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EFFECT OF FOLIAR FEEDING ON THE YIELD LEVEL AND QUALITY OF SIX LARGE-FRUIT MELON (*Cucumis melo* L.) CULTIVARS

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Abstract. An experiment was established to evaluate an effect of foliar application of Florovit and Ekolist-Warzywa+Urea on the yield level and quality of six large-fruit melon cultivars (Pacstart, Yupi, Seledyn, Polydor II, Gattopardo, Legend) cultivated in the filed under the climatic conditions of central-eastern Poland. A higher yield of better quality was achieved in the years with relatively high air temperature and low rainfall in August when melon finishes to grow. Florovit-fertilized plants produced higher marketable yield and a higher number of marketable fruit than non-fertilized plants. Foliar feeding with both formulations investigated significantly increased the average fruit weight, flesh thickness and fruit flavour as compared to the non-fertilized melons. The cultivar 'Yupi' produced the highest marketable yield and the greatest number of marketable fruit whereas 'Seledyn' was characterized by the highest average fruit weight. 'Gattopardo' cultivated without foliar feeding and 'Yupi' and 'Gattopardo' fertilized with Florovit and Ekolist+Urea produced the best fruit in terms of their flavour.

Key words: Ekolist-Warzywa, Florovit, foliar feeding, melon, quality, yield

INTRODUCTION

Ground application of fertilizers is a basic way of providing plants with nutrients. However, intensive mineral fertilization can lead to deterioration in physico-chemical soil properties and reduced yield quality. According to many authors, foliar feeding is an important supplement of soil fertilization. Foliar-fertilized plants deliver high yields of good quality when foliar fertilization is combined with optimal soil fertilizer application [Nurzyński 1996, 1997, Osińska and Kołota 1998, Wójcik 1998, Biesiada et al. 2000, Mareczek et al. 2000, Jifon and Lester 2007].

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Foliar fertilization including N, P, K and microelements is recommended as the most effective method of eliminating nutrient deficiencies in vegetables [Trejo-Téllez et al. 2007]. According to Biesiada and Kołota [1994], foliar fertilization makes it possible to obtain high and good-quality yields of vegetables and simultaneously use lower quantities of mineral fertilizers.

The present work is an attempt to determine an effect of foliar feeding with Florovit and combination Ekolist-Warzywa+Urea on the yield level and quality of six large-fruit melon cultivars.

MATERIAL AND METHODS

A field experiment was carried out in 2005–2007 at the University of Podlasie greenhouse complex, Siedlce. The experiment was set up as randomised blocks with four replications and was carried out on anthropogenic soil with hortisol properties which has been used as a part of horticultural farm for many years. It was a neutral soil characterized by a humus level of approximately 40 cm and average organic carbon content between 2.0 and 2.3 % (tab. 1).

Table 1. Characteristic of soil conditions before experiment placing (available food components contents)

Tabela 1. Charakterystyka warunków glebowych przed założeniem doświadczenia (zawartość łatwo przyswajalnych składników pokarmowych)

Years Lata	pH	C-org %	$N\text{-}NO_3$	$N\text{-}NH_4$	P	K	Ca	Mg
			$mg \cdot kg^{-1}$ air dry mass – powietrznie suchej masy					
2005	6.9	2.3	15	26	23	68	856	29
2006	7.2	2.0	9	20	18	81	913	26
2007	6.6	2.3	13	19	20	60	887	28
Mean Średnio	6.9	2.2	12	22	20	70	885	28

Available phosphorus and potassium contents was below optimum limit whereas nitrogen, magnesium and calcium contents were slightly above this limit for field-grown cucumber [Sady 2000]. These standards were also accepted for field-grown melon. Basic soil preplant fertilization included Azofoska at a rate of 10 kg per 100 m^2 of cultivated area.

