Icebox Watermelon Variety Trial 2004: Organic Production in Western Washington

Carol Miles, Gail Becker, Kathryn Kolker, Carolyn Adams, Jodee Nickel and Martin Nicholson

Washington State University Vancouver Research and Extension Unit
Supported by CSANR Organic Research Grant

Introduction

Icebox watermelons weigh between 6 and 15 pounds (2.7 - 6.8 kilograms) and are growing in popularity in the United States. Sugar Baby was the first icebox watermelon variety in the United States, and was discovered in a field of picnic watermelon in Oklahoma by M. Harden in 1955 (Wehner and Barrett, 1996). It was not until 1986 that the next icebox watermelon varieties were released (Maynard, 2004). Today, many new icebox varieties have been developed and released in the United States. Icebox watermelon come in a variety of shapes and colors, and their smaller size is ideal for small families and for storage in home refrigerators. With a rise in interest in organic produce, local production and direct marketing, farmers in Washington are looking to diversify crop varieties to meet these demands. The purpose of this study was to determine which varieties of icebox watermelon are most suitable for organic production in our region. Icebox watermelons offer organic and conventional farmers throughout Washington a means of producing high quality watermelons locally.

Methods

Forty-four varieties of icebox watermelon were grown and evaluated at Washington State University Vancouver Research and Extension Unit. The greenhouse and field were managed organically, however, some varieties were only available as chemically treated seeds. The plants from treated seed were grown separately in the field from the plants grown from untreated seed. Field blocks were separated by a 30 foot buffer. The field was certified organic, but certification was suspended for the area where treated seed varieties were planted. The study design was a randomized complete block with three replications. Plots were single rows, 20 feet long, with 7 plants per plot. Spacing was three feet between plants in the rows, and 10 feet between rows. Varieties were seeded in the greenhouse on April 12, 2004, and were transplanted into the field on May 26. Due to late delivery, one variety (Smile) was not seeded until 5/12 and transplanted on 6/24. Rows were mulched with black plastic (1.0 mil polyethylene), with drip tape beneath. Plants were drip-irrigated twice weekly for 4 hour intervals. Watermelons were harvested twice weekly from August 12 to October 4, 2004. Harvested melons were measured for weight, length and width, and number of fruit per plot. After each harvest, one melon per plot was measured for soluble solids using a Brix meter. The percent of soluble solids is an estimate of sugars, and is used to evaluate ripeness and flavor. General eating quality was evaluated five times throughout the course of this study.

Results & Discussion

Yield. Because plants from treated and untreated seeds were grown separately, we evaluated them separately as well. Results from the first year of this study show significant differences among varieties in yield, average melon weight, and number of marketable melons (Tables 1 and 2).

Of the untreated-seed varieties, Navajo Sweet, Winter King and Queen, Early Crimson Treat, and Tiger Baby produced the highest total marketable yields (Table 1). Golden Midget (personal size), Yellow Doll, Winter King and Queen, and Navajo Sweet produced the greatest number of fruit. Cathay Belle was the least productive variety in the untreated-seed plots, with the smallest total yield and below average number of melons per plot. Of the treated-seed varieties, Baby Doll (picnic type), Bobbie, Imagination, and Yellow Doll were highest yielding (Table 2). Gypsy, Mini Seedless, Bobbie, and Yellow Doll produced the greatest number of fruit. Lycosweet, Thai Black, and Desert King were the least productive, with very low total yields and fruit numbers.

Length and Width. Varieties grown in this study ranged in length from 15.8 to 24.6 cm, and in width from 12.9 to 22.5 cm. Comparisons of melon length and width data with melon weight indicate that current weight classifications do not adequately represent the size category for each watermelon (personal, icebox, or picnic). Current size classifications are: personal (<8 lbs), icebox (8-12 lbs), and picnic (>12 lbs). Based on the results of this study, a more accurate size classification system may be: personal (<6 lbs), icebox (6-15 lbs), and picnic (>15 lbs).

Days to Maturity. Because the demand for watermelon is highest in the summer, and ends after Labor Day, early maturity is a highly desirable trait for watermelon producers in Washington. Icebox watermelon varieties grown in this study ranged between 78 to 120 days from transplanting to maturity. Varieties grown from untreated seed took an average of 87 days to mature, and varieties grown from treated seed took an average of 93 days. Among the untreated-seed varieties, Smile was the first to mature (75 days after transplanting), while 9 varieties were ready for harvest 78 days after transplanting (Table 1). Ultra Cool (110 days), Southern Light (110 days) New Queen (104 days), and Gold Baby (104 days) matured very late. Among the treated-seed varieties, Gypsy and Imagination were the earliest to mature (82 days after transplanting), while Desert King (120 days), Valdoria (104 days), Extazy (104 days), and Baby Doll (104 days) were the latest. The late-maturing varieties were not ready for harvest until mid-September, thus these varieties may be undesirable to grow in our region.

Percent Sugars. A Brix meter measures % soluble solids (% sugars) and is a valuable tool for determining when a particular variety is ripe when the range of % soluble sugars at ripeness is known. In this study, the varieties sampled had a range of 7.2% to 10% sugars at maturity. Among untreated-seed varieties, those with the highest Brix readings were Petite Perfection (9.92), Hime Kansen (9.66), Ultra Cool (9.65), and Smile (9.60), and the varieties with the lowest Brix readings were Blacktail Mountain (7.32) and Melitopolski (7.41). Among the treated-seed varieties, Fenway (10.0) Mini Seedless (9.68), and Gypsy (9.51) had the highest Brix readings, while Thai Black (7.23) and Desert King (7.38) had the lowest. These results were generally lower than expected, as most seed companies estimate 10 to 12% sugars at maturity. The difference in expected and measured Brix may be due to climatic differences, but is more likely due to differences in sampling procedure.

Red Fleshed Varieties. The majority of the varieties included in this study, and the majority of icebox watermelon varieties that are available, are red fleshed. There was much variation among these varieties in shape, size, rind color, and seed content. There was also much variation in sweetness and flavor quality. Many of these varieties had excellent color, flavor, and appearance.

Yellow Fleshed Varieties. This study included 5 varieties with yellow flesh: Baby Doll, Gold Baby, New Queen, Orchid Sweet, and Yellow Doll. These melons tended to have above average % soluble sugars, and did

well in our taste tests. Orchid Sweet and Yellow Doll were the best overall in terms of flavor, yield, and days to maturity.

