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YIELD QUALITY OF MELON (*Cucumis melo* L.) DEPENDING ON FOLIAR FEEDING

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Abstract. Foliar feeding of plants is an important supplementation of soil fertilization in vegetable cultivation. Foliar-fertilized plants deliver high yields of good quality at lower rates of mineral fertilization. In horticultural practice foliar fertilization is also recommended as the most effective method of supplying plants with nutrients under deficiency conditions. An experiment was established to evaluate an effect of foliar application with Florovit and combination Ekolist-Warzywa+Urea on the yield quality of six large-fruit melon cultivars ('Pacstart', 'Yupi', 'Gattopardo', 'Polydor II', 'Seledyn', 'Legend') cultivated in the climatic conditions of central-eastern Poland. The total yield was achieved from Florovit and Ekolist-fertilized plants did not differ significantly. A higher total yield was achieved from Florovit-fertilized plants compared with control object. 'Yupi' was characterised by higher total yields compared with the other cultivars. The greatest fruit number per 1 m^2 was set by 'Gattopardo'. On the basis of the results obtained it was found that, due to the highest share of marketable fruit, 'Yupi' is the cultivar recommended for cultivation under the growing conditions of central-eastern Poland. 'Seledyn' was gave at least unripe fruit whereas 'Pacstart' produced the lowest share of disease-affected fruit. An application of the foliar fertilizers reduced the total sugar and monosaccharides content in melon fruit. Regardless of the kind of foliar feeding, most dry matter in the fruit was produced by 'Pacstart', total sugar and monosaccharides by 'Yupi' and ascorbic acid by 'Legend'.

Key words: Ekolist-Warzywa, Florovit, foliar fertilizers, yield of fruit, nutritive value

INTRODUCTION

Foliar feeding of vegetable plants can effectively supplement soil fertilization. According to many authors the effect of foliar feeding on the yield level and quality is not unequivocal [Michalski 1998, Biesiada et al. 2000, Mareczek et al. 2000].

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The studies carried out by Osińska and Kołota [1998], Wójcik [1998], Biesiada et al. [2000], Kołota and Osińska [2000], Mareczek et al. [2000], and Jifon and Lester [2007] indicated that combined soil fertilization and foliar feeding improved yield and biological value of vegetables. In turn, Kowalska et al. [2006] and Smoleń et al. [2006] found that foliar feeding neither significantly increased lettuce and carrot yield nor improved yield quality.

According to Kołota and Osińska [2000, 2001], foliar feeding is an effective method of supplying nutrients during the period of intensive plant growth when it can improve plants mineral status and increase crop yield. In the study by Yildirim et al. [2007] and Kołota and Osińska [2001] broccoli, cabbage, cucumber and onion plants effectively respond to an application of foliar feeding which can also reduce fertilizer utilization irrespective of the soil conditions. According to Wójcik [2004], the rate of nutrient absorption by above-ground parts of a plant differs significantly depending on not only species but even cultivar.

The objective of the study was to determine an effect of foliar feeding with Florovit and the combination of Ekolist-Warzywa+Urea on the yield quality and selected components of nutritive value of six large-fruit melon cultivars.

MATERIALS 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 2.2% (tab. 1). Before experiment carry out 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.

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

Basic soil preplant fertilization included Azofoska at a rate of 10 kg per 100 m^2 of cultivated area. Azofoska contain (%): N – 13.6, P_2O_5 – 6.4, K_2O – 19.1, MgO – 4.5, B – 0.045, Mo – 0.09, Cu – 0.18, Mn – 0.27, Zn – 0.045, Fe – 0.27 [Sady 2000].

Effect of foliar feed formulation application (control without foliar feeding, double foliar application of Florovit (0.25%), double foliar application of Ekolist-Warzywa (0.5%) + Urea (0.1%)) on the yield quality of six large-fruit melon cultivars ('Pacstart', 'Yupi', 'Gattopardo', 'Polydor II', 'Seledyn', 'Legend') were investigated in the experiment. Florovit contain (%): N – 3, K_2O – 2, ($mg \cdot dm^{-3}$): Cu – 70, Fe – 400, Mn – 170, Mo – 20, Zn – 150. Ekolist-Warzywa contain (% 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. Urea CO $(NH_2)_2$ contain 46% N.

