STUDIES ON THE CONSERVATION OF BIODIVERSITY OF THE TRADITIONAL YELLOW MELON GENETIC RESOURCES

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Abstract. The research was carried out between 2016 and 2017 at R&DSPCS Dăbuleni, on a sandy soil with low natural fertility. In the 0-20 cm soil layer, the content in organic carbon was 0.09-0.67% and a pH_{H2O} varied between 5.23 and 6.49. There were regenerated 18 yellow melon genotypes, preserved in Suceava Genebank, as part of a Project ADER 3.1.4, funded by MADR through the Sectoral Program 2015-2018. The obtained results showed a good behavior of the melon culture in the conditions of sandy soils. In case of the studied genetic resources of yellow melon, it was identified a great variety of physiological and morphological characteristics, which can be used in the future in the improvement of the existing varieties. Analyzing the diurnal variation of the photosynthesis according to the intensity of the active radiation, during the blooming phase, it was found that, at an active radiation between 1,800 and 1,815 µmol / m^2 / s, photosynthesis recorded the highest value of 30.97 µmol CO_2 / m^2 / s at 12 o'clock, with a consumption of 8.73 mmol H_2O / m^2 / s through the transpiration process. The correlation established with the second-order polynomial function between plant transpiration and photosynthesis, recorded at the three moments of the day during the blooming phase at the 18 melon genotypes reveals a distinct positive functional relationship (r = 0.393 **), which indicates the efficient utilization of water losses of up to 8.72 mmol H_2O / m^2 / s by accumulating a maximum of the photosynthesis rate of 36.33 µmol CO_2 / m^2 / s, in case of TEMP-1180 genotype. The best results in terms of fruit weight (1.8-2.3 kg) were recorded in the following genotypes: TEMP-288, TEMP-77, TEMP-1180, TEMP-1182, TEMP 1029. The soluble dry matter content varied in the range of 5-10%, being also a character of each variety, which can be influenced also by environmental conditions.

Keywords: plant, physiology, fruit, color, quality.

Rezumat. Studii asupra conservării biodiversității la resursele vegetale tradiționale de pepene galben. Cercetările au fost efectuate în perioada 2016-2017 la SCDCPN Dăbuleni pe un sol nisipos cu o fertilitate naturală redusă, având în stratul de sol 0-20 cm, un conținut de carbon organic de 0,09-0,67% și un pH_{H2O} de 5,23-6,49. Au fost regenerate 18 genotipuri de pepene galben păstrate în Banca de Gene de la Suceava în cadrul unui Proiect ADER 3.1.4., finanțat de MADR prin Programul Sectorial 2015-2018. Rezultatele obținute au evidențiat o comportare bună a culturii de pepene galben în condițiile solurilor nisipoase. În cadrul resurselor genetice de pepene galben luate în studiu, a fost identificată o diversitate mare a caracterelor fiziologice și morfologice, care pot fi utilizate pe viitor în procesul de ameliorare a soiurilor existente. Analizând variația diurnă a fotosintezei în funcție de intensitatea radiației active, în faza de înflorire a plantelor, se constată ca la o valoare a radiației active cuprinse între 1800-1815 µmol/m2/s fotosinteza a înregistrat cea mai mare valoare de 30,97 µmol CO2/m2/s la ora 12, cu un consum de 8,73 mmol H2O/m2/s prin procesul de transpirație. Corelația stabilită cu ajutorul funcției polinomiale de gradul 2, între transpirația plantei și fotosinteza înregistrată în cele trei momente ale zilei în faza de înflorire a plantelor la cele 18 genotipuri de pepene galben, evidențiază o legătură funcțională distinct semnificativ pozitivă (r = 0,393**), care arată valorificarea eficientă a pierderilor de apă de până la 8,72 mmol $H_2O/m^2/s$, prin acumularea a unui maxim al ratei fotosintezei, de 36,33 µmol $CO_2/m^2/s$, la genotipul TEMP-1180. Cele mai bune rezultate privind greutatea fructului (1,8-2,3 kg) s-au înregistrat la genotipurile: TEMP-288, TEMP-77, TEMP-1180, TEMP-1182, TEMP 1029. Conținutul de substanță uscată solubilă a variat în intervalul 5-10%, fiind un caracter de soi, care poate fi însă influențat și de condițiile de mediu.