Cream Fleshed Varieties. This study included 4 varieties of icebox watermelon with cream colored flesh: Cream of Saskatchewan, Desert king, Japanese Cream-Fleshed Suika, and Melitopolski. All of these varieties had below average Brix readings, and tended to be mildly sweet and/or slightly tart. Japanese Cream Fleshed Suika was the best overall in terms of flavor, yield and days to maturity. These melons were preferred by some people in farmers market taste tests, and some suggested eating them with lime and salt.

Seedless Varieties. All of the seedless varieties in this study were red-fleshed except for Orchid Sweet, which has yellow flesh. The seedless varieties were: Bobbie, Extazy, Gypsy, Lycosweet, Mini Seedless, Orchid Sweet, Solitaire, Ultra Cool, Valdoria and Vanessa. Gypsy, Mini Seedless, and Orchid Sweet were the best seedless varieties overall in terms of flavor, yield, and days to maturity.

Conclusions

Preliminary results of this study indicate that over 40 varieties of icebox watermelon produce well when grown organically in our region. There is great diversity among these varieties in fruit yield, number, color, sugar content, flavor, size, and length of growing season. Preferences for fruit taste and appearance vary among different consumer groups, and growers who are considering production should test several varieties for productivity and taste preferences in their area.

Melon weight is used to distinguish between personal, icebox , and picnic varieties of watermelon, and traditionally, icebox watermelons are considered to be between 8 and 12 lbs. However, in this study we found that a large number of varieties produced an average melon weight between 6 and 8 lbs, but showed average lengths and widths that correspond with the general size concept of icebox watermelon. Additionally, several varieties produced an average melon weight of between 12 and 15 lbs, but were small enough in terms of length and width to be considered an icebox type. Based on these results, we suggest that the categories for watermelon should be: personal (<6 lbs), icebox (6-15 lbs), and picnic (>15 lbs).

Three varieties in this study should be considered “personal” size: Golden Midget, Hime Kansen, and Red Doll. All three of these varieties had average melon weights below 5 lbs, and average lengths and widths were significantly smaller than the study mean. Two varieties in this study could be considered picnic size: Baby Doll and Desert King. These varieties were much larger than average in length, width, and weight, which was greater than 15 lbs in both cases.

One challenge for organic growers is obtaining organic or untreated seed. Although placing a seed order early may help to ensure that untreated seed will be available, it is no guarantee. It is only through increased demand for untreated and organic seed that seed companies will begin to fill this need. It is work such as this study that has the potential to help increase demand for seed which will then result in increased availability of untreated and organic seed.

References:

Maynard, Don. 2004. Professor emeritus, University of Florida. Personal Communication.

Wehner, T.C. and Barrett, C. 1996. Watermelon Cultivars. http://cuke.hort.ncsu.edu/cucurbit/wmelon/wmcults.html

Table 1. Mean total yield (lbs), number of watermelons harvested per plot, average melon weight (lbs), average melon length and width (inches), mean Brix readings (% sugars), and number of days to harvest of icebox watermelon varieties grown from untreated seeds at Washington State University Vancouver REU in 2004.

Varieties with Untreated Seed	Total Marketable Yield (lbs)	Number of Melons harvested	Avg Melon Wt. (lbs)	Avg Melon Length (inches)	Avg Melon Width (inches)	Mean BRIX (% soluble sugars)	First harvest date	Days from Seeding (4/12)	Days from Transplant (5/26)
Belle 460	75.0	14.0	5.4	7.8	5.8	9.2	8/16	126	82
Blacktail Mountain	112.9	13.0	9.2	8.1	7.6	7.3	8/12	122	78
Cathay Belle	38.6	9.0	5.0	6.8	5.9	9.0	8/23	133	89
Cream of Saskatchewan	78.3	8.7	8.5	7.4	7.6	7.8	8/23	133	89
Early Crimson Treat	127.5	14.0	10.0	8.1	7.4	9.0	8/12	122	78
Genesis	51.6	6.0	9.4	8.1	7.5	9.3	8/23	133	89
Gold Baby	55.6	10.7	5.3	6.8	6.4	9.2	9/7	147	104
Golden Midget	78.7	19.8	3.9	6.4	5.4	7.5	8/12	122	78
Hime Kansen	46.7	13.0	3.7	6.2	5.1	9.7	8/19	129	85
Japanese Cr. Fl. Suika	114.1	11.3	9.5	8.3	7.9	8.7	8/30	140	96
Jubilee	85.6	8.7	8.7	7.5	7.2	8.6	8/12	122	78
Little Boy	70.6	12.3	6.0	7.6	6.2	9.6	8/16	126	82
Melitopolski	83.9	7.3	12.4	9.0	8.9	7.4	8/30	140	96
Navajo Sweet	186.2	16.7	11.6	8.2	8.2	8.5	8/12	122	78
New Queen	63.1	11.7	5.7	7.3	5.7	8.9	9/7	147	104
Orchid Sweet	110.8	12.0	9.4	8.3	8.1	9.0	8/12	122	78
Petite Perfection	55.3	9.3	5.3	7.0	6.3	9.9	8/12	122	78
Red Doll	60.0	11.3	4.9	6.6	5.7	9.2	8/16	126	82
Small Shining Light	97.5	12.0	8.0	7.1	7.5	7.8	8/30	140	96
Smile	106.0	16.2	6.5	7.3	6.7	9.6	9/8*	118	75
Southern light	56.2	7.7	7.2	6.6	6.8	8.5	9/13	153	110
Sugar Baby	53.5	6.6	7.8	9.7	5.5	7.6	8/12	122	78
Sweet Beauty	87.6	13.3	6.2	5.9	4.4	9.4	8/16	126	82
Tiger Baby	122.2	16.0	7.7	7.3	6.9	9.2	8/12	122	78
Ultra Cool	96.3	8.3	10.9	8.7	8.3	9.7	9/13	153	110
Winter King & Queen	160.1	17.3	9.4	7.6	7.2	7.9	8/26	136	92
Yellow Doll	91.7	18.0	6.1	7.6	6.7	9.3	8/23	133	89
Mean	87.6	12.0	7.6	7.5	6.8	8.8	8/21	131.0	87.2
P Value	0.0340	0.0809	0.0000	0.2074	0.0001	0.0000			

* Smile was seeded on 5/12 and transplanted on 6/24

Table 2. Mean total yield (lbs), number of watermelons harvested per plot, average melon weight (lbs), average melon length and width (inches), mean Brix readings (% sugars), and number of days to harvest of icebox watermelon varieties grown from treated seeds at Washington State University Vancouver REU in 2004.