The experiment investigated an effect of foliar feed formulation application (control without foliar feeding, double foliar application of Florovit at a concentration of 0.25%, double foliar application of Ekolist-Warzywa at a concentration of 0.5% + Urea at a concentration of 0.1%) on the level and quality of yield of six melon cultivars (Pacstart, Yupi, Seledyn, Polydor II, Gattopardo, Legend) grown in the open field under the climatic conditions of central-eastern Poland. The seeds of the cultivars 'Pacstart', 'Yupi', 'Polydor II', 'Gattopardo' and 'Legend' were obtained from the seed supplier

Seminis Vegetable Seeds-Poland. Ekolist-Warzywa contains (%m/m): N – 4, MgO – 5, S – 4,3, B – 0,56, Cu – 0,60, Fe – 0,67, Mn – 1, Mo – 0,004, Zn – 0,60. Florovit contains: N – 3%, K_2O – 2%, Cu – 70 mg·l^{-1}, Fe – 400 mg·l^{-1}, Mn – 170 mg·l^{-1}, Mo – 20 mg·l^{-1}, Zn – 150 mg·l^{-1}.

Melon seedlings were grown in a non-heated greenhouse. Before planting of seedlings in the field they were hardened off and vine tops were removed so that each plant had three leaves. The seedlings were moved permanently outdoors and planted in the first decade of June and covered with agrotextile which was removed at the beginning of florescence. When fruit buds were of walnut size, excessive buds were removed leaving the largest five on the plant. Moreover, fruit-bearing vines were shortened leaving two leaves located close to the bud. In addition, no fruit-bearing vines were removed.

At the beginning of florescence and following cutting, there were applied solutions of liquid foliar feeds Florovit and Ekolist + Urea which represent multi-nutrient fertilizers.

Harvest of fruit was performed once a week as fruit ripened. During the harvest there was determined marketable yield (kg·m^{-2}), average weight of marketable fruit (kg), number of marketable fruit (fruit·m^{-2}), flesh thickness (mm) and fruit flavour which was ranked 1–6 by 6 persons (note 6 obtained the tastiest fruit).

The results of the experiment were analysed statistically by means of the analysis of variance. The significance of differences was verified using Tukey test at P = 0.05.

Table 2. Mean air temperature and precipitation sums in the vegetation period of melon
Tabela 2. Średnie temperatury powietrza i sumy opadów atmosferycznych w okresie wegetacji melona

Years Lata	Temperature – Temperatura, °C				Rainfalls – Opady, mm			
	June czerwiec	July lipiec	August sierpień	September wrzesień	June czerwiec	July lipiec	August sierpień	September wrzesień
2005	15.4	19.7	16.9	14.6	48.9	94.1	24.9	18.0
2006	16.6	21.8	17.7	15.1	25.7	8.6	255.5	28.3
2007	18.2	18.5	18.6	13.1	59.9	70.2	31.1	67.6
Mean – Średnia 1951–1990	16.2	17.6	16.9	12.7	69.3	70.6	59.8	48.2

The weather conditions varied during the study years. Least favourable for melon growth and performance was the year 2006 which was characterized by a relatively high mean air temperature in addition to very irregular rainfall pattern (tab. 2). After drought in June and July, which curtailed growth and development of plants, the rainfall in August was 255 mm. Such considerable rainfall stimulated plant growth but also contributed to the development of fungus diseases, a substantial part of fruit being set too late to mature on time or cracked as a results of marked fluctuations in soil moisture. The years 2005 and 2007 received the amount of rain which favoured melon growth. The humid first half of the growing season was followed by less rain in August, which favoured fruit ripening. The August of 2007 was much warmer than in the years 2005 and 2006, which improved the melon fruit quality.

RESULTS AND DISCUSSION

Weather conditions in consecutive study years had a significant influence on the level of marketable yield, as well as average weight and number of marketable fruit (tab. 3–5). Significantly highest marketable yield (2.06 kg·m^{-2}), significantly highest average fruit weight (1.34 kg) and the most marketable fruit (1.55 fruit·m^{-2}) were obtained in 2007 when weather conditions favoured melon cultivation. The marketable yield, average weight and number of marketable fruit in 2005 were significantly higher than in 2006.