Cuvinte cheie: plantă, fiziologie, fruct, culoare, calitate.

INTRODUCTION

Yellow melon (*Cucumis melo* L.) is an important crop in the world with a total annual production of 26.8 million tonnes and a cultivated surface of approximately 1.3 million hectares (***. FAO, 2007). It is grown for fruits that are consumed fresh, when reaching physiological maturity, being appreciated by consumers according to their taste, juiciness and special aroma. The fruit contains carbohydrates, proteins, vitamins (C, B1, B2, B6), carotene (orange mesocarp), mineral salts (Ca, P, K, Fe). The yellow melon is a thermophilous plant, with very high heat requirements, which finds good conditions for development in arid areas (CIUCIUC, 2003; CABELLO et al., 2009). Certain research made in Argentina on melon genotypes indicates the existence of major post-transplant stress, depending on temperature (BOUZO & KÜCHEN, 2012).

Changing the microclimate by soil mulching has a positive influence on the growth and development of melon plants (CIUCIUC, 2001). Plant requirements towards soil and water are lower because of the root system structure that gives the plant a greater resistance to drought and a better utilization of mineral elements (CIUCIUC, 2003; CASTELLANOS et al., 2011). Being a short day plant, the lack of light determines the stretching of seedlings and cultivated plants (CIOFU et al., 2003). Intense light influences favorably the accumulation of sugar in the fruit, and its lack, delays the ripening of the fruit. As agricultural lands decrease in surface, as well as water resources in availability, and diseases and pests incidence increases, it is essential to cultivate varieties of melon tolerant to drought and increased resistance to pathogens (PANAGIOTOPOULOS, 2001; RUBAIYAT SHARMIN & MAHABUBUR RAHMAN, 2014).

Conservation of biodiversity is a priority that results from the need to understand the combined functions of ecological and social agrobiodiversity, which are of major importance for both the ecosystem and society (PLATON, 2012). Traditional seeds, which are genetic resources in case of most plants, among which melon, were used and improved during the period when the system was organized at a small-scale in order to satisfy food requirements locally. Traditional amelioration was done under specific conditions, when there were not used practices that enhanced soil erosion or CO_2 emissions or chemical inputs; this is why traditional seeds are appropriate to support local economic systems. In this respect, the present study aims at conserving the characters in some melon genotypes stored in Suceava Genebank for the purpose of their use in the process of plant improvement.

MATERIAL AND METHODS

The researches were carried out during 2016-2017 at R&DSPCS Dăbuleni on a sandy soil with a reduced natural fertility; in the 0-20 cm soil layer, the content in organic carbon was of 0.09-0.67% and pH of H_2O varied from 5.23 to 6.49. From the point of view of NPK content, the sandy soil used in the experiments was characterized as poorly supplied with nitrogen (0.067-0.078%), well supplied with extractible phosphorus (70 ppm and 81 ppm) and poorly to medium supplied with exchangeable potassium (49 ppm and 123 ppm). There were regenerated 18 melon genotypes preserved in Suceava Genebank as part of a Project ADER 3.1.4, funded by MADR through the Sectoral Program 2015-2018. In this regard, the seeds of the used melon genotypes were planted in 6.2 cm diameter alveolar trays, filled with peat substratum (Photo 1), that were kept in plastic greenhouses, in a tunnel-protected system.

In the greenhouse, an optimal microclimate was provided by irrigation and ventilation, so that temperature did not fall below 14-15^{0}C at night and reached the optimum of 25-30 °C during the day. When seedlings reached 20-25 days, they were transplanted into the field; the soil registered a temperature of approx. 20-25 °C at that time, temperature that favors a normal growth of the root system and good absorption of water and mineral salts. There were made observations and determinations with regard to the plant resistance to diseases, plant vigor, weight, size and shape of the fruit, core color, soluble substance, seed dimensions. The physiology determinations (photosynthesis rate, foliar transpiration rate, stomatal conductance, active radiation in photosynthesis, leaf temperature) were performed during the blooming phase of plants, using the LC Pro+ Portable Photosynthesis Device.