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 agrofibre which was removed at the beginning of flowering. 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 flowering and following cutting, there were applied solutions of liquid foliar feeds Florovit and Ekolist + Urea which represent multi-nutrient fertilizers.

Fruit harvest was performed once a week as fruit ripened. During the harvest there was determined the total yield ($kg \cdot m^{-2}$), total fruit number ($fruit \cdot m^2$) and the percentage share of marketable, unripe and disease-affected fruit (showing symptoms of decay) in the total fruit number. Marketable fruit harvested at the third date were sampled to perform chemical analysis in order to determine the following contents: dry matter – using the oven-drying gravimetric method, total sugars and monosaccharides – using the Luff Schoorl method, and ascorbic acid – using the Pijanowski method.

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 $P = 0.05$.

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. The years 2005 and 2007, weather conditions were more favourable for melon.

RESULTS AND DISCUSSION

The total yield of Florovit-fertilized plants averaged 2.70 $kg \cdot m^{-2}$ and was by 0.22 $kg \cdot m^{-2}$ higher than in the control without foliar feeding (tab. 2). The difference was statistically significant. An application of Ekolist+Urea was followed by no significant increase in the total yield compared with the control. However, according to Kołota and Osińska [2001], economical pre-plant fertilization with nitrogen combined by foliar feeding with Ekolist can constitute an important factor increasing vegetable yields. A fourfold application of foliar feeding with Ekolist in the period of intensive growth of vegetables resulted in high good-quality yields. In their study, Mareczek et al. [2000] observed the highest increase in total and marketable yields of pumpkin after a foliar

application of Urea and Supervit-K, compared with Microvit-2. In the study by Dzida and Jarosz [2005] foliar fertilization with magnesium-supplemented Plonochron at the rate of 1.5 g N·dm^{-3} substrate increased the total yield of tomato fruit as compared to the yields achieved from plants fertilized with a lower nitrogen rate (1.0 g N·dm^{-3}) and without foliar feeding. Yildirim et al. [2007] reported a significant influence of foliar feeding with Urea on the yield and quality of broccoli. Pre-plant nitrogen fertilization and foliar feeding with Urea increased broccoli head weight as well as weight and height of plants. These findings were confirmed in the research by Guvenc et al. [1995] in which foliar-applied Urea increased the yield and improved the quality of tomato fruit. Also Sady et al. [2005] found that foliar feeding with Supervit-R and Urea had a favourable influence on carrot yield level, irrespective of the nitrogen rate applied.

Table 2. Total yield (kg·m^{-2}) – mean for year 2005–2007
Tabela 2. Plon ogółem (kg·m^{-2}) – średnia z lat 2005–2007

Cultivar Odmiana	Kind of foliar feeding – Rodzaj dokarmiania dolistnego			
	I*	II*	III*	mean średnio
Pacstart	2.40	2.77	2.62	2.60
Yupi	2.94	3.19	3.10	3.08
Gattopardo	2.81	2.83	3.04	2.89
Polydor II	1.98	2.06	1.85	1.96
Seledyn	2.84	3.12	2.93	2.96
Legend	1.90	2.21	2.00	2.04
Mean – Średnio	2.48	2.70	2.59	2.59

$LSD_{0.05}$ for – $NIR_{0,05}$ dla: kind of foliar feeding – rodzaju dokarmiania dolistnego = 0.19.; cultivar – odmiany = 0.37; in interaction – we współdziałaniu: kind of foliar feeding – rodzaju dokarmiania dolistnego × cultivar – odmiana = n. s. – n. i.

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

The highest total yield of fruit was produced by 'Yupi'. Yields of 'Gattopardo' and 'Seledyn' were quite similar. Yields of 'Pacstart', 'Polydor II' and 'Legend' were significantly lower compared with 'Yupi'. The differences amounted to 0.48 kg·m^{-2}, 1.12 kg·m^{-2} and 1.04 kg·m^{-2}, respectively.