Marketable yields, average weights and numbers of marketable fruit of individual cultivars depended on weather conditions in the study years. In all the study years the highest was the marketable yield of 'Yupi'. 'Seledyn' and 'Gattopardo' in 2005 and 'Pacstart', 'Seledyn' and 'Gattopardo' in 2006 produced yields comparable with 'Yupi' whereas in 2007 the marketable yields of all the remaining cultivars were significant lower (tab. 3). In 2005 and 2007 the highest average weight of marketable fruit was delivered by 'Seledyn', and in 2006 by 'Legend' (tab. 4). In all the study years the highest number of marketable fruit per 1 m^2 was produced by 'Yupi' (tab. 5). 'Yupi' and 'Pacstart' produced a similar number of marketable fruit in 2005. However, in the following years the numbers of fruit of the remaining cultivars were significantly lower than 'Yupi'.

The kind of foliar feed formulation applied had a significant effect on the level of marketable yield. The marketable yield of Florovit-fertilized plants was on average by 0.23 kg·m^{-2} higher in comparison with the non-fertilized control, the difference being statistically significant. A tendency towards increasing yields was observed following an application of Ekolist+Urea which, however, was not statistically confirmed. Mareczek et al. [2000] showed that foliar feeding applied to supplement soil fertilization increased pumpkin yields in comparison with the treatments without foliar feeding. In the plots where no soil nitrogen fertilization was applied, foliar application increased the percentage of marketable yield in the total yield. In a study by Osińska and Kołota [1998] foliar fertilization applied four times over the period of intensive growth of white cabbage, cucumber and onion contributed to higher yields of good quality when the rate of nitrogen was reduced by half. Biesiada and Kołota [2001] showed that an application of half the NPK rate combined with five sprayings with Ekolist PK and Ekolist S significantly increased yields of white cabbage compared with the non-fertilized control. The foliar feed-related increases in marketable yield ranged from 5.2 to 9.4% in comparison with the soil-fertilized treatments. Rożek et al. [2000] harvested the highest total yield of carrot roots from the plots, in which soil fertilization with the half the mineral nitrogen rate was combined with foliar feeding. The least yields were harvested from the plots with natural nitrogen content in the soil and no foliar feeding.

In the present study no significant difference in the average weight of marketable fruit produced by Florovit- and Ekolist+Urea-fertilized plants were found. Following an application of both foliar fertilizers, the average weight of fruit was significantly higher than the weight associated with no foliar nutrition. The number of marketable fruit of Florovit-fertilized melon was significantly higher than the non-fertilized melon. An application of Ekolist resulted in the fruit number which did not differ from that for

Table 3. Effect of foliar feeding on the marketable yield level of six melon cultivars
Tabela 3. Wpływ dokarmiania dolistnego na wysokość plonu handlowego 6 odmian melona

Cultivar Odmiana	Marketable yield – Plon handlowy, kg·m^{-2}															
	2005 year – rok				2006 year – rok				2007 year – rok				Mean for foliar feeding Średnio dla dokarmiania dolistnego			Mean for cultivar Średnio dla odmian
	Kind of foliar feeding – Rodzaj dokarmiania dolistnego															
	I*	II*	III*	mean srednio	I*	II*	III*	mean średnio	I*	II*	III*	mean średnio	I*	II*	III*	
Pacstart	1.46	1.94	1.65	1.68	0.83	0.92	1.02	0.92	1.97	2.36	2.26	2.20	1.42	1.74	1.64	1.60
Yupi	2.12	2.12	2.49	2.24	1.08	1.40	1.26	1.25	3.07	3.45	3.03	3.18	2.09	2.32	2.26	2.22
Seledyn	1.87	2.23	2.03	2.04	0.75	0.74	0.95	0.81	2.13	2.13	2.43	2.23	1.58	1.70	1.80	1.69
Polydor II	1.43	1.63	1.23	1.43	0.58	0.84	0.51	0.64	1.23	1.13	1.13	1.16	1.02	1.20	0.96	1.08
Gattopardo	1.40	2.33	1.93	1.89	0.68	0.76	0.89	0.78	2.17	2.07	2.20	2.15	1.42	1.72	1.67	1.60
Legend	1.27	1.57	1.47	1.44	0.56	0.66	0.79	0.67	1.37	1.70	1.17	1.41	1.07	1.31	1.14	1.17
Mean Średnio	1.59	1.97	1.80	1.79	0.75	0.89	0.90	0.85	1.99	2.14	2.04	2.06	1.44	1.67	1.58	1.56