RESULTS AND DISCUSSIONS

Analyzing the climatic conditions recorded in the field during the vegetation period of the yellow melon (May-July), we notice the increase of the drought in the studied period (2016-2017), compared to the multiannual average. The thermal regime is considerably higher, as a result of the increase of the average air temperature by about 1.45^{0}C, compared to the multiannual average. The reduction of the amount of precipitation by 17.86 mm compared to the average and maximum temperatures in the air above 40°C for several consecutive days, coupled with temperatures above 65°C at ground level and a low relative humidity of about 25%, act as stressors on plants, which dehydrate because of pronounced foliar transpiration. Under these circumstances, choosing specific plants for cultivation in these areas and finding solutions to counteract the negative effects of thermohydric stress is a necessary measure to promote sustainable agriculture in the area of sandy soils. Abiotic factors, including temperature, light, water and nutrients, can alter the action of genetic factors and therefore the size of the fruit or the development of physiological processes (KATSUMI et al., 1999).

The plants perform their metabolic processes optimally at 80-85% relative humidity. Air humidity or hygroscopicity decreases as temperatures increase to 30%. In the period of fruit formation, the high temperatures of 35-40ºC cause rapid maturation, to the detriment of their quality. Water requirements are moderate due to the root system structure better developed than in case of cucumbers and watermelons. In the active growth phase, the soil moisture must be 65-70% of the field capacity, and during the flowering-fructification period 70-75%.

The excess moisture determines the decrease of the sugar content. Yellow melons prefer medium light soil with a good structure and a pH of 6-7. The results obtained by SIMSEK & COMLEKCIOGLU (2011) highlight that melon can be grown successfully in semi-arid areas in Turkey, where annual precipitation amounts are between 314.1 and 364.2 mm. From a climatic point of view, the area of sandy soils in southern Oltenia, where the experiment was located, has a temperate continental character, with a slight Mediterranean influence; the multiannual rainfall amount is 505.4 mm, but the amounts are unevenly distributed during the year (TOMA et al., 2011), which requires careful selection of plant species in culture. The same author mentions that the annual sum of sunlight hours in the area of psamosoils in southern Oltenia exceeds 2,000 hours, which makes this area have significant heliothermal resources that are successfully capitalized by melon and watermelon (Table 1).

Table 1. Analysis of climatic conditions recorded at ADCON Telemetry Weather Station located on R&DSPCS Dăbuleni in the vegetation period of *Cucumis melo*.

Period / Climate		May	June	July	Average (^{0}C)	∑ ^{0}C / mm
2016-2017	Monthly average temperature (^{0}C)	17.3	23.8	24.8	21.97	1998.97
	Monthly maximum (^{0}C)	32.9	41.2	40.8	41.2	
	Rainfall (mm)	91.5	35.3	76.2		111.5
Multiannual climate data 1956-2016	Monthly average temperature (^{0}C)	16.8	21.6	23.1	20.5	1865.5
	Sum of monthly precipitation (mm)	62.12	69.30	53.15		184.57

Throughout the melon growing season there have been reports of plant infections with *Fusarium oxisporium* (Schlecht.) *f. sp. niveum* and *Cucumis virus I* (Doolitte). The observations on plant resistance to pathogens highlight their differentiation according to the year of culture and genotype (Table 2). Thus, in 2016, the low temperatures associated with higher rainfall amounts, recorded during the first part of the vegetation period, favored the infection of the genotypes with pathogens (mean scores of 1.67-3.33). Thus, we may conclude that the plant loves heat and needs an optimal soil temperature of 20-25 $^{\circ}$C, which favors a normal growth of the root system and a good absorption of water and mineral salts. The studied genotypes had an indefinite increase and a differentiated plant force, most of them (72%) having an average plant force. Of the 18 studied genotypes, 13 were displayed a good resistance to pathogens, noted in the range of 1-2.

Table 2. Behavior of *Cucumis melo* genotypes in the pedoclimatic conditions of the sandy soil area.

