Midwest Personal-Size Triploid Watermelon Variety Trial in Southwest Indiana — 2011

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Introduction

In Indiana, melon production is a significant industry, particularly in the southwestern portion of the state. In total, there are nearly 10,000 acres of melons produced in the state including watermelon and cantaloupe (USDA, 2011).

A very small portion of that total acreage is as a result of personal-size watermelon production. When these small melons first became available in the market, they were sold at a premium. However, today there is no longer a premium for producing these types of melons, thus in Indiana, acreage is limited. Personal-size melons are no different than other melons in that variety selection is one important aspect for successful crop production. The objective of this trial was to evaluate personal-size watermelon varieties for growth under southwestern Indiana climatic conditions.

Materials and Methods

An experiment was established on April 14, 2011, when seeds of four personal-size watermelon varieties were sown in 50-cell black seedling flats (Crop Tech, Vincennes, IN) using a peat-based soilless media, Jiffy-Mix Grower's Choice Plus (Jiffy Products of America, Lorain, Ohio). The variety utilized as the pollenizer this season was SP-5 and it was also sown in the same manner as the other varieties. The field site was selected and prepared by tillage, bed formation, and installation of plastic mulch and drip irrigation.

Application of fertilizer was completed prior to bed formation in the following amounts: 350 lbs (46-0-0), 100 lbs (0-0-60), and 200 lbs of pelletized lime. Transplants were taken to the field on May 16, 2011, and planted in the designated plots as dictated by the randomized complete block design. Plants were irrigated as needed throughout the season and treated with pesticides as dictated by MelCast and presence of any arthropod pests. Plots were arranged in three 16-foot rows spaced 6 feet on center and plants were spaced 2 feet in-row for a total of 24 plants per plot. Pollenizers were planted in rows adjacent to the three-row plots.

Fruit were harvested from each variety on a weekly basis a total of five times starting July 28, 2011, and ending August 25, 2011. In addition to the harvest data, nine fruit from each variety were evaluated for internal quality parameters such as soluble solids, fruit firmness, length, width, rind thickness, and degree of seedlessness. Data were analyzed by Fisher's least significant difference test using SAS statistical programs (SAS Institute, Cary, NC.)

Results

Yield (fruit weight per acre or per plot) of RWT8225, RWT8212, and Little Deuce Coupe did not differ. RWT8225 had greater average fruit weight (7.1 lbs) as compared to the other three varieties (Table 1). All three varieties from Syngenta had greater yield and average fruit weight

as compared to the fourth variety, WTT9145 (Table 1). RWT8225, RWT8212, and Little Deuce Coupe had greater soluble solid content as compared to WTT9145 (Table 2).

Fruit length also followed this same trend. Fruit width, fruit firmness, and degree of seedlessness did not vary amongst any of the varieties evaluated this season. Based on the harvest and fruit quality results, the Syngenta varieties outperformed the one variety from Zeraim Gedera under southwestern Indiana conditions. Performance amongst the three Syngenta varieties was comparable amongst them with the exception of the RWT8225 having a greater average weight.

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Literature Cited

United States Department of Agriculture, 2011. National Agricultural Statistics Service. Vegetables 2010 Summary. http://usda01.library.cornell.edu/usda/current/VegeSumm/VegeSumm-01-27-2011.pdf.

Table 1. Harvest data of personal-size seedless watermelons.

Variety	Seed Company	Total Fruit Weight per Plot[1,2] (lb)	Weight per Acre (lb)	Average Weight (lb)	Total Fruit Number per Plot	Total Fruit Number per Acre	% 1st Harvest	% 2nd Harvest	% 3rd Harvest	% 4th Harvest	% 5th Harvest
RWT 8225	Syngenta	548.5 a	82,955 a	7.1 a	77.0	11,646	9.1	22.5	22.5	23.8	22.1
RWT 8212	Syngenta	543.0 a	82,134 a	6.3 b	86.7	13,108	11.2	25.4	23.8	16.5	23.1
Little Deuce Coupe	Syngenta	541.7 a	81,929 a	6.1 b	88.7	13,411	14.3	22.2	23.3	17.3	22.9
WTT-9145	Zeraim Gedera	316.9 b	47,933 b	5.1 c	62.3	9,428	4.3	13.4	25.1	27.3	29.9

[1]Plot size=288ft^2.
[2]Means in columns separated by Fisher's least significant difference test ($P \leq 0.05$), means with same letter are not significantly different.

Table 2. Internal fruit quality of personal-size seedless watermelons.

Variety	Seed Company	Brix[1,2]	Rind Thickness (in)	Fruit Length (in)	Fruit Width (in)	Firmness (lbs-force)[3]	Degree of Seedlessness[4]
RWT 8212	Syngenta	10.7 a	1.3 b	20.5 a	18.5	3.5	0.6
RWT 8225	Syngenta	10.6 a	1.9 a	20.5 a	19.5	3.3	0.2
Little Deuce Coupe	Syngenta	10.4 a	1.2 b	20.4 a	18.6	3.1	0.4
WTT-9145	Zeraim Gedera	9.2 b	1.7 a	17.2 b	17.4	4.7	0.1

[1]Brix: percent soluble solids. Higher values related to higher sugar content in the fruit.
[2]Means in columns separated by Fisher's least significant difference test ($P \leq 0.05$), means with same letter are not significantly different.
[3]Firmness-Pressure: firmness of the flesh of the melon. Higher value is associated with higher firmness.
[4]Degree of Seedlessness: 1=0 seeds; 2=1-5 seeds; 3=>5 seeds.