	33,3	Szatmar	4,73	3,54	0,86	0,33	74,84
Mulcit	33,3	Crispina	4,72	3,30	0,98	0,44	69,91
Mulcit	33,3	Pasalimo	4,51	3,15	0,91	0,45	69,84
Mulcit	33,3	Mirabelle	4,92	3,70	0,89	0,31	75,20

Table 2

Commercial quality of cucumbers,Husasău de Tinca 2011

Variant Culture system	Density mii pl./ha	Hybrid	Experimental year 2011				
			Total production (kg/m^2)	Production in quality (kg/m^2)			Extra quality of all (%)
				Extra	Cal.I.	Cal. II	
Nemulcit	64,4	Szatmar	3,16	2,03	0,88	0,25	64,24
Nemulcit	64,4	Crispina	2,59	1,60	0,75	0,24	61,77
Nemulcit	64,4	Pasalimo	2,74	1,65	0,80	0,29	62,50
Nemulcit	64,4	Mirabelle	3,27	2,13	0,84	0,30	65,13
Nemulcit	44,4	Szatmar	3,65	2,45	0,87	0,33	67,12
Nemulcit	44,4	Crispina	3,14	2,02	0,89	0,23	64,33
Nemulcit	44,4	Pasalimo	3,64	2,41	0,97	0,26	66,20
Nemulcit	44,4	Mirabelle	3,83	2,60	0,94	0,29	67,88
Nemulcit	33,3	Szatmar	3,64	2,44	0,95	0,25	67,03
Nemulcit	33,3	Crispina	3,70	2,50	0,84	0,36	67,56
Nemulcit	33,3	Pasalimo	3,27	2,14	0,84	0,29	65,44
Nemulcit	33,3	Mirabelle	3,52	2,33	0,90	0,29	66,19
Mulcit	64,4	Szatmar	3,83	2,55	0,96	0,30	66,57
Mulcit	64,4	Crispina	3,23	1,98	0,97	0,26	61,30
Mulcit	64,4	Pasalimo	3,18	2,06	0,89	0,23	64,77
Mulcit	64,4	Mirabelle	3,57	2,29	1,00	0,28	64,14
Mulcit	44,4	Szatmar	4,68	3,38	0,91	0,39	72,22
Mulcit	44,4	Crispina	3,89	2,59	0,98	0,32	66,58
Mulcit	44,4	Pasalimo	4,37	2,95	1,06	0,36	67,50
Mulcit	44,4	Mirabelle	5,38	4,11	0,99	0,28	76,39
Mulcit	33,3	Szatmar	4,66	3,26	0,95	0,45	69,95
Mulcit	33,3	Crispina	4,54	3,10	0,96	0,48	68,28
Mulcit	33,3	Pasalimo	4,43	3,00	0,96	0,47	67,72
Mulcit	33,3	Mirabelle	4,90	3,51	0,97	0,41	71,63

Table 3

Commercial quality of cucumbers, Husasău de Tinca 2012

Variant			Experimental year 2012				
Culture system	Density mii pl./ha	Hybrid	Total production (kg/m^2)	Production in quality (kg/m^2)			Extra quality of all (%)
				Extra	Cal.I.	Cal. II	
Nemulcit	64,4	Szatmar	3,16	2,05	0,88	0,23	64,87
Nemulcit	64,4	Crispina	2,59	1,63	0,74	0,22	62,93
Nemulcit	64,4	Pasalimo	2,74	1,68	0,80	0,26	63,63
Nemulcit	64,4	Mirabelle	3,27	2,18	0,84	0,25	66,66
Nemulcit	44,4	Szatmar	3,65	2,47	0,87	0,31	67,67
Nemulcit	44,4	Crispina	3,14	2,05	0,87	0,22	65,28
Nemulcit	44,4	Pasalimo	3,64	2,42	0,98	0,24	66,48
Nemulcit	44,4	Mirabelle	3,83	2,64	0,93	0,26	68,92
Nemulcit	33,3	Szatmar	3,64	2,46	0,95	0,23	67,58
Nemulcit	33,3	Crispina	3,70	2,48	0,86	0,36	67,02
Nemulcit	33,3	Pasalimo	3,27	2,15	0,86	0,26	65,74
Nemulcit	33,3	Mirabelle	3,52	2,36	0,94	0,22	67,04
Mulcit	64,4	Szatmar	3,83	2,58	0,96	0,27	67,37
Mulcit	64,4	Crispina	3,23	1,99	0,95	0,27	61,60
Mulcit	64,4	Pasalimo	3,18	2,05	0,88	0,25	64,46
Mulcit	64,4	Mirabelle	3,57	2,34	1,00	0,23	65,54
Mulcit	44,4	Szatmar	4,68	3,37	0,91	0,40	72,00
Mulcit	44,4	Crispina	3,89	2,57	0,98	0,34	66,06
Mulcit	44,4	Pasalimo	4,37	2,98	1,07	0,32	68,19
Mulcit	44,4	Mirabelle	5,38	4,13	0,96	0,29	76,76
Mulcit	33,3	Szatmar	4,66	3,30	0,97	0,39	70,81
Mulcit	33,3	Crispina	4,54	3,10	1,04	0,40	68,28
Mulcit	33,3	Pasalimo	4,43	3,00	0,99	0,44	67,72
Mulcit	33,3	Mirabelle	4,90	3,53	1,02	0,35	72,04

It appears that in all variations of extra quality fruits represented the largest production volume, followed by the 1st quality that has presented average values quite close between variants.

In all variants, the 2nd quality was not an important segment of production, however there is a slight difference between the non-mulched and mulched versions.

CONCLUSIONS

The most important carriers of pollutants and their influence on the entire food chain, from raw material to finished product are: water, air, culture, technology, product recipes, processing techniques, microorganisms and other bio-pests.

In the three experimental years, in all variants analyzed the extra quality of cucumber fruits of gherkin type recorded a large volume of production, volume representing an element of promotion of organic food crops.

The promotion of organic products to improve food intake is a necessity due to food security and eradication of diseases of eco-toxicological nature.

Nitrates and nitrites derived from the application of phytosanitary treatments and fertilization reach the offal of plants and in certain concentrations affect health.

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