Genotypes	**Plant resistance to *Fusarium oxisporium* and *Cucumis virus* (F.A.O. scoring system with grades on a scale of 1-9)**					**Plant vigor**	**Growth type of the plant**
	Stretching phase of the haulm		**Blooming-fructified phase**		**Average**		
	2016	**2017**	**2016**	**2017**			
SVGB-16821	3	1	5	2	2.75	7	2
TEMP-176	2	2	3	1	2	7	2
TEMP-231	2	1	3	1	1.75	5	2
TEMP-286	1	1	4	1	1.75	5	2
TEMP-287	1	1	3	2	1.75	5	2
TEMP-288	1	3	3	2	2.25	5	2
TEMP-289	3	2	3	1	2.25	5	2
TEMP-290	1	2	3	1	1.75	5	2
TEMP-467	2	1	5	2	2.5	5	2
TEMP-502	1	1	5	2	2.25	5	2
TEMP-514	1	1	5	2	2.25	7	2
TEMP-1029	1	1	3	2	1.75	5	2
TEMP-1180	2	1	2	1	1.5	7	2
TEMP-1182	2	1	3	1	1.75	5	2
TEMP-1183	1	1	1	2	1.25	5	2
TEMP-1184	2	1	3	1	1.75	5	2
TEMP-155	2	1	3	1	1.75	5	2
TEMP-77	2	1	3	2	2	7	2
Media	1.67	1.28	3.33	1.5	1.94	5.56	2
Average temperature (°C)	May- June 16.8 - 23.6	May- June 17.8 - 24	May- June 16.8 - 23.6	May- June 17.8 - 24	Legend of disease resistance: 1- very resistant 9- very sensitive	Legend: 3. small 5. average 7. Great	Legend: 1. determined 2. undetermined
Rainfall (mm)	May- June 104.4-53.2	May- June 78.6-17.4	May- June 104.4-53.2	May- June 78.6-17.4			

Photo 1. Obtaining melon seedlings in alveolar trays filled with peat substratum (original)

Photo 2. Physiological determinations with LC Pro + Portable Photosynthesis Device (original)

The research on the physiology of the plant at the 18 genotypes of melon grown in the sandy soil area of Dabuleni aimed to determine their tolerance to the thermo-hydric stress characteristic to the area. Taking into account the primary role in the formation of photosynthesis products, light is considered the main environmental factor influencing the photosynthesis process. Analyzing the diurnal variation of photosynthesis, depending on the intensity of active radiation, during the blooming phase, a positive correlation is found, which emphasizes the increase of CO_2 absorption through photosynthesis up to an active radiation value of 1,800-1,815 µmol / m^2 / s (Table 3).

At 12 o'clock, the determinations revealed that SVGB-16821, TEMP-288, TEMP-289, TEMP-1183, TEMP-155, TEMP-1180, TEMP-1180, TEMP-1180 genotypes present photosynthesis values exceeding 32 µmol CO_2 / m^2 / s (maximum value of 36.33 µmol CO2 / m^2 / s at TEMP-1180), while at 3 p.m., we mention SVGB-16821, TEMP-286, TEMP-288 and TEMP-1184 genotypes, in case of which photosynthesis also exceeds 30 µmol CO_2 / m^2 / s. During the day, as solar radiation increases, temperature increases as well, reaching 37.6 °C at the leaf level. At these temperature values, the capacity of the air to retain water vapor increases, which causes the relative air humidity to decrease and, consequently, intensifies foliar transpiration process.

The diurnal maximum was recorded at 3 p.m. at the TEMP-514 genotype (11.24 mmol H_2O / m^2 / s). Through foliar transpiration, the plants avoided overheating, the evaporated water being efficiently utilized, as the genotypes with the highest water loss also had the highest photosynthetic yield. As it prefers light and heat, the yellow melon is a plant tolerant to the thermo-hydric stress characteristic of this sandy soil area, with a high photosynthetic yield over the entire vegetation period. Plant dehydration occurs under the cumulative action of high temperatures in the air and low relative humidity, due to the pedological drought. Thus, the plant suction force increases to several dozen atmospheres inducing the increase of water loss on the foliage. Rainfalls have a beneficial effect on crop plants. They supply the soil with water, which will later be available to plants for a longer period, depending on the growing season, plant consumption and atmospheric conditions. Due to the well-developed root system, water requirements are moderate, which means a greater drought resistance of this species. The reactions of plants to drought action suppose different adaptation strategies, including morphological, physiological and molecular adaptations. Stomatal regulation of water loss is identified as the earliest reaction of plants o insufficient moisture (ŞTEFÎRŢĂ et al., 2013).

