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Abstract

The 2006 watermelon cultivar trial evaluated 12 entrants, including several described as seedless Sugar Baby types, with the objective of identifying good quality cultivars that have distinctive characteristics suited for local marketing. Historically, Sugar Baby has been a popular cultivar for this market segment because of its earliness, attractive blackish green rind color, and convenient size. And when hybrids like Jade Star became available many growers switched because it looked similar to Sugar Baby but had improved yield, shelf life, and eating quality. Now we find consumer preference shifting toward seedless watermelons and to remain competitive in the market place growers need to be changing too. These trial results provide information on several seedless cultivars with characteristics that favor specific markets.

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Watermelon Cultivar Trial—2006

Vince Lawson, farm superintendent

Introduction

The 2006 watermelon cultivar trial evaluated 12 entrants, including several described as seedless Sugar Baby types, with the objective of identifying good quality cultivars that have distinctive characteristics suited for local marketing. Historically, Sugar Baby has been a popular cultivar for this market segment because of its earliness, attractive blackish green rind color, and convenient size. And when hybrids like Jade Star became available many growers switched because it looked similar to Sugar Baby but had improved yield, shelf life, and eating quality. Now we find consumer preference shifting toward seedless watermelons and to remain competitive in the market place growers need to be changing too. These trial results provide information on several seedless cultivars with characteristics that favor specific markets.

Materials and Methods

Planting. On April 19, 2006, planting was done in the greenhouse, with one seed per cell, in 72 cell trays filled with Metro Mix 360 growing media. Trays were placed on a heated bench to warm media to approximately 90°F. Once the majority of seeds had germinated and cotyledons were ready to emerge, the trays were removed from the heated bench and plants were grown at ambient air temperatures in the greenhouse until field transplanting on May 26.

Plot Design. A randomized complete block with three replications was used. The rows were 7 ft apart. A plot consisted of a single row of nine plants spaced 28 in. apart. The two end plants and the middle plant of each plot were cultivar Sangria, a diploid, used as a pollinator.

Culture. The soil type was a coarse, loamy-sand and plants were grown on clear plastic mulch with drip irrigation. Fertilizer was applied preplant incorporated under plastic mulch and

through trickle tubes during the growing season. Rates were determined by soil and plant tests.

Pest Control. Curbit and Sandea were the herbicides used; Capture, Furadan, and Sevin XLR were the insecticides; Bravo, Weather Stik, and Quadris were the fungicides.

Results and Discussion

Because of hard seed coats, triploid watermelon seed is notorious for being difficult to germinate. So the trial was started in the greenhouse using recommended germination procedures including carefully controlled temperature and moisture levels. Although conditions were uniform for all cultivars there were differences between them when stand counts were taken fourteen days after planting (Table 1). Percent emergence varied from 53% for Imagination to 100% for Jade Star. Palomar, Vanessa, Imagination, and 402 Seedless all showed some difficulty with germination and provided less than 75% emergence. Poor germination can be a cultivar trait or due to environmental factors such as temperature or seed age. Because of the cost of triploid watermelon seed, growers should investigate the history of the cultivar in this regard before ordering, and they should become familiar with germination techniques before attempting to plant.

The trial was transplanted to the field and grown on clear plastic mulch to enhance earliness. Favorable growing conditions, which were generally warm and dry, resulted in decent yields and good quality fruit. At 62 days from transplanting Jade Star was the first cultivar to produce ripe marketable fruit. All of the triploids matured a little later than Jade Star with Valdoria, Lamar, 402 Seedless, SXW 0017, Imagination, and Vanessa being the earliest. Miniput, Palomar, and Solitaire were the slowest cultivars to ripen taking 75 days from transplanting.

Yields were good but not as high as we have seen when conducting seeded cultivar trials. This is because yield per acre was calculated assuming every third plant was a pollinator and not contributing to marketable yield. Solitaire and Lamar were the best producers of marketable fruit both in number and cwt/acre (Table 1). Although we experienced several hot sunny days before harvest and most cultivars had dark rind color, surprisingly little sunburn was noted. When it did occur it was usually just a lightening of color on the top of the fruit and not judged severe enough to prevent marketability. This planting was trickle-irrigated daily and plants had good vine growth which may have helped minimize sunburn.

