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# Watermelon Cultivar Trial, 2007

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**Abstract**
The 2007 watermelon cultivar trial evaluated twelve entrants, including several described as seedless sugar baby types, with the objective of identifying good quality, distinctive cultivars suited for local marketing. Historically, Sugar Baby has been a popular cultivar for local marketing because of its earliness, attractive blackish green rind color, and convenient size. When hybrid cultivars like Jade Star became available, many growers switched because they looked similar to Sugar Baby but had improved yield,shelf life, and eating quality.Currently, we are seeing consumer preference shifting to seedless watermelons creating demand for seedless sugar baby types. These trial results provide information on several cultivars with characteristics fitting this specific market.

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# Watermelon Cultivar Trial, 2007

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## Introduction

The 2007 watermelon cultivar trial evaluated twelve entrants, including several described as seedless sugar baby types, with the objective of identifying good quality, distinctive cultivars suited for local marketing. Historically, Sugar Baby has been a popular cultivar for local marketing because of its earliness, attractive blackish green rind color, and convenient size. When hybrid cultivars like Jade Star became available, many growers switched because they looked similar to Sugar Baby but had improved yield, shelf life, and eating quality. Currently, we are seeing consumer preference shifting to seedless watermelons creating demand for seedless sugar baby types. These trial results provide information on several cultivars with characteristics fitting this specific market.

## Materials and Methods

*Location.* Trial was conducted at two locations: Horticulture Research Station, Ames, IA and Muscatine Island Research Farm, Fruitland, IA.
*Planting.* Trial planted in greenhouse on April 20, one seed/cell, in 98 cell trays filled with Metro Mix 360 growing media. Trays were placed on a heated bench to keep planting media at approximately 90$^{o}$F. At plant emergence, trays were removed from the heated bench and plants were grown at ambient air temperatures in the greenhouse until field transplanting on May 21 (both locations).
*Plot Design*. A randomized complete block design with three replications was used at both locations. A plot consisted of a single row of five plants spaced 24 in. apart. One plant of Side Kick was planted at both ends of the plot for pollination. Rows were 6-ft on center at Ames and 7-ft at Fruitland.
*Culture*. Ames: Trial was grown on loam soil with black plastic mulch and drip irrigation. All fertilizer broadcast preplant incorporated at 80-100-200 (N-$P_2O_5$-$K_2O$) lb/acre.
Fruitland: Trial was grown on coarse sand soil using clear plastic mulch with drip irrigation. Fertilizer was applied preplant incorporated under plastic mulch at 50-50-170 (N-$P_2O_5$-$K_2O$) lb/acre and an additional 60 lb/acre nitrogen through trickle tubes during the growing season.
*Pest Control*. Ames: Sandea and Strategy herbicide was applied in row middles. Capture insecticide for cucumber beetles and Bravo Weather Stik, Quadris, and Champion fungicides were applied for foliar disease control.
Fruitland: Prefar herbicide was applied under the clear plastic mulch and Curbit and Sandea were applied along mulch edges. Fanfair and Furadan insecticides were used for cucumber beetles and Acramite for spider mites. Bravo Weather Stik and Dithane fungicides were used for disease control.

## Results and Discussion

Triploid watermelon seed is notoriously difficult to germinate because of hard seed coats. Trial plants were started in the greenhouse using recommended germination procedures including heated germination bench and careful watering. When emergence counts were taken fourteen days after planting, differences between cultivars were noted (Table 1). Percentage plant emergence varied from 63% for Imagination to 100% for Jade Star. Imagination, Vanessa, 402 Seedless, and #9570 had the worst stands with emergence under 75%. Poor germination can be a cultivar trait or due to other factors such as temperature or seed age. Before buying expensive triploid watermelon seed, it is recommended growers become familiar with triploid seed germination techniques and cultivar characteristics.

The trial was conducted at two locations, the Horticulture Research Station in central Iowa near Ames and the Muscatine Island Research Farm, Fruitland, Iowa. The Ames site was a loam soil and produced good yields and fruit size. The Fruitland location had a coarse sand soil and although drip irrigation was used, a long period of drought during fruit filling probably caused some reduction in fruit size. Note that the average fruit weight for the trial was 11.7 lb at Fruitland and 16.0 lb at Ames (Tables 2 and 3). In the Fruitland trial Jade Star, Lantha, SXW 0017, Imagination, Vanessa, and Mini Yellow were the first cultivars to produce ripe fruit 67 days from transplanting. Miniput, #9651HQ, and #9570 were the slowest to ripen taking 78 days or more. At Ames, all cultivars matured about the same time and were first-picked on August 9.

Although we experienced several hot sunny days, surprisingly few fruit exhibited sunburn. And when they did it was usually just a lightening of the rind color on the top of the fruit hurting appearance but not enough to prevent marketability. The cultivars #9561HQ, #9570, and 402 Seedless most frequently showed these symptoms.

Imagination, although it can have emergence problems, continues to perform well in the field. Its seedless fruit mature reasonably early, are consistently attractive, of good quality, and usually weighed 11 to 14 lb. Lamar, 402 Seedless, SXW 0017, and Millenium have also performed well and are recommended for trial. Cultivars #9651HQ and #9570 are not really "sugar baby" types with their larger size and medium green coloration. However, they were very productive, excellent eating, and would be desirable in the right market. Vanessa produced attractive, nice fruit in the 7 to 10 lb range and would be a good choice when smaller fruit size is desired. Miniput bore the largest number of fruit but was slow to mature. Fruit size ranged from 8 to 12 lb and had very firm, crunchy, dark red flesh.