On the basis of the results obtained it was found that the total number of fruit per 1 m^2 significantly depended on the cultivar (tab. 3). 'Gattopardo' produced significantly more fruit as compared to 'Pacstart', 'Yupi' and 'Polydor II'. Significantly lowest was the number of fruit produced by 'Legend'.

Irrespective of the foliar feeding applied, the highest proportion of marketable fruit in the total number of fruit was produced by 'Yupi' whereas the lowest was the number of 'Gattopardo' and 'Polydor II' fruit (tab. 3). In the control without foliar feeding the proportion of marketable fruit of 'Yupi', 'Pacstart' and 'Legend' was respectively by 29.22%, 11.37% and 12.62% higher than 'Gattopardo', and by 23.25%, 5.40% and 6.65% higher than 'Polydor II'. In the Florovit-fertilized treatments the differences amounted to, respectively 29.63%, 14.62% and 15.76% compared with 'Gattopardo',

and 27.65%, 12.64% and 13.78% compared with 'Polydor II'. In the treatments where plants were foliar-fed with Ekolist+Urea the proportion of marketable fruit of 'Yupi', 'Pacstart', 'Seledyn' and 'Legend' was, respectively, by 24.69%, 7.57%, 7.76% and 10.09% higher compared with 'Gattopardo', and by 25.62%, 8.50%, 8.69% and 11.02% higher compared with 'Polydor II'. In the studies by Mareczek et al. [2000], foliar feeding of pumpkin increased the percentage share of marketable yield in the total yield. The share of marketable fruit number harvested from foliar-fed treatments was significantly higher following an application of Supervit compared with the control without foliar feeding. Kołota and Osińska [2001] found that foliar spraying with Ekolist increased the marketable yield of cabbage by 20.3%, cucumber by 7.3% and onion by 10.8%.

In the present studies the lowest share of disease-affected fruit both in the control and in the foliar-fed treatments with Florovit and Ekolist+Urea was recorded for 'Pacstart': 5.80%, 5.41% and 7.18%, respectively. The higher share of disease-affected fruit in the control and the treatments where both the investigated fertilizers were applied was recorded for 'Seledyn'. The difference between 'Pacstart' and 'Seledyn' in the Florovit- and Ekolist+Urea-fed treatments amounted to 26.62 and 20.17%, respectively (tab. 3).

The share of unripe fruit in the total number depended on the cultivar (tab. 3). The lowest share of unripe fruit was recorded for 'Seledyn' (30.64%). The share of unripe fruit of 'Pacstart' was by 21.52%, 'Gattopardo' by 16.67%, 'Polydor II' by 11.06% and 'Legend' by 14.47% higher.

In the present studies, analysis of selected components of nutritive value of melon (tab. 4) indicated a significant interaction of the kind of foliar feeding applied and cultivar.

Significantly higher dry matter and total sugar contents were found in the fruit of 'Yupi', 'Pacstart', 'Legend', compared with 'Polydor II' and 'Gattopardo' in the control and the foliar fed treatments where Florovit and Ekolist+Urea were applied. Irrespective of the kind of foliar feeding applied, lower dry matter and total sugar contents were recorded in the fruit of 'Seledyn'.

The highest monosaccharide content was found in the fruit of 'Yupi' irrespective of the kind of foliar feeding applied. In the Florovit and Ekolist-fed treatments, the fruit of 'Pacstart' had significantly more monosaccharides compared with 'Polydor II', 'Gattopardo' and 'Legend'. Regardless of the kind of foliar feeding, the significantly lowest content of monosaccharides was recorded in the fruit of 'Seledyn'.

In the control and in the Ekolist-fed treatments the highest was ascorbic acid content in the fruit of 'Legend' whereas in the Florovit-fed treatments the vitamin C content in fruit was found in 'Pacstart' and 'Legend'.