$LSD_{0.05}$ for – $NIR_{0,05}$ dla: years – lat = 0.17; kind of foliar feeding – rodzaju dokarmiania dolistnego = 0.17; cultivar – odmiany = 0.33; in interaction – we współdziałaniu: years – lata × kind of foliar feeding – rodzaj dokarmiania dolistnego = n.s. – n.i.; years – lata × cultivar – odmiana = 0.56; kind of foliar feeding – rodzaj dokarmiania dolistnego × cultivar – odmiana = n.s. – n.i.

I* – control; II* – Florovit; III* – Ekolist + Urea; I* – kontrola; II* – Florowit; III* – Ekolist + Mocznik

Table 4. Effect of foliar feeding on the average weight of marketable fruit of six melon cultivars
Tabela 4. Wpływ dokarmiania dolistnego na średnią masę owocu handlowego 6 odmian melona

Cultivar Odmiana	Average weight of marketable fruit – Średnia masa owocu handlowego, kg															
	2005 year – rok				2006 year – rok				2007 year – rok				Mean for foliar feeding Średnio dla dokarmiania dolistnego			Mean for cultivar Średnio dla odmian
	Kind of foliar feeding - Rodzaj dokarmiania dolistnego															
	I*	II*	III*	mean średnio	I*	II*	III*	mean średnio	I*	II*	III*	mean średnio	I*	II*	III*	
Pacstart	1.04	1.15	1.01	1.07	0.89	0.92	0.98	0.93	1.29	1.38	1.32	1.33	1.07	1.15	1.10	1.11
Yupi	1.14	1.15	1.25	1.18	0.81	0.90	0.82	0.84	1.10	1.20	1.28	1.19	1.02	1.08	1.12	1.07
Seledyn	1.45	1.50	1.59	1.51	0.91	0.92	1.01	0.95	1.59	1.47	1.59	1.55	1.32	1.30	1.40	1.34
Polydor II	0.90	0.96	0.92	0.93	0.86	1.13	0.85	0.95	1.26	1.40	1.45	1.37	1.01	1.16	1.07	1.08
Gattopardo	1.06	1.36	1.25	1.22	0.62	0.70	0.71	0.68	1.36	1.38	1.45	1.40	1.01	1.15	1.14	1.10
Legend	1.03	1.04	1.08	1.05	0.97	1.11	1.13	1.07	1.18	1.21	1.23	1.21	1.06	1.12	1.15	1.11
Mean Średnio	1.10	1.19	1.18	1.16	0.84	0.95	0.92	0.90	1.30	1.34	1.39	1.34	1.08	1.16	1.16	1.13

$LSD_{0.05}$ for – $NIR_{0,05}$ dla: years – lat = 0.05; kind of foliar feeding – rodzaju dokarmiania dolistnego = 0.05; cultivar – odmiany = 0.10; in interaction – we współdziałaniu: years – lata × kind of foliar feeding – rodzaj dokarmiania dolistnego = n.s. – n.i.; years – lata × cultivar – odmiana = 0.18; kind of foliar feeding – rodzaj dokarmiania dolistnego × cultivar – odmiana = 0.10

I* – control; II* – Florovit; III* – Ekolist + Urea ; I* – kontrola; II* – Florowit; III* – Ekolist + Mocznik

Table 5. Effect of foliar feeding on the number of marketable fruit of six melon cultivars
Tabela 5. Wpływ dokarmiania dolistnego na liczbę owoców handlowych 6 odmian melona