Varieties with Treated Seed	Total Marketable Yield (lbs)	Number of Melons harvested	Avg Melon Wt. (lbs)	Avg Melon Length (inches)	Avg Melon Width (inches)	Mean BRIX (% soluble sugars)	First harvest date	Days from Seeding (4/12)	Days from Transplant (5/26)
Baby Doll	149.7	10.3	16.0	9.8	8.8	8.4	9/7	147	104
Bobbie (8101)	111.1	12.0	8.7	7.0	7.1	8.6	8/26	136	92
Desert King	42.2	2.3	18.1	10.5	9.6	7.4	9/23	163	120
Extazy 6008	69.8	10.0	7.4	7.2	7.1	9.3	9/7	147	104
Fenway	67.2	10.3	13.5	6.8	6.6	10.0	8/23	133	89
Gypsy	83.5	14.0	7.2	6.9	6.8	9.5	8/16	126	82
Imagination	95.1	9.3	10.0	8.6	8.1	8.7	8/16	126	82
Jade Star	50.9	5.0	10.8	8.3	7.5	8.0	8/30	140	96
Lycosweet 5109	34.6	4.0	9.7	7.4	7.0	9.3	8/23	133	89
Mini Seedless	79.1	12.3	6.9	6.9	6.1	9.7	8/23	133	89
Nova	66.7	6.0	9.3	8.0	7.8	9.0	8/23	133	89
Precious Petite	46.5	8.0	5.6	6.5	6.0	8.3	8/23	133	89
Quetzali	86.9	8.3	10.7	7.6	6.8	8.7	8/23	133	89
Solitaire	79.8	9.3	9.6	7.6	7.5	8.9	8/19	129	85
Sugar Baby	45.7	5.7	6.5	7.6	7.3	7.4	9/2	142	99
Thai Black	36.6	3.7	7.0	7.2	6.8	7.2	8/26	136	92
Tiger Baby	88.0	10.3	8.2	7.9	7.3	9.1	8/23	133	89
Valdoria	41.2	7.7	5.5	6.7	6.4	8.6	9/7	147	104
Vanessa	81.4	6.7	14.1	9.1	8.8	9.1	8/23	133	89
Yellow Doll	87.0	11.7	9.6	7.9	7.3	8.8	8/19	129	85
Mean	72.1	8.4	9.7	7.8	7.3	8.7	8/26	136.6	92.9
P Value	0.3424	0.2327	0.0002	0.0000	0.0000	0.0009			

Icebox Watermelon Variety Trial 2004
Watermelon Rind Thickness

Dr. Carol Miles & Kathryn Kolker
Washington State University, Vancouver Research and Extension Unit
1919 NE 78th St., Vancouver, WA 98665
(360)576-6030, milesc@wsu.edu, http://agsyst.wsu.edu

Watermelon rind is the area of white-colored flesh between the colored flesh (usually red or yellow) and the outer skin (Figure 1). Rind thickness varies between varieties and is an important factor in watermelon production. Rind thickness can affect a variety's suitability for shipping and its overall marketability. Varieties with thicker rinds may be more suitable for shipping, but a thinner rind may be more appealing to consumers. Watermelon rind can be cooked, pickled or eaten raw; and thick rinds would be desirable for these purposes.

Figure 1. Photos of watermelon varieties representing thin, average and thick rinds.

Mean rind thickness: 0.6 cm

Mean rind thickness: 1.4 cm

Mean rind thickness: 2.3 cm

In 2004 we conducted an icebox watermelon variety trial at WSU Vancouver REU. Icebox watermelon are generally between 6 and 12 lbs in weight, and are better suited for production in western Washington than larger picnic-size watermelon because they require fewer days to reach maturity. Our variety study included 47 varieties of icebox watermelon grown in an organic production system. The study design was a randomized complete block with four replications. Plots were 20 feet long by 8 feet wide, with 7 plants in each plot. Fruit weight, size, flavor, number of days from transplant to harvest, and overall yield were measured, and these results can be found in the project report, available on our website http://agsyst.wsu.edu/Watermelon.htm . Rind thickness was also measured, and the mean rind thickness was determined for each variety in the study. Rind thickness results are presented here.

Rind thickness in this study differed significantly among varieties and ranged from 0.1 to 3.8 cm (Table 1) The variety Ultra Cool had the thickest rind (3.8 cm), and Valdoria, Gypsy, Imagination, Lycosweet 5109, Genesis, and Melitopolski all had rinds thicker than 2 cm. Thai Baby was the smallest melon grown in this study, and had the thinnest rind measurement (0.1 cm). This variety is traditionally harvested in an immature stage and cooked as a vegetable in stir-fries and other Asian-style dishes; its thin rind is desirable for this purpose. A number of varieties grown in the study had rinds less than 1 cm thick. These included Petite Perfection (0.6 cm), Red Doll (0.6 cm), Gold Baby (0.7 cm), Cathay Belle, Smile, Hime Kansen, Golden Midget, and Little Boy (all 0.9 cm). There did not appear to be a correlation between rind thickness and the number of melons that cracked while still on the vine (Figure 2).

Table 1. Mean rind thickness of icebox watermelon varieties grown at WSU Vancouver REU in 2004.

Variety	Rind thickness (cm)	Variety	Rind thickness (cm)
Baby Doll	1.3	New Queen	1.1
Bambino	1.7	Nova	1.8
Belle 460	1.1	Orchid Sweet	1.4
Blacktail Mountain	2.0	Petite Perfection	0.6
Bobbie (8101)	1.5	Precious Petite	1.2
Cathay Belle	0.9	Quetzali	2.0
Cream of Saskatchewan	1.3	Red Doll	0.6
Desert King	2.2	Small Shining Light	1.3
Early Crimson Treat	1.4	Mini Seedless	1.2
Extazy 6008	1.5	Smile	0.9
Fenway	1.4	Soliataire	1.5
Genesis	2.3	Southern Light	1.1
Gold Baby	0.7	Sugar Baby	1.2
Golden Midget	0.9	Sweet Beauty	1.5
Gypsy	2.5	Thai Baby	0.1
Hime Kansen	0.9	Thai Black	1.8
Imagination	2.5	Tiger Baby	1.4
Jade Star	1.7	Ultra Cool	3.8
Japanese Cream Fleshed Suika	1.3	Valdoria	2.7
Jubilee	1.5	Vanessa	1.1
Little Boy	0.9	Winter King & Queen	1.7
Lycosweet 5109	2.2	Yellow Doll	1.3
Melitopolski	2.2		
Navajo Sweet	1.9	***P-value = 0.0000***	

Figure 2. Correlation of mean rind thickness and number of watermelon that cracked on the vine.