In the studies of many authors foliar feeding did not have an influence on the biological value of vegetables [Kołota and Biesiada 2000, Mareczek et al. 2000, Kowalska et al. 2006, Smoleń et al. 2006]. In the studies by Biesiada et al. [2000], intensive soil and foliar fertilization of carrot slightly reduced total sugar and monosaccharide levels in the roots. However, foliar feeding had no significant influence on the dry matter and vitamin C content in tomatoes, which was also confirmed in the present studies. Yildirim et al. [2007] indicated that nitrogen fertilization supplemented by foliar feeding with Urea reduced vitamin C content in broccoli. In turn, Jifon and Lester [2007] found

Table 3. The percentage share of marketable, disease-affected and unripe fruit in the total number of fruit per 1 m^2 area – mean for year 2005–2007
Tabela 3. Udział owoców handlowych, porażonych przez choroby i niedojrzałych w łącznej liczbie owoców zebranych z powierzchni 1 m^2 – średnia z lat 2005–2007

Cultivar Odmiana	Total number of fruit, fruit·m^{-2} Łączna liczba owoców, szt. m^{-2}				Share of marketable fruit, % Udział owoców handlowych, %				Share of disease-affected fruit, % Udział owoców porażonych przez choroby, %				Share of unripe fruit, % Udział owoców niedojrzałych, %			
	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*	mean średnio
Pacstart	3.21	3.30	3.69	3.40	40.77	44.97	39.37	41.70	5.80	5.41	7.18	6.13	53.42	49.62	53.45	52.16
Yupi	3.39	3.45	3.42	3.42	58.62	59.98	56.49	58.37	9.52	7.75	11.84	9.70	31.86	32.27	31.66	31.93
Gattopardo	3.95	4.17	3.99	4.04	29.40	30.35	31.80	30.52	21.13	23.80	21.58	22.17	49.47	45.85	46.61	47.31
Polydor II	2.98	3.23	2.94	3.05	35.37	32.33	30.87	32.86	24.71	28.26	23.37	25.45	39.92	39.41	45.76	41.70
Seledyn	3.48	3.77	3.69	3.65	38.90	38.97	39.56	39.14	31.26	32.03	27.35	30.22	29.84	28.99	33.09	30.64
Legend	2.41	2.56	2.48	2.48	42.02	46.11	41.89	43,34	14.02	8.52	12.11	11.55	43.96	45.36	46.00	45.11
Mean – Średnio	3.24	3.42	3.37	3.34	40.85	42.12	40.00	40,99	17.74	17.63	17.24	17.54	41.41	40.25	42.76	41.48
$LSD_{0.05}$ for – $NIR_{0,05}$: kind of foliar feeding rodzaj dokarmiania dolistnego	n.s. – n.i.				n.s. – n.i.				n.s. – n.i.				n.s. – n.i.			
cultivar – odmiana	0.46				5.04				7.15				7.65			
kind of foliar feeding × cultivar rodzaj dokarmiania dolistnego × odmiana	n.s. – n.i.				4.76				4.81				n.s. – n.i.			

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

Table 4. The selected components of nutritive value of melon – mean for year 2005–2007
Tabela 4. Wybrane elementy wartości odżywczej melona – średnia z lat 2005–2007

Cultivar Odmiana	Dry matter Sucha masa, %				Total sugar, % f. m. Cukry ogółem, % św. m.				Monosaccharides, % f. m. Cukry redukujące, % św. m.				Ascorbic acid Kwas askorbinowy, mg·100 g^{-1}			
	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*	mean średnio
Pacstart	5.29	5.40	5.25	5.31	4.25	4.32	4.07	4.21	0.99	1.05	0.96	1.00	16.90	17.79	17.40	17.36
Yupi	5.40	5.14	5.32	5.28	4.43	4.09	4.22	4.25	1.18	1.08	1.14	1.14	17.23	17.39	17.29	17.31
Gattopardo	4.81	4.71	4.60	4.70	3.70	3.57	3.47	3.58	0.97	0.95	0.88	0.93	17.36	16.44	16.92	16.91
Polydor II	4.81	4.69	4.65	4.72	3.82	3.61	3.47	3.63	0.95	0.92	0.90	0.92	16.64	16.68	16.93	16.75
Seledyn	4.57	4.32	4.57	4.49	3.35	3.31	3.45	3.37	0.79	0.79	0.81	0.80	16.72	17.18	17.68	17.20
Legend	5.24	5.05	5.14	5.14	4.15	4.11	4.12	4.13	1.01	0.96	0.89	0.95	17.91	17.64	17.99	17.85
Mean – Średnio	5.02	4.88	4.92	4.94	3.95	3.83	3.80	3.86	0.98	0.96	0.93	0.96	17.13	17.19	17.37	17.23
$LSD_{0.05}$ for – $NIR_{0,05}$: kind of foliar feeding rodzaj dokarmiania dolistnego	n.s.-n.i.				0.15				0.05				n.s.-n.i.			
cultivar – odmiana	0.27				0.24				0.11				0.86			
kind of foliar feeding × cultivar rodzaj dokarmiania dolistnego × odmiana	0.23				0.23				0.07				0.92			