As temperature increases at the leaf level at 3 p.m., water conductivity of yellow melon leaves decreases to 0.66 mmol / m^2 / s, 39.5% less than the one registered at 12.00 o'clock. Under these conditions, the carbon dioxide assimilation by the leaves was reduced in the plant. The analysis of the correlation between the plant transpiration and the photosynthesis process, recorded at the three moments of the day during the blooming – fructification phases at the 18 melon genotypes (54 determinations) reveals a distinct significant positive functional relationship that shows an effective use of the water loss through transpiration up to 8.72 mmol H_2O / m^2 / s, for the accumulation of a maximum photosynthesis rate of 36.33 µmol CO_2 / m^2 / s at 12 o'clock at the TEMP-1180 genotype (Fig. 1).

Table 3. Daily variation of the physiological processes recorded in some *Cucumis melo* genotypes cultivated on sandy soils.

Genotype	9 a.m.			12 o'clock			3 p.m.		
	Photosynthesis rate µmol $CO_2/m^2/s$	Leaf transpiration rate mmol $H_2O/m^2/s$	Stomatal conductance for H_2O mmol/m^2/s	Photosynthesis rate µmol $CO_2/m^2/s$	Leaf transpiration rate mmol $H_2O/m^2/s$	Stomatal conductance for H_2O mmol/m^2/s	Photosynthesis rate µmol $CO_2/m^2/s$	Leaf transpiration rate mmol $H_2O/m^2/s$	Stomatal conductance for H_2O mmol/m^2/s
SVGB-16821	22.01	4.83	0.9	32.42	7.26	1.85	34.05	9.51	0.81
TEMP-176	14.73	3.92	0.42	26.84	6.44	1.01	19.53	9.39	0.88
TEMP-231	29.74	5.3	0.95	29.72	8.37	1.34	23.81	10.19	0.75
TEMP-286	28.31	6.38	1.95	28.52	9.44	2.11	32.54	10.61	0.87
TEMP-287	25.14	5.37	0.81	28.79	8.02	0.81	29.29	10.41	0.91
TEMP-288	30.17	5.2	0.62	32.96	8.96	1.02	32.22	10.02	0.86
TEMP-289	28.11	5.78	0.84	32.62	9.26	1.27	31	8.73	0.47
TEMP-290	27.03	5.13	0.54	31.83	8.49	1	27.22	8.84	0.5
TEMP-467	27.5	6.29	1.03	30.53	9.42	1.32	28.88	10.33	0.83
TEMP-502	25.02	5.58	0.76	31.49	9.85	1.23	25.49	7.83	0.39
TEMP-514	29.04	5.9	0.78	29.24	8.87	0.79	22.44	11.24	0.9
TEMP-1029	27.89	5.7	0.71	32.48	9.79	1.12	23.07	7.2	0.27
TEMP-1180	20.61	5.98	0.77	36.33	8.72	0.77	31.26	11.21	0.95
TEMP-1182	25.07	5.34	0.52	20.71	7.3	0.46	22.5	10.52	0.63
TEMP-1183	26.35	5.79	0.61	34.07	9.42	1.06	27.11	8.21	0.36
TEMP-1184	25.61	6.15	0.69	31.88	9.18	0.92	30.06	10.51	0.66
TEMP-155	26.89	6.05	0.63	34.38	9.22	0.91	25.17	9.45	0.48
TEMP-77	23.2	4.83	0.49	32.64	9.19	0.76	23.77	10.19	0.5
Average	25.69	5.57	0.77	30.97	8.73	1.09	27.19	9.68	0.66
Active photosynthesis radiation limit (µmol/m^2/s)	1408 - 1418			1800 - 1815			1728 - 1733		
Air temperature limit (^{0}C)	27.4 - 31.5			30.7 - 34.8			34.5 - 37.6		