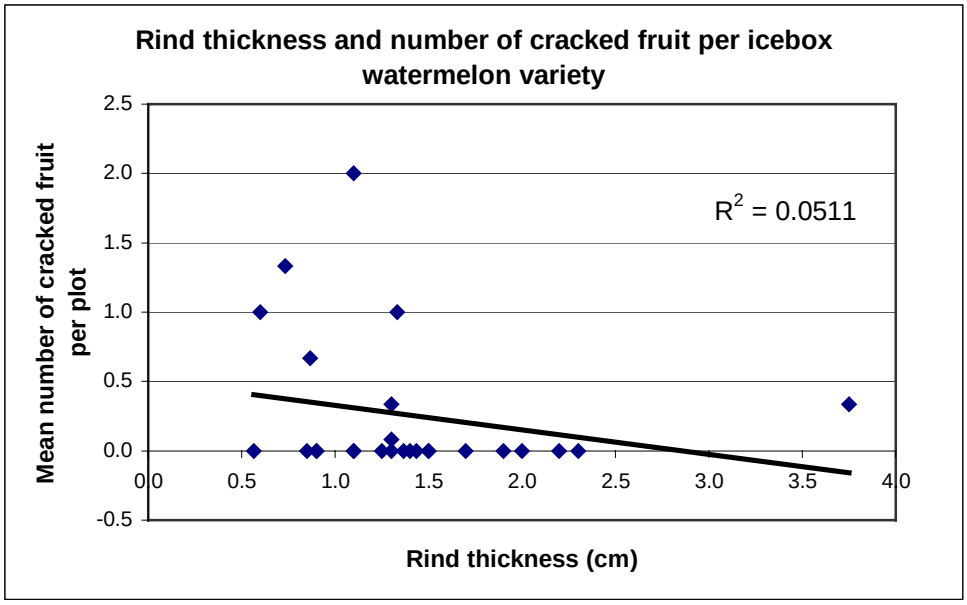


Table 2. Rind thickness and number of watermelons that cracked on the vine. Values represent the mean of 4 replicated plots (7 plants per plot).

Variety	Rind Thickness (cm)	Mean # Cracked	Avg Melon Wt. (lbs)
Bambino	1.70		
Belle 460	1.1	0.0	5.4
Blacktail Mountain	2.0	0.0	9.2
Cathay Belle	0.9	0.0	5.0
Cream of Saskatchewan	1.3	1.0	8.5
Early Crimson Treat	1.4	0.0	10.0
Genesis	2.3	0.0	9.4
Gold Baby	0.7	1.3	5.3
Golden Midget	0.9	0.0	3.9
Hime Kansen	0.9	0.7	3.7
Japanese Cream Fleshed Suika	1.3	0.0	9.5
Jubilee	1.5	0.0	8.7
Little Boy	0.9	0.0	6.0
Melitopolski	2.2	0.0	12.4
Navajo Sweet	1.9	0.0	11.6
New Queen	1.1	2.0	5.7
Orchid Sweet	1.4	0.0	9.4
Petite Perfection	0.6	0.0	5.3
Red Doll	0.6	1.0	4.9
Small Shining Light	1.3	0.3	8.0
Smile	0.9		6.5
Southern Light	1.1	0.0	7.2
Sugar Baby	1.3	0.1	7.8
Sweet Beauty	1.5	0.0	6.2
Tiger Baby	1.4	0.0	7.7
Ultra Cool	3.8	0.3	10.9
Winter King & Queen	1.7	0.0	9.4
Yellow Doll	1.3	0.0	6.1
Mean	*1.4*	*0.3*	*7.6*
P-Value	*0.0000*	*0.0834*	*0.0000*

Icebox Watermelon Variety Trial

Carol Miles, Kathryn Kolker, Gail Becker, Lydia Garth, Jenn Reed, and Tracy Smith
Washington State University, Vancouver Research & Extension Unit, 1919 NE 78th Street, Vancouver, WA 98665
Phone: 360-576-6030 Email: milesc@wsu.edu

Introduction

The first icebox watermelon variety was introduced in the U.S. almost 50 years ago (Maynard, 2004), but it is only recently that icebox watermelons have become commonly available in grocery stores and farmers markets throughout the U.S. Icebox watermelon weigh between 6 and 15 pounds, they come in a variety of shapes and colors, and there are more than 100 varieties to choose from. Icebox watermelons are rapidly gaining in popularity due to their small size, which is ideal for small families and for storage in home refrigerators. With a rise in interest in local food, direct marketing and organic production, farmers in Washington are looking to diversify crop types to meet these demands. Icebox watermelons offer farmers throughout western Washington a means of producing high quality watermelons locally. The purpose of this study was to determine which varieties of icebox watermelon are most suitable for organic production in our region.

Methods

This study was conducted at Washington State University Vancouver Research and Extension Unit. In 2004 we evaluated 44 varieties of icebox watermelon, and in 2005 we evaluated 101 varieties. The greenhouse for transplant production was managed organically, and varieties grown from organic and untreated seed were evaluated in a certified organic field while varieties grown from treated seed were evaluated in a neighboring field that was managed organically but was not certified. In 2004, this study included 27 varieties with untreated or organic seed and 20 varieties with treated seed. In 2005, 66 varieties of untreated or organic seed were included and 45 varieties with treated seed.

Both years the study design was a randomized complete block with three replications. Plots were single rows, 21 feet long, with 7 plants per plot. Spacing was three feet between plants in the rows, and 10 feet between rows. Varieties were seeded in the greenhouse on April 12, 2004 and April 21 2005, and were transplanted into the field on May 26, 2004 and June 6, 2005. The 2005 planting date was 2 weeks later than planned due to unfavorable weather conditions.

Plants were drip-irrigated twice weekly for 4 hour intervals for a total of 1-inch of water per week both years,. Rows were mulched with black plastic (1.0 mil polyethylene), with drip tape beneath. Plants were fertilized immediately after transplanting and four times throughout the growing season. Fertilizer was soluble fish powder (Mermaid 12-0.25-1) and soluble seaweed extract powder (Acadian 1-0-4 w/ trace minerals) applied through the irrigation system at a rate of 5 lb/A and 3 lb/A, respectively.

Ripe fruits were harvested twice weekly from August 12 to October 4, 2004, and August 22 to September 28, 2005. Due to difficulties in determining ripeness in the field in 2004, we investigated techniques for determining ripeness in the field in 2005. Techniques included evaluating optimum ground spot color, hollow sound of fruit, color/maturity of axial leaf at

harvest, and color/maturity of axial tendril at harvest. Harvested melons were measured for weight, length and width, and number of fruit per plot. After each harvest, one watermelon per plot was measured for percentage of soluble solids using a Brix meter. The percent of soluble solids is an estimate of sugars, and is used to evaluate sweetness and ripeness.