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

that supplemental foliar feeding of potassium during fruit development and maturation can improve melon fruit quality by increasing firmness, sugar content, and ascorbic acid and beta-carotene levels. According to Kołota and Osińska [2000], foliar feeding with Ekolist S and Mikrosol U did not cause changes in dry matter and vitamin C contents in tomato fruit but it did increase total sugar and monosaccharide contents.

CONCLUSIONS

1. The total yield was achieved from Florovit and Ekolist-fertilized plants did not differ significantly. A higher total yield was achieved from Florovit-fertilized plants compared with control object. 'Yupi' was characterised by higher total yields compared with the remaining cultivars.

2. Irrespective of the kind of foliar feeding applied, the greatest fruit number per 1 m^2 was produced by 'Gattopardo'. On the basis of the results obtained it was found that, due to the highest share of marketable fruit, 'Yupi' is the cultivar recommended for cultivation under the growing conditions of central-eastern Poland. 'Seledyn' was gave at least unripe fruit whereas 'Pacstart' produced the lowest share of disease-affected fruit.

3. The kind of foliar feeding had a significant influence on the total sugar and monosaccharide content in melon fruit. An application of the foliar fertilizers examined in the study reduced the content of these components, compared with the non-fertilized control.

4. Regardless of the kind of foliar feeding, most dry matter was produced by 'Pacstart', total sugar and monosaccharides by 'Yupi' and ascorbic acid by 'Legend'.

REFERENCES

Biesiada A., Kołota E., Osińska M., Michalak K., 2000. Wpływ nawożenia dolistnego na wybrane wskaźniki wartości odżywczej warzyw. Zesz. Nauk. AR Kraków, 364, 53–56.

Dzida K., Jarosz Z., 2005. Wpływ zróżnicowanego nawożenia azotem oraz dokarmiania pozakorzeniowego na plon i zawartość wybranych składników w liściach i owocach pomidora. Annales UMCS, sec. EEE, XV, 51–58.

Guvenc I., Padem H., Alan R., 1995. Effect of foliar application of different levels of urea on yield and yield component of tomatoes. II Turkey Nat. Hort. Symp. Adana, 178–183.

Jifon J. L., Lester G. E., 2007. Foliar fertilization of muskmelon. Effects of potassium source on market quality and phytochemical content of field-grown fruit. Symposium, Fluid Forum, Scottsdale, Arizona, 154–161.

Kołota E., Biesiada A., 2000. Wpływ nawożenia dolistnego na plon i jakość korzeni marchwi. Roczn. AR Poznań 323, Ogrodnictwo 31(1), 331–335.

Kołota E., Osińska M., 2000. The effect of foliar nutrition on yield of greenhouse tomatoes and quality of the crop. Acta Physiol. Plant. 22(3), 373–376.

Kołota E., Osińska M., 2001. Efficiency of foliar nutrition of field vegetables grown at different nitrogen rates. Acta Hort., 563, 87–91.

Kowalska I., Sady W., Szura A., 2006. Wpływ formy azotu nawozowego, dokarmiania dolistnego i miejsca uprawy na plonowanie i jakość sałaty. Acta Agrophysica, 7 (3), 619–631.