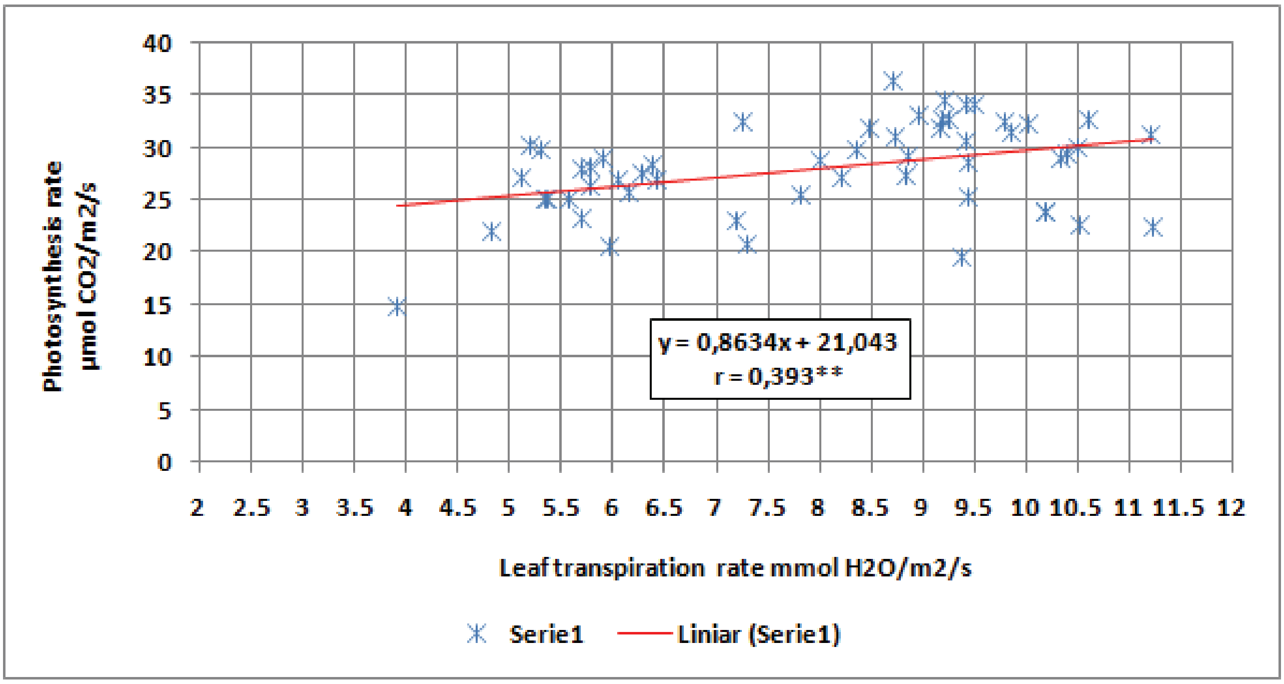

Figure 1. The relationship between transpiration and photosynthesis in *Cucumis melo* plant in the conditions of sandy soils from southern Oltenia.

The analysis of the morphological characters of melon genotypes (Table 4) highlights a wide range of the fruit shape, color and quality, enabling the breeder to select the desired character. The length of the melon fruit was in the range of 13.6-25.8 cm, with an average of 20.12 cm, while the diameter showed average values of 15.48 cm in the interval 11.1-23.6 cm, thus resulting different shapes of the fruit: oval, round, elongated. From the point of view of the exterior color of the rind, it was mostly yellow and the core presented different colors, the percentage of participation in the studied range being: 22.2% - green, 44.5% - yellow, 16.8% - orange, 5.5% - white, 5.5% - greenish yellow, 5.5% - whitish green (Photo 4). The soluble dry matter content ranged from 5-10%, being a variety character that can be influenced by climatic conditions.

The determinations regarding the size and weight of the seeds highlight a high variability in the weight of one thousand seeds (WTS), ranging from 23.7-45.7 g, with an average of 34.14 g (Photo 5). The length of the seed varied between the 9.1 and 11.8 mm, with an average of 10.62 mm; the width ranged between 4 and 5.2 mm, with an average of 4.62 mm. Corroborating the physiological and productivity determinations, the best results were obtained with the genotypes TEMP-288, TEMP-77, TEMP-1180, TEMP-1182, TEMP 1029, which recorded 1.8-2.3 kg / fruit.