Results & Discussion

Because varieties grown from treated and untreated seeds were grown separately, we evaluated them separately as well. Although this study was designed to investigate productivity of icebox watermelons (6-15 lbs), we received, planted and evaluated several mini (<6 lbs) and picnic (> 15 lbs) varieties as well. Results are presented for varieties in each market group (mini, icebox and picnic). It is interesting to note that some varieties were variable in their classification from year to year. For example, Sugar Baby produced an average fruit weight greater than 6 lbs in 2004 (thus it was classified as an icebox type), but in 2005, average fruit weight was less than 6 lbs (thus it was classified as a mini type). As a result, some varieties could vary in classification from year to year.

2004 Yield. There were significant differences among varieties in yield, average watermelon weight, and number of marketable watermelons (Tables 1 and 2). Of the icebox varieties planted from untreated seed, Winter King and Queen, Ultra Cool, Early Crimson Treat and Navajo Sweet produced the highest total marketable yields (Table 1). Winter King and Queen, Navajo Sweet, Tiger Baby and Early Crimson Treat produced the greatest number of fruit per plant. Of the mini varieties grown from untreated seed, Little Boy, New Queen, Yellow Doll and Belle 460 were the highest yielding, while Yellow Doll, Golden Midget and Belle 460 produced the greatest number of fruit. Thai Baby also produced a large number of fruit, but we later learned that this watermelon is not eaten as a mature fruit, but rather is harvested at an immature stage and cooked as a vegetable. Sugar Baby (icebox) and Red Doll (mini) were the least productive varieties in the plots that were planted from untreated seed, with the smallest total yield and below average number of watermelons per plot.

Of the icebox varieties grown from treated seed, Baby Doll, Imagination, Valdoria and Tiger Baby produced the highest total marketable yields (Table 2). Mini Seedless, Extazy 6008, Valdoria and Yellow Doll produced the greatest number of fruit. Lycosweet and Jade Star were the least productive, with very low total yields and fruit numbers. Of the mini varieties, Solitaire produced the highest total marketable yield and number of fruit. The single picnic variety included was Desert King, and it produced low total marketable yield and number of fruit.

2005 Yield. There were no significant differences in number of fruit per 10 plants and in days to maturity for icebox-sized varieties grown from untreated seed (Table 3). Icebox varieties did differ significantly in total yield per 10 plants, and the highest yielding varieties were Imperial, Early Moonbeam, Sugar Baby, Crimson Sweet and Verona. Mini varieties differed significantly in yield and number of fruit per 10 plants. Jade Star, Yellow Doll and Sugar Baby were the highest yielding varieties, while varieties that produced the most fruit were Yellow Doll, New Hampshire Golden Midget and Diana. For picnic-sized varieties, there were no significant differences in yield, however the variety that tended to produce the highest yield and the most fruit and was HSR 2920.

There were no significant differences in yield among the icebox and mini varieties grown from treated seed (Table 4). However, for the icebox varieties, Super Crisp 85, Madrid and Quetzali tended to produce the highest yield, while SXW0017, Super Crisp 85, and Sun Ray tended to produce the most number of fruit. Of the mini varieties, Vanessa, Extazy and Mini Yellow tended to produce the highest yield, while Wonder, Vancessa and Extazy tended to produce the most number of fruit. The single picnic variety included in this portion of the trial was Desert King, and it produced low total marketable yield and number of fruit.

Length and Width. Varieties differed significantly in fruit length and width both years. For all three market groups, shape varied from round, to oval, to elongated. We conducted farmers market surveys in both 2004 and 2005 and found that consumers generally appeared to perceive round watermelons to be cantaloupe or other melon types. Some education including taste samples where feasible may be required to address this issue.

Days to Maturity. The demand for watermelon is highest in the summer, and our market surveys indicate that demand tapers off dramatically after Labor Day. Decreasing market demand in September combined with decreasing temperatures make early maturity a highly desirable trait for growers in Washington. There were no significant differences in days to maturity among types of watermelon. That is, in this study mini varieties did mature earlier than either icebox or picnic varieties. The picnic varieties that were included in this study were selected based on their early days to maturity. Within each watermelon type, varieties did not differ significantly in days after transplanting to maturity either year, but in 2004 days to maturity ranged from 82 to 103 days, and in 2005 days to maturity ranged from 82 to 110 days (Tables 1-4). In 2004, varieties that matured by 82 days after transplanting were Japanese Cream Fleshed Suika, Navajo Sweet, Small Shining Light, Cathay Belle and Golden Midget. In 2005, all the earliest maturing varieties were icebox types and included Imagination (primed), Freedom, Sunrise One, HSR 2920, Millenium, Summer Sweet #2532, Treasure Chest, and Triple Play. Of the 101 varieties included in this study in 2005, 80 matured within 100 days after transplanting, making them suitable for production in western Washington.

Percent Soluble Solids. Percent soluble solids in a fruit is an indicator of percent sugars and ripeness. The Brix meter is the standard tool for taking this measurement rapidly in the field. Brix readings differed significantly among varieties both years for most types of watermelons (Tables 1-4). In 2004, varieties ranged from 7–10% soluble solids at maturity. Varieties with the highest Brix readings were Fenway (10.0), Petite Perfection (9.9), Hime Kansen (9.7), and Mini Seedless (9.7). We had difficulty determining whether or not a variety was mature prior to harvest in 2004, and as a result we harvested many fruit prior to their optimum maturity. In 2005, we were able to distinguish a ripe fruit in the field prior to harvest (see Determining a Ripe Fruit below), and as a result Brix readings were generally higher than in 2004. In 2005, varieties ranged from 6–19% in soluble solids, and varieties with the highest readings were Boston (19.4), Treasure Chest (16.9), Summer Sweet (15.7), Super Crisp (14.2), and Sunrise (14.0). All varieties except 3 (Atranhanski, Jenny and Malali) had soluble solids above 8.0 and were considered sweet.

Flesh Color. The majority of the varieties included in this study, and the majority of icebox watermelon varieties that are commercially available, are red fleshed. There was much variation

among these varieties in shape, size, rind color, and seed content. There was also much variation in sweetness and flavor quality. Most of the varieties evaluated in this trial had excellent color, flavor, and appearance.