Cultivar Odmiana	The number of marketable fruit, fruit·m^{-2} – Liczba owoców handlowych, szt. ·m^{-2}															
	2005 year – rok				2006 year – rok				2007 year – rok				Mean for foliar feeding Średnio dla dokarmiania dolistnego			Mean for cultivar Średnio dla odmian
	Kind of foliar feeding – Rodzaj dokarmiania dolistnego															
	I*	II*	III*	mean średnio	I*	II*	III*	mean średnio	I*	II*	III*	mean średnio	I*	II*	III*	
Pacstart	1.40	1.70	1.63	1.58	0.94	1.00	1.06	1.00	1.53	1.71	1.71	1.65	1.29	1.47	1.47	1.41
Yupi	1.85	1.84	1.98	1.89	1.34	1.56	1.54	1.48	2.81	2.87	2.32	2.67	2.00	2.09	1.95	2.01
Seledyn	1.28	1.50	1.26	1.35	0.82	0.80	0.94	0.85	1.34	1.47	1.53	1.45	1.15	1.26	1.24	1.22
Polydor II	1.53	1.66	1.34	1.51	0.68	0.74	0.60	0.67	0.98	0.79	0.79	0.85	1.06	1.06	0.91	1.01
Gattopardo	1.34	1.73	1.53	1.53	1.10	1.10	1.27	1.16	1.59	1.49	1.53	1.54	1.34	1.44	1.44	1.41
Legend	1.24	1.51	1.35	1.37	0.58	0.60	0.70	0.63	1.16	1.41	0.98	1.18	0.99	1.17	1.01	1.06
Mean Średnio	1.44	1.66	1.52	1.54	0.91	0.97	1.02	0.97	1.57	1.62	1.48	1.55	1.31	1.41	1.34	1.35

$LSD_{0.05}$ for – $NIR_{0,05}$ dla: years – lat = 0.10; kind of foliar feeding – rodzaju dokarmiania dolistnego = 0.10; cultivar – odmiany = 0.20; in interaction – we współdziałaniu: years – lata × kind of foliar feeding – rodzaj dokarmiania dolistnego = n.s. – n.i.; years – lata × cultivar – odmiana = 0.35; kind of foliar feeding – rodzaj dokarmiania dolistnego × cultivar – odmiana = 0.19

I* – control; II* – Florovit; III* – Ekolist + Urea ; I* – kontrola; II* – Florowit; III* – Ekolist + Mocznik

Table 6. Effect of foliar feeding on the flesh thickness of six melon cultivars
Tabela 6. Wpływ dokarmiania dolistnego na grubość miąższu 6 odmian melona

Cultivar Odmiana	The flesh thickness – Grubość miąższu, mm															
	2005 year – rok				2006 year – rok				2007 year – rok				Mean for foliar feeding Średnio dla dokarmiania dolistnego			Mean for cultivar Średnio dla odmian
	Kind of foliar feeding – Rodzaj dokarmiania dolistnego															
	I*	II*	III*	mean średnio	I*	II*	III*	mean średnio	I*	II*	III*	mean średnio	I*	II*	III*	
Pacstart	37.7	41.7	33.7	37.7	33.0	35.7	36.0	34.9	39.3	37.3	39.0	38.5	36.7	38.2	36.2	37.0
Yupi	33.7	32.7	33.3	33.2	33.0	37.0	32.7	34.2	38.3	40.7	33.3	37.4	35.0	36.8	33.1	35.0
Seledyn	35.7	35.7	33.7	35.0	36.3	32.7	39.0	36.0	38.0	41.3	40.3	39.9	36.7	36.6	37.7	37.0
Polydor II	36.3	30.3	33.3	33.3	25.3	33.7	32.0	30.3	40.0	43.3	43.7	42.3	33.9	35.8	36.3	35.3
Gattopardo	35.7	34.0	34.7	34.8	33.0	33.7	34.7	33.8	39.3	29.7	41.0	36.7	36.0	32.5	36.8	35.0
Legend	35.7	32.0	32.7	33.5	34.3	38.0	38.0	36.8	33.7	37.0	34.7	35.1	34.6	35.7	35.1	35.1
Mean Średnio	35.8	34.4	33.6	34.6	32.5	35.1	35.4	34.3	38.1	38.2	38.7	38.3	35.5	35.9	35.9	35.7

$LSD_{0.05}$ for – $NIR_{0,05}$ dla: years – lat = 2.5; kind of foliar feeding – rodzaju dokarmiania dolistnego = n.s. – n.i.; cultivar – odmiany = n.s.– n.i.; in interaction – we współdziałaniu: years – lata × kind of foliar feeding – rodzaj dokarmiania dolistnego = n.s. – n.i.; years – lata × cultivar – odmiana = 5.4; kind of foliar feeding – rodzaj dokarmiania dolistnego × cultivar – odmiana = 3.4