Photo 4. Shape and color in some melon genotypes (original).

Photo 5. Seeds obtained from different melon genotypes (original).

Table 4. Variability of some morphological characters at the *Cucumis melo* genotypes studied in the conditions of sandy soils in southern Oltenia.

Genotype	**Fruit dimensions**		**Fruit weight kg**	**The shape of the fruit**	**The color of the rind**	**The color of the core**	**Soluble dry substance %**	**Seed characters**		
	Fruit length cm	**Fruit width cm**						**length (mm)**	**width (mm)**	**(WT S g**
SVGB - 16821	14.6	14.3	1.3	round	yellow	greenish	9	9.7	4.2	28.8
TEMP-176	24.3	13.2	1.4	elongate	yellow	yellow	7	9.9	4.3	30.4
TEMP-231	19.5	15.5	1.7	oval	yellow	orange	5	10.8	5.2	39.4
TEMP-286	22	23.6	1.5	round	yellow	Yellow	6.8	11.2	4.6	31.5
TEMP-287	19.5	15.3	1.7	oval	yellow	white	6	11.5	4.5	32.0
TEMP-288	22	16.7	2	oval	yellow	greenish	6.4	10.8	4.6	37.2
TEMP-289	14.6	14.6	1.1	round	yellow	yellow	7	9.1	4.7	34.3
TEMP-290	19.5	15.9	1.3	oval	yellow	yellow-greenish	8.2	10.6	4.5	31.4
TEMP-467	22.3	18.2	1.5	elongate	yellow	yellow	9	10.8	5.1	37.7
TEMP-502	23.6	14.6	1.6	elongate	yellow	yellow	8	10.5	4.4	39.3
TEMP-514	21	12.8	1.5	elongate	yellow	yellow	10	10.9	4.9	35.6
TEMP-1029	25.8	15	2.2	elongate	yellow	yellow	9.4	11.4	5.1	37.7
TEMP-1180	25	11.1	2.3	elongate	yellow-greenish	yellow	9	10.2	4.6	31.2
TEMP-1182	22.6	17.4	1.9	elongate	yellow	greenish	7.4	11.8	4.7	45.7
TEMP-1183	19.2	15.3	1.5	oval	yellow	orange	6.4	11.7	4.7	38.1
TEMP-1184	17.3	15.8	1.5	elongate	yellow-greenish	orange	6	11.0	4.9	34.1
TEMP-155	13.6	13.2	1	round	yellow	greenish	9	9.8	4.0	26.5
TEMP-77	16	16.1	1.8	round	yellow	greenish	9.2	9.4	4.1	23.7
Average	20.12	15.48	1.6				7.87	10.62	4.62	34.14
Maximum	25.8	23.6	2.3				10	11.8	5.2	45.7
Minimum	13.6	11.1	1				5	9.1	4	23.7

CONCLUSIONS

The obtained results revealed a good behavior of the melon culture in the conditions of sandy soils. Within the genetics of yellow melon studied between 2016 and 2017, a great diversity of physiological and morphological characters has been identified, which can be used in the future for the improvement of the existing varieties.

At a photosynthetic active radiation value of 1,800-1,815 µmol / m^2 / s, during the blooming phase, the melon genotypes recorded a maximum accumulation at 12 o'clock, when the average photosynthesis was 30.97 µmol CO_2 / m^2 / s and the water consumption through the transpiration process 8.73 mmol H_2O / m^2 / s.

The melon genotypes TEMP-288, TEMP-77, TEMP-1180, TEMP-1182, TEMP 1029 were the ones remarked due to the weight of their fruit of 1.8-2.3 kg.

The soluble dry matter content ranged from 5 to 10%, being dependent on the variety, which may be influenced by environmental conditions.

ACKNOWLEDGEMENTS

This research activity was carried out with the support of the Ministry of Agriculture and Rural Development, Romania, through the ADER Sectorial Program 2015-2018 and was funded by the ADER Project 3.1.4 / 01.10.2015.

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Received: March 23, 2018
Accepted: August 2, 2018