**Table 1. Watermelon seed source, seed emergence %, and trial comments**.

| Cultivar | Seed Source* | % Emerge** | Comments |
|---|---|---|---|
| #9651HQ | AC | 89 | Oval to round, medium green rind, bright red flesh firm crunchy good tasting. Rind color bleaches out on top of fruit. |
| #9570 | AC | 69 | Round, medium green rind, firm crisp flesh light red and sweet. Rind color bleaches out on top of fruit. |
| Miniput | TW | 89 | Round, black, slow to mature, flesh very firm and dark red. |
| Lamar | HL | 88 | Round, dark green with black stripes, flesh a little soft and spongy early pickings, later fruit good quality. |
| Millennium | HM | 91 | Blocky oval, dark green, light red flesh, excellent quality. |
| Imagination | RG | 63 | Round, blackish green, consistently good quality. |
| 402 Seedless | SW | 68 | Round to oval, dark green with slight striping, a few fruit had light sunburn, flesh sweet and juicy, sometimes a little soft. |
| SXW 0017 | NU | 77 | Round, dark green with thin black stripes, nice quality. |
| Lantha | RU | 100 | Round, black, seeded fruit, early maturity, good quality. |
| Jade Star | SW | 100 | Round,black, seeded, early maturity, good quality. |
| Vanessa | NU | 69 | Round, black fruit 7 to 10 lbs, good quality. |
| Mini Yellow | RU | 88 | Round, black fruit, yellow flesh. Good quality at Ames, Fruitland noted soft spongy flesh around hard seeds. |

*Seed Source: AC = Abbott & Cobb, HM = Harris Moran, NU = Nunhems, RG = RogersBrand/Syngenta, RU = Rupps, SW = Seedway, TW = Twilleys.

**Seed planted in 98 cell trays April 20 in greenhouse, stand counts taken 14 days later.

**Table 2. Cultivar yield and fruit characteristics at Horticulture Research Station, Ames, IA.**

| Cultivar | No. frt/plant | Yield cwt/acre | Avg. frt wt (lb) | Fruit width (in.) | Fruit length (in.) | Ratio len/width |
|---|---|---|---|---|---|---|
| #9651HQ | 1.9 | 1213.1 | 24.4 | 9.1 | 10.1 | 1.11 |
| #9570 | 1.4 | 930.2 | 24.2 | 10.0 | 11.5 | 1.15 |
| Miniput | 3.1 | 1022.7 | 12.1 | 8.3 | 8.3 | 1.00 |
| Lamar | 2.3 | 957.4 | 15.2 | 8.9 | 9.3 | 1.04 |
| Millennium | 1.7 | 767.0 | 16.6 | 8.4 | 11.3 | 1.35 |
| Imagination | 2.3 | 897.6 | 14.1 | 8.3 | 8.8 | 1.06 |
| 402 Seedless | 1.5 | 631.0 | 15.3 | 8.6 | 9.9 | 1.15 |
| SXW 0017 | 1.9 | 701.8 | 14.2 | 9.1 | 9.3 | 1.02 |
| Lantha | 1.3 | 636.5 | 17.0 | 10.1 | 10.3 | 1.02 |
| Jade Star | 1.5 | 696.3 | 17.4 | 9.0 | 9.4 | 1.04 |
| Vanessa | 1.3 | 331.8 | 9.9 | 7.7 | 7.9 | 1.03 |
| Mini Yellow | 1.5 | 462.4 | 11.0 | 8.0 | 8.2 | 1.03 |
| Average | 1.8 | 770.7 | 16.0 | | | |

**Table 3. Cultivar yield and fruit characteristics at Muscatine Island Research Farm, Fruitland, IA.**

| Cultivar | First pick* | No. frt/plant | Yield cwt/acre | Avg. frt wt (lb) | % Soluble solids |
|---|---|---|---|---|---|
| #9651HQ | Aug 6 | 3.4 | 1046.4 | 15.3 | 11.1 |
| #9570 | Aug 6 | 2.8 | 873.3 | 15.4 | 11.8 |
| Miniput | Aug 8 | 4.4 | 733.4 | 8.3 | 11.4 |
| Lamar | July 31 | 2.8 | 576.0 | 10.3 | 11.0 |
| Millennium | Aug 2 | 2.4 | 639.5 | 13.2 | 11.5 |
| Imagination | July 26 | 2.2 | 483.1 | 11.1 | 10.6 |
| 402 Seedless | Aug 2 | 2.7 | 651.0 | 12.2 | 11.3 |
| SXW 0017 | July 24 | 2.7 | 567.0 | 10.6 | 10.8 |
| Lantha | July 24 | 1.4 | 442.5 | 15.7 | 10.7 |
| Jade Star | July 24 | 1.3 | 342.7 | 12.9 | 10.3 |
| Vanessa | July 26 | 4.1 | 591.1 | 7.3 | 10.8 |
| Mini Yellow | July 24 | 2.4 | 409.8 | 8.4 | 11.5 |
| Average | | 2.7 | 612.5 | 11.7 | 11.1 |

*Transplanted onto clear plastic mulch May 21.