I* – control; II* – Florovit; III* – Ekolist + Urea ; I* – kontrola; II* – Florowit; III* – Ekolist + Mocznik

Table 7. Effect of foliar feeding on the fruit flavour of six melon cultivars
Tabela 7. Wpływ dokarmiania dolistnego na smakowitość owoców 6 odmian melona

Cultivar Odmiana	The fruit flavour, scale 1–6 – Smakowitość owoców, skala 1–6															
	2005 year – rok				2006 year – rok				2007 year – rok				Mean for foliar feeding Średnio dla dokarmiania dolistnego			Mean for cultivar Średnio dla odmian
	Kind of foliar feeding – Rodzaj dokarmiania dolistnego															
	I*	II*	III*	mean średnio	I*	II*	III*	mean średnio	I*	II*	III*	mean średnio	I*	II*	III*	
Pacstart	4.17	4.00	4.50	4.22	4.33	3.83	4.00	4.05	4.50	4.67	4.83	4.67	4.33	4.17	4.44	4.31
Yupi	4.33	5.33	5.00	4.89	4.17	4.83	4.83	4.61	5.00	5.17	5.33	5.17	4.50	5.11	5.05	4.89
Seledyn	3.63	3.67	3.73	3.68	3.50	3.67	3.83	3.67	3.40	3.67	3.50	3.52	3.51	3.67	3.69	3.62
Polydor II	4.33	5.00	4.67	4.67	4.00	4.50	4.33	4.28	4.83	4.83	5.00	4.89	4.39	4.78	4.67	4.61
Gattopardo	5.00	5.17	6.00	5.39	4.83	4.17	4.17	4.39	4.00	5.33	4.83	4.72	4.61	4.89	5.00	4.83
Legend	4.50	4.83	4.67	4.67	3.67	3.83	3.50	3.67	5.00	5.00	4.83	4.95	4.39	4.55	4.33	4.42
Mean Średnio	4.33	4.67	4.76	4.59	4.08	4.14	4.11	4.11	4.46	4.78	4.72	4.65	4.29	4.53	4.53	4.45

$LSD_{0.05}$ for – $NIR_{0,05}$ dla: years – lat = 0.17; kind of foliar feeding – rodzaju dokarmiania dolistnego = 0.17; cultivar – odmiany = 0.37; in interaction – we współdziałaniu: years – lata × kind of foliar feeding – rodzaj dokarmiania dolistnego = n.s. – n.i.; years – lata × cultivar – odmiana = 0.64; kind of foliar feeding – rodzaj dokarmiania dolistnego × cultivar – odmiana = 0.30

I* – control; II* – Florovit; III* – Ekolist + Urea ; I* – kontrola; II* – Florowit; III* – Ekolist + Mocznik

Florovit. Additionally, it was not significantly higher than the control fruit number. Kowalska et al. [2006] showed in their studies that foliar feeding had no significant influence on lettuce head weight and yield. In turn, Osińska and Kołota [2002] demonstrated that foliar feeding of crisphead lettuce by 30.7% increased the unit weight of marketable lettuce. In the study by Mareczek et al. [2000] the share of marketable yield pumpkin fruit was significantly higher following foliar application of Supervit-K compared with Microvit-2 and Urea.

Weather conditions in the successive study years significantly influenced melon fruit flesh thickness and flavour (tab. 6, 7). Significantly thickest was the flesh of fruit harvested in 2007. Compared with 2005 and 2006, the differences amounted to 3.7 and 4.0 mm, respectively. Fruit flavour in 2007 was ranked significantly higher (by 0.54 on average) compared with 2006.