In 2004, 5 varieties were yellow flesh, and 2 of these were icebox types (Baby Doll and Orchid Sweet) while 3 were mini types (Gold Baby, New Queen, and Yellow Doll). In 2005, 25 varieties had yellow or orange flesh, and of these, 18 were icebox types: Butterball, Buttercup, Early Moonbeam, Golden Honey, New Orchid, New Queen, Orange Julius, Orange Sweet, Orangelo, Solid Gold, Sorbet Swirl, Summer Sweet #3521Y, Sun Ray, Sunshine, Treasure Chest, Yellow Bird, WT-04-65, and Yellow Petite. Six varieties were mini types: 41020016, Amarillo, Gold Flower, Golden Sunrise, Mini Yellow, and Yellow Doll; and 1 variety was a picnic type: Yellow Shipper (Daisy). Yellow and orange flesh watermelons tended to have average Brix readings (around 10%), and did well in our taste tests.

In 2004, 3 varieties had cream-colored flesh: Cream of Saskatchewan, Desert King and Japanese Cream-Fleshed Suika. In 2005, only 2 varieties had cream-colored flesh: Cream of Saskatchewan and White Wonder. All of these varieties had below average Brix readings, and tended to be mildly sweet and/or slightly tart. Japanese Cream Fleshed Suika was the best overall in terms of flavor, yield and days to maturity. These watermelons were preferred by some people in farmers market taste tests, and some suggested eating them with lime and salt.

Seedless Varieties. In 2004, this trial included 10 seedless varieties: Bobbie, Extazy, Gypsy, Lycosweet, Mini Seedless, Orchid Sweet, Solitaire, Ultra Cool, Valdoria and Vanessa. All were red-fleshed except for Orchid Sweet, which was yellow fleshed. In 2005, this trial included 43 seedless varieties: 7167, 7177 HQ, 7187 HQ, ACX 601T, ACX 651T, Afternoon Delight, Amarillo, Betsy 8103, Bobbie 8101, Boston, Butterball, Buttercup, Constitution, Demi-Sweet, Extazy, Freedom, Imagination, Independence, Liberty, Millenium, Millionaire, Mini Yellow, Orange Julius, Orange Sweet, Petite Treat, Promise, Solid Gold, Solitaire, Summer Sweet #2532, Summer Sweet #3521Y, Sun Ray, Super Crisp 85, Sweet Delight, Sweet Eat'n, SXW 0016, SWX 0017, Treasure Chest, Triple Play, Valdoria, Vanessa, Wonder, WT-04-65, and Yellow Bird. Of these varieties, 12 were yellow fleshed: Amarillo, Butterball, Buttercup, Mini Yellow, Orange Julius, Orange Sweet, Solid Gold, Summer Sweet #3521Y, Sun Ray, Treasure Chest, WT-04-65, and Yellow Bird.

Determining a Ripe Fruit. Perhaps one of the biggest challenges we faced in this study was determining a ripe fruit in the field. In 2004, we were not able to determine if a fruit was fully mature prior to harvest and this resulted in our harvesting many fruit that were not fully mature. As a result, fruit weight and Brix readings were not as great as they could have been. In 2005, we investigated the four common techniques used for determining fruit ripeness in the field: ground spot color, hollow sound of fruit, color/maturity of axial leaf, and color/maturity of axial tendril. We found that a brown axial leaf in combination with a brown axial tendril was the most consistent and reliable indicator of fruit ripeness. A few varieties, however, tended to ripen before their leaf and/or tendril had fully turned brown.

Conclusions

Preliminary results of this study indicate that over 80 varieties of icebox watermelon produce well when grown organically in our region. There is great diversity among these varieties in fruit yield, number, color, sugar content, flavor, size, and length of growing season. Preferences for fruit taste and appearance vary among different consumer groups, and growers who are considering production should test several varieties for productivity and taste preferences in their area.

Another major accomplishment of this study has been to determine how to identify a ripe fruit in the field prior to harvest. We found that a brown axial leaf in combination with a brown axial tendril was the most consistent and reliable indicator of fruit ripeness. However, a few varieties tended to ripen before their leaf and/or tendril had fully turned brown. We recommend that growers test this method in their own field with every variety they grow.

Watermelon weight has generally been used to distinguish between market groups of watermelon (mini, icebox, or picnic), and traditionally, icebox watermelons are considered to be between 8 and 12 lbs. However, in this study we found that a large number of varieties produced an average watermelon weight between 6 and 8 lbs, but showed average lengths and widths that correspond with the general size concept of an icebox type. Additionally, several varieties produced an average watermelon weight of between 12 and 15 lbs, but were small enough in terms of length and width to be considered an icebox type. Based on these results, we suggest that the categories for watermelon should be: mini (<6 lbs), icebox (6-15 lbs), and picnic (>15 lbs).

A major challenge faced by organic growers is obtaining organic or untreated seed. Although placing a seed order early may help to ensure that untreated seed will be available, it is no guarantee. It is only through increased demand for untreated and organic seed that seed companies will begin to fill this need. It is work such as this study that has the potential to help increase demand for seed which will then result in increased availability of untreated and organic seed.

References:

Maynard, Donald. 2004. Professor emeritus, University of Florida. Personal Communication.

Wehner, T.C. and Barrett, C. 1996. Watermelon Cultivars.
http://cuke.hort.ncsu.edu/cucurbit/wmelon/wmcults.html

Table 1. Marketable yield of icebox and mini watermelon varieties grown from untreated seeds at Washington State University Vancouver REU in 2004.

ICEBOX TYPE	Total Watermelon		Mean Watermelon				Days to
Variety	**Number[x]**	**Yield (lb)[x]**	**Weight (lb)**	**Length (in)**	**Width (in)**	**BRIX**	**Maturity[y]**
Blacktail Mountain	18.6	85.4	8	8.1	7.6	7.3	85.3
Cream of Saskatchewan	12.4	78	8.9	7.4	7.6	7.7	85.3
Early Crimson Treat	20.8	106.8	9.4	8.1	7.4	9	85.3
Genesis	14	84.7	8.9	8.1	7.5	9.3	83.5
Japanese Cream Fleshed Suika	15.1	89.5	10.1	8.3	7.9	8.5	81.7
Jubilee	19	67.9	9.1	7.5	7.2	8.6	84
Melitopolski	10.5	75.9	11.5	9	8.9	6.5	85.3
Navajo Sweet	23.8	102.4	10.6	8.2	8.2	8.6	81.7
Orchid Sweet	17.1	92.8	9.4	8.3	8.1	9.1	83
Small Shining Light	17.1	81	7.8	7.1	7.5	7.4	81.7
Southern Light	13.2	58.1	7	7.3	6.7	8.1	84
Sugar Baby[z]	10.5	36.2	8.7	7	7.4	7.7	83
Sweet Beauty	19	65.8	6.5	9.7	5.5	9.4	83
Tiger Baby	22.9	68.2	7.6	7.3	6.9	9.3	89
Ultra Cool	11.9	108.3	11	8.7	8.3	8.3	83
Winter King & Queen	24.8	120.4	9.3	7.6	7.2	7.9	93.3
Mean	**16.9**	**82.6**	**9.0**	**8.0**	**7.5**	**8.3**	**84.5**
P Value	**0.5151**	**0.0392**	**0.0482**	**0.0226**	**0.0055**	**0.000**	**0.7591**