Mareczek A., Rożek S., Sady W., 2000. Wpływ pozakorzeniowego dokarmiania roślin na wielkość i jakość plonu dyni. Zesz. Nauk. AR Kraków, 364, 131–134.

Michalski P., 1998. Wpływ dokarmiania dolistnego na plonowanie i jakość owoców trzech odmian truskawki. I National Symp. "Mineral of plants nourishment", Skierniewice, 240–249.
Osińska M., Kołota E., 1998. Wykorzystanie Ekolistu w nawożeniu dolistnym warzyw polowych, uprawianych przy różnych dawkach azotu. Fol. Univ. Agric. Stetin. Agric. 190 (72), 247–252.
Sady W., 2000. Nawożenie warzyw polowych. Plantpress, Kraków.
Sady W., Smoleń S., Rożek S., 2005. Effect of differentiated nitrogen fertilization and foliar application on yield and biological quality of carrot crop. Hort. Veg. Growing 24(3), 273–281.
Smoleń S., Wojciechowska R., Sady W., Szura A., 2006. Wpływ formy azotu nawozowego i dokarmiania dolistnego na plon i gospodarkę azotową korzeni spichrzowych marchwi (*Daucus carota* L.). Acta Agrophysica 7 (3), 721–732.
Wojcik P., 2004. Uptake of mineral nutrients from foliar fertilization. J. Fruit Orn. Plant Res. Spec. ed., 12, 201–218.
Wójcik P., 1998. Pobieranie składników mineralnych przez części nadziemne roślin z nawożenia pozakorzeniowego. Post. Nauk Rol., 1, 49–64.
Yildirim E., Guvenc I., Turan M., Karatas A., 2007. Effect of foliar urea application on quality, growth, mineral uptake and yield of broccoli (*Brassica oleracea* L., var. *italica*). Plant Soil Environ., 53 (3), 120–128.

JAKOŚĆ PLONU MELONA (*Cucumis melo* L.) W ZALEŻNOŚCI OD ZASTOSOWANEGO DOKARMIANIA DOLISTNEGO

Streszczenie. Dokarmianie dolistne stanowi ważne uzupełnienie nawożenia doglebowego w uprawie warzyw, pozwala na uzyskanie wysokich i dobrych jakościowo plonów przy znacznie mniejszym zużyciu nawozów mineralnych. W praktyce ogrodniczej nawożenie dolistne jest stosowane jako najbardziej skuteczna metoda dostarczenia roślinom składników odżywczych w warunkach niedoboru. W doświadczeniu badano wpływ dokarmiania dolistnego Florowitem i Ekolistem-Warzywa z dodatkiem Mocznika na jakość plonu sześciu wielkoowocowych odmian melona ('Pacstart', 'Yupi', 'Gattopardo', 'Polydor II', 'Seledyn', 'Legend') uprawianego w warunkach klimatycznych środkowowschodniej Polski. Plon ogółem uzyskany z roślin dokarmianych Florowitem i Ekolistem z dodatkiem Mocznika nie różnił się istotnie. Większy plon ogółem zebrano z roślin dokarmianych Florowitem niż w obiekcie kontrolnym. Większym plonem ogółem w porównaniu z pozostałymi odmianami charakteryzowała się odmiana Yupi. Najwięcej owoców z 1 m^2 dała odmiana Gattopardo. Na podstawie uzyskanych wyników badań stwierdzono, że najbardziej przydatna do uprawy w warunkach środkowowschodniej Polski ze względu na największy udział owoców handlowych okazała się odmiana Yupi, najmniej owoców niedojrzałych dała odmiana Seledyn, a najmniejszym udziałem owoców porażonych przez choroby charakteryzowała się odmiana Pacstart. Zastosowane w doświadczeniu nawozy dolistne przyczyniły się do zmniejszenia zawartości cukrów ogółem i redukujących w porównaniu z obiektem kontrolnym. Niezależnie od rodzaju dokarmiania dolistnego najwięcej suchej masy zawierała odmiana Pacstart, cukrów ogólem i redukujących Yupi, a kwasu askorbinowego Legend.

Key words: Ekolist-Warzywa, Florowit, nawozy dolistne, plon owoców, wartość odżywcza

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