In 2005 the highest rank for fruit flavour was given to 'Gattopardo' (5.39). 'Yupi' had a similar rank which did not differ statistically (4.89). In the years 2006 and 2007, the highest rank was given to 'Yupi', 4.61 and 5.17, respectively. The significantly lower rank was given to 'Seledyn' and 'Legend' in 2006, and 'Seledyn' in 2007. Gajc-Wolska et al. [2004] carried out studies regarding sensory assessment of melon fruit and found significant differences between cultivars regarding the following quantitative attributes: smell, texture and taste. In the above studies most desired ranks for smell, flavour and colour were associated with 'Pulsar', 'Legend' and 'Pacstart' fruit, whereas the least desired rankings were given to 'Yuma' and 'Yupi' fruit. Bett-Garber et al. [2002] assessed sensory properties of melon fruit and found that the cultivar 'Pacstart' had reduced quality indicators for smell and taste in comparison with 'Athena', 'Sol Real' and 'Primo'.

An interaction between kind of foliar feeding and cultivar for the flesh thickness and flavour of fruit was found. In the treatments in which Florovit was applied the thickest was the flesh of the cultivar 'Pacstart'. 'Yupi', 'Seledyn', 'Polydor II' and 'Legend' had similar flesh thickness whereas 'Gattopardo' flesh was significantly thinner (by 5.7 mm) than 'Pacstart'. In the treatments fertilized with Ekolist+Urea 'Seledyn' had the thickest flesh whereas the flesh of 'Yupi' was significantly thinner. In the non-fertilized control the tastiest was 'Gattopardo' fruit (4.61) whereas 'Seledyn' fruit was significantly less tasty (3.51). In the plots with foliar application of Florovit and Ekolist+Urea the tastiest fruit was for 'Yupi' (5.11 and 5.05, respectively), and significantly less tasty for 'Pacstart', 'Seledyn', 'Polydor II', and 'Legend'.

CONCLUSION

1. A higher yield, thickest flesh and better fruit flavour was achieved in 2007 with relatively high air temperature and low rainfall in August when melon finishes to grow.

2. Florovit-fertilized plants produced higher marketable yield and a higher number of marketable fruit than non-fertilized plants. Foliar feeding with both formulations investigated significantly increased the average fruit weight, flesh thickness and fruit flavour as compared to the non-fertilized melons.

3. The cultivar 'Yupi' produced the highest marketable yield and the greatest number of marketable fruit whereas 'Seledyn' was characterized by the highest average fruit weight.

4. 'Gattopardo' cultivated without foliar feeding and 'Yupi' and 'Gattopardo' fertilized with Florovit and Ekolist+Urea produced the best fruit in terms of their flavour.

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WPŁYW DOKARMIANIA DOLISTNEGO NA WYSOKOŚĆ I JAKOŚĆ PLONU SZEŚCIU WIELKOOWOCOWYCH ODMIAN MELONA (*Cucumis melo* L.)

Streszczenie. W doświadczeniu badano wpływ dokarmiania dolistnego Florowitem i Ekolistem – Warzywa z dodatkiem mocznika na wysokość i jakość plonu sześciu wielkoowocowych odmian melona (Pacstart, Yupi, Seledyn, Polydor II, Gattopardo, Legend) uprawianego w gruncie w warunkach klimatycznych środkowo-wschodniej Polski. Większy i lepszy jakościowo plon uzyskano w latach o dość wysokiej temperaturze powietrza i małej ilości opadów w sierpniu, czyli pod koniec wegetacji melona. Z roślin dokarmianych Florovitem zebrano większy plon handlowy oraz większą ilość owoców handlowych, niż z uprawianych bez dokarmiania dolistnego. Dokarmianie oboma badanymi nawozami przyczyniło się do istotnego wzrostu średniej masy, grubości miąższu i smakowitości owoców w porównaniu do zebranych z roślin nienawożonych dolistnie. Największy plon handlowy oraz najwięcej owoców handlowych dała odmiana Yupi, największą średnią masą owocu charakteryzowała się odmiana Seledyn. Najsmaczniejsze były owoce odmiany Gattopardo uprawianej bez dokarmiania dolistnego oraz odmian Yupi i Gattopardo dokarmianych dolistnie Florowitem i Ekolistem z dodatkiem mocznika.

Słowa kluczowe: dokarmianie dolistne, Florowit, Ekolist-Warzywa, melon, plon, jakość

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