MINI TYPE	Total Watermelon		Mean Watermelon				Days to
Variety	**Number[x]**	**Yield (lb)[x]**	**Weight (lb)**	**Length (in)**	**Width (in)**	**BRIX**	**Maturity[y]**
Belle 460	20.7	50.8	5.3	7.8	5.8	9.2	86.7
Cathay Belle	13.6	39.6	4.5	6.8	5.9	7.9	81.7
Gold Baby	15.2	41.7	5	6.8	6.4	9.1	91.3
Golden Midget[z]	24.9	32.7	3.8	6.4	5.4	7.4	81.8
Hime Kansen	18.6	32.6	3.6	6.2	5.1	9.7	90
Little Boy	17.6	57.1	5.7	7.6	6.2	9.6	83
New Queen	16.7	55	5.6	7.3	5.7	8.5	86.7
Petite Perfection	14.1	43.5	5.6	7	6.3	9.9	85.3
Red Doll	14.8	27.8	3.5	6.6	5.7	9.2	89.7
Thai Baby	27.1	36.2	4	5.9	4.4	6.3	86.7
Yellow Doll	25.7	54.9	5.6	7.6	6.7	9.3	85.3
Mean	**19.0**	**42.9**	**4.7**	**6.9**	**5.8**	**8.7**	**86.2**
P Value	**0.5418**	**0.3096**	**0.0272**	**0.0884**	**0.0121**	**0.000**	**0.2729**

x Number of watermelons and total yield of 10 plants

y Days to maturity from transplanting

z Values are the mean of two replications.

Comparison of types: P Value	**0.2749**	**0.000**		**0.000**	**0.0006**	**0.000**	**0.249**	**0.1744**

Table 2. Marketable yield of icebox, mini and picnic watermelon varieties grown from treated seeds at Washington State University Vancouver REU in 2004.

ICEBOX TYPE	Total Watermelon		Mean Watermelon				Days to
Variety	**Number[x]**	**Yield (lb)[x]**	**Weight (lb)**	**Length (in)**	**Width (in)**	**BRIX**	**Maturity[y]**
Baby Doll	15.3	222.6	14.6	9.8	8.8	8	87.7
Bobbie (8101)	15.7	100.8	6.2	6.8	6.6	8.4	97
Extazy (6008)	17.9	125.1	7	7.2	7.1	8.6	92.3
Fenway	13.3	114	8.5	7.6	7.5	10	87.7
Gypsy	9.5	116.2	12.2	9.1	8.8	9.5	91.3
Imagination	17.9	182.6	10.1	8.6	8.1	8.8	90.7
Jade Star	7.3	73.8	9.4	8.3	7.5	8	96
Lycosweet (5109)	7.7	72.1	7.9	7.4	7	9.3	100.3
Mini Seedless	18.4	117.8	6.4	6.9	6.1	9.7	91
Nova	10.5	110.4	10.4	8	7.8	9	90
Quetzali	11.9	124.1	9.3	7.6	6.8	8.7	97
Sugar Baby	14.4	120.4	8.3	7.6	7.3	7.6	94.7
Thai Black	9	89.6	8.2	7.2	6.8	7.2	96
Tiger Baby	16.2	139.2	7.8	7.9	7.3	9.1	92.3
Valdoria	17.5	161.6	8.6	7	7.1	8.3	91
Yellow Doll	17.4	131	7.7	7.9	7.3	8.7	85.3
Mean	**13.7**	**125.1**	**8.9**	**7.8**	**7.4**	**8.7**	**92.5**
P Value	**0.6721**	**0.7578**	**0.0043**	**0.0004**	**0.0022**	**0.0003**	**0.3466**

MINI TYPE	Total Watermelon		Mean Watermelon				Days to
Variety	**Number[x]**	**Yield (lb)[x]**	**Weight (lb)**	**Length (in)**	**Width (in)**	**BRIX**	**Maturity[y]**
Precious Petite	12.7	74.7	4.9	6.5	6	8.3	103
Vanessa	12.7	68.3	5.2	6.7	6.4	9.1	96.7
Solitaire	20	119.3	5.9	6.9	6.8	8.9	86.7
Mean	**15.1**	**87.4**	**5.4**	**6.7**	**6.4**	**8.8**	**95.4**
P Value	**0.5196**	**0.5252**	**0.7926**	**0.8973**	**0.5466**	**0.5982**	**0.3083**

PICNIC TYPE	Total Watermelon		Average Watermelon				Days to
Variety	**Number[x]**	**Yield (lb)[x]**	**Weight (lb)**	**Length (in)**	**Width (in)**	**BRIX**	**Maturity[y]**
Desert King	4	71.2	18.6	10.5	9.6	7.4	91

x Number of watermelons and total yield of 10 plants

y Days to maturity from transplanting

Comparison of types: P Value	**0.0675**	**0.1574**	**0.0001**	**0.0025**	**0.0032**	**0.246**	**0.5773**

Table 3. Marketable yield of icebox, mini and picnic watermelon varieties grown from untreated seeds at Washington State University Vancouver REU in 2005.