All cultivars produced fruit that were sweet, good tasting, and had high soluble solids as measured with a refractometer (Table 2). Hollow heart was seldom found and only in a few large fruit, particularly the cultivar Palomar. An important characteristic of seedless or triploid cultivar fruit is seedlessness. Sometimes empty but hard, dark seed coats will be found in fruit when grown under stressful environmental conditions or in the first picked fruit. This

objectionable trait varies in severity from one cultivar to another. In this trial Valdoria consistently produced hard, dark seed in almost all of its fruit. Imagination and SXW 0017 were noted to have a few hard seeds in some of the first picked fruit. The other cultivars produced the expected soft, white, undeveloped seed but were not noted to have any hard seed problems.

This is the first evaluation here for many of these cultivars and one season's experience is not enough to make recommendations. However, Imagination has been trialed before and shows merit because of its earliness, quality, and convenient size (11.4 lb avg.). Lamar, 402 Seedless, SXW 0017, and Millenium all performed well and might be recommended in the future if they continue to do well. Triple Threat and Palomar produced good quality, tasty fruit but their distinctive rind coloration and pinkish flesh may not fit all markets. Miniput and Solitaire were interesting because of small size and unusually firm sweet crunchy flesh. These 'mini' watermelons are definitely unique and will probably have to be marketed as such.

Table 1. Watermelon cultivar greenhouse emergence and marketable yield.

Cultivar	Seed source	Greenhouse emergence %	First pick ¹	Marketable fruit/acre ²	Yield cwt/acre ²
Solitaire	JS	89	Aug. 11	6,914	645.7
Lamar	HL	89	Aug. 3	5,411	530.6
402 Seedless	SW	61	Aug. 3	4,208	513.9
SXW 0017	NU	83	Aug. 3	4,359	508.2
Miniput	TW	89	Aug. 9	6,764	490.7
Palomar	RG	61	Aug. 9	3,307	488.0
Valdoria	NU	91	Aug. 1	5,862	473.1
Jade Star	TW	100	July 27	2,856	453.0
Triple Threat	RG	86	Aug. 5	3,457	438.4
Imagination	RG	53	Aug. 3	3,457	375.3
Millenium	HM	94	Aug. 5	3,758	368.4
Vanessa	NU	75	Aug. 3	4,208	330.4
Trial Average		81		4,547	468.0
LSD 5%				1,052	121.0

¹Transplanted to field onto clear plastic mulch May 26.

²Per acre yield assumes 1,708 triploid plants and 920 pollinators (no yield) per acre.

Table 2. Watermelon cultivar fruit characteristics and comments.

Cultivar	Avg. fruit wt. (lb)	Wt. range (lb)	% Soluble solids	Description and comments
Solitaire	9.0	6–12	12.0	Round, light green with wide dark stripes, unusually firm, crunchy flesh, slow to ripen.
Lamar	9.8	7–14	12.3	Round, dark green with black stripes, crisp and sweet.
402 Seedless	12.2	9–16	12.1	Round, dark green with black stripes, flesh, sweet, juicy, soft.
SXW 0017	11.8	7–16	12.3	Round, dark green with thin black stripes, a few hard seeds in early pick, crisp red flesh.
Miniput	7.3	5–10	12.2	Round, dark green, small “personal” sized melon, slow to ripen, flesh very firm and crunchy.
Palomar	14.7	11–18	12.0	Round, medium green with dark green stripes, crisp pinkish-red flesh had pleasing watermelon flavor.
Valdoria	8.1	6–10	11.5	Round, solid dark green, most fruit contained hard seeds.
Jade Star	15.8	10–24	11.8	Seeded (diploid), early maturity, popular hybrid “Sugar Baby” type, round black fruit, noted some sunburn.
Triple Threat	12.7	9–17	12.6	Round, medium green with dark green stripes, similar to Palomar but slightly earlier and smaller size, good quality, didn’t sunburn but tops would get light colored.
Imagination	11.4	8–15	12.2	Round, solid dark green, a few hard seeds in early pickings, 10 to 14 lb size and good flavor.
Millenium	10.1	7–17	12.7	Oval, dark green with thin black stripes, uniformly good.
Vanessa	7.5	5–9	11.7	Round, solid dark green, seed cavity area soft and mushy in some fruit.