ICEBOX TYPE	Total Watermelon		Mean Watermelon				Days to
Variety	Number[x]	Yield (lb)[x]	Weight (lb)	Length (in)	Width (in)	BRIX	Maturity[y]
7167	6.4	91.6	9.2	8.9	7.6	9.6	105
7177 HQ	9.3	96	9.6	8.6	7.7	11.9	96
7187 HQ	15.5	102.3	10.2	8.7	8	10.2	95
ACX 601T	8.6	128.5	12.8	8.7	8.5	9.7	85
ACX 651T	10.1	110.3	11	8.5	8.2	10.4	93
Asian (HSR 2866)	8.6	97.1	9.7	9.5	8.8	9.3	95
Atranhanski	10.1	118.7	11.9	8.7	8.4	6.8	106
Blacktail Mountain	10	82.5	8.2	8	7.7	10.2	90
Butterball	11.3	85.4	8.5	7.6	7.9	9.3	94
Cream of Saskatchewan	11.9	89.3	8.9	7.9	7.9	9.7	88
Crimson Sweet	6.5	144.5	14.5	9.8	9.1	9.4	91
Demi-Sweet	11.4	98.5	9.8	8.3	8.4	10.7	92
Early Crimson Treat	11.1	80.8	8.1	7.8	7.3	10.4	90
Early Moonbeam	19	64.6	6.5	7.4	7	11	88
Early Moonbeam (black seed)	11.1	62.9	6.3	8.7	8.3	9.1	92
Early Moonbeam (brown seed)	9	144.7	14.5	8.6	8.8	10.4	99
Festival	6.4	101	10.1	8	7.9	10.8	94
Golden Honey	9	94.1	9.4	8.7	7.9	10.1	100
Imperial	9.2	144.8	14.5	10.7	8.3	9.4	96
Jubilee	9.5	102.7	10.3	8	7.8	11.9	102
Malali	14.2	66.6	6.7	7.1	7.3	6.3	106
Melitopolski	10.2	98.4	9.8	8.4	8	8.8	105
Millenium	8.6	79	7.9	8.1	7.7	11.1	83
Millionaire	9.5	80.8	8.1	7.9	7.5	11.2	103
Moon and Stars	9	134.7	13.5	9.7	8.8	10.2	95
Navajo Sweet	9.5	94.3	9.4	8	8	10.7	97
New Orchid	11	105.3	10.5	7.5	6.9	10.4	99
New Queen	19.2	61	6.1	7.7	6.4	11.3	87
Orange Sweet	9	111.4	11.1	8.7	8.9	8.4	101
Orangeglo	7.1	94.5	9.4	12.1	8.6		99
Osh Kirgizia	9	86	8.6	7.9	7.6	10.1	98
Quetzali	9.8	82.2	8.2	8.2	7.5	10.3	91
Sangria	8.1	118.8	11.9	12.7	6.9	9.8	102
Sorbet Swirl F1	19	82.9	8.3	7.9	7.3	13	88
Sugar Baby	6.7	144.6	14.5	10	9.1	10.3	97
Sugar Baby (HSR 2945)	7.1	79.8	8	8	7.7	8.9	102
Summer Sweet #2532	11.7	129.1	12.9	16.2	15.5	15.7	83
Summer Sweet #3521Y	16.7	75.1	7.5	7.5	7.4	10.4	99
Sunrise One	11.4	76.6	7.7	7.8	7.3	14	82
Sunshine	9.8	85	8.5	8.5	7.3	9.9	103
Sweet Diane	10.9	90.5	9	8.7	7.4	9.5	97
Sweet Favorite	7.1	124	12.4	11.6	7.8	10.6	110

ICEBOX TYPE (cont'd)	Total Watermelon		Mean Watermelon				Days to
Variety	**Number[x]**	**Yield (lb)[x]**	**Weight (lb)**	**Length (in)**	**Width (in)**	**BRIX**	**Maturity[y]**
Tiger Baby	12.4	74.9	7.5	7.6	6.9	10.1	96
Treasure Chest	12.5	114.2	11.4	8.7	8.4	16.9	83
Triple Play	22	106.5	10.7	8.3	8.1	13.3	83
Verona	9.5	142.6	14.3	10	8.2	8.6	97
White Wonder	11.2	83.2	8.3	7.8	7.6	10.3	100
Winter King & Queen	11	78	7.8	7.1	7.1	8.3	107
WT-04-68	6.7	90.9	9.1	9.1	7	10.1	96
Yellow Bird	12.9	114.8	11.5	7.8	7.9	10.6	90
Yellow Petite	9.3	106.9	10.7	8.8	8.1	9.6	100
Mean	**10.4**	**99.8**	**10.0**	**8.8**	**8.04**	**10.3**	**95.7**
P Value	**0.1761**	**0.0015**	**0.0044**	**0.000**	**0.000**	**0.033**	**0.4049**

MINI TYPE	Total Watermelon		Mean Watermelon				Days to
Variety	**Number[x]**	**Yield (lb)[x]**	**Weight (lb)**	**Length (in)**	**Width (in)**	**BRIX**	**Maturity[y]**
Diana	16.2	49.1	4.9	8.6	5.7	10.6	86
Gold Flower	14.8	53.3	5.3	9.6	4.3	10	92
Golden Sunrise	8.6	45.8	4.6	6.7	6	9.6	96
Hime Kansen	6.9	29.6	3	6	5.3	9.8	105
Jade Star	13.8	59.9	6	7.1	7.1	8	105
New Hampshire Golden Midget	23.9	39.8	4	6.2	6.1	8.8	88
Red Doll	12.9	37	3.7	6.3	5.4	10	93
Solitaire (GV)	11	44.2	4.4	6.3	6.1	9.3	96
Sugar Baby	7.9	54	5.4	6.9	6.8	8	95
Sweet Beauty	5.3	53.5	5.4	9.6	5.4	10.5	107
Yellow Doll	24.3	55.4	5.5	7.3	6.6	10.4	92
Yellow Jubilee	15.1	50.1	5	6.8	6.6	10.6	91
Mean	**13.8**	**48.7**	**4.9**	**7.3**	**6.0**	**9.7**	**94.9**
P Value	**0.0003**	**0.0021**	**0.291**	**0.000**	**0.000**	**0.4474**	**0.2044**

PICNIC TYPE	Total Watermelon		Mean Watermelon				Days to
Variety	**Number[x]**	**Yield (lb)[x]**	**Weight (lb)**	**Length (in)**	**Width (in)**	**BRIX**	**Maturity[y]**
Crimson Sweet	6.5	159.9	16	9.7	9.6	9.2	95
HSR 2920	10	200.1	20	7.1	7.2	12.1	83
Moon and Stars	6.6	174.3	17.4	10.4	9.7	9.1	88
Sultan	7.5	154	15.4	10.2	7.1	13.5	99
Yellow Shipper (Daisy)	10	162.3	16.2	12	9.1	8.6	90
Mean	**8.1**	**170.1**	**17.0**	**9.9**	**8.5**	**10.5**	**91**
P Value	**0.129**	**0.7377**	**0.8012**	**0.5164**	**0.0822**	**0.1894**	**0.5073**

x Number of watermelons and total yield of 10 plants

y Days to maturity from transplanting

Comparison of Types: P Value	**0.0066**	**0.000**	**0.000**	**0.000**	**0.0022**	**0.000**	**0.7587**

Table 4. Marketable yield of icebox, mini and picnic watermelon varieties grown from treated seeds at Washington State University Vancouver REU in 2005.

ICEBOX TYPE	Total Watermelon		Mean Watermelon				Days to
Variety	**Number[x]**	**Yield (lb)[x]**	**Weight (lb)**	**Length (in)**	**Width (in)**	**BRIX**	**Maturity[y]**
Boston	8.1	71.1	8.5	7.9	7.7	19.4	87
Buttercup	9.2	82	9.1	7.8	8.2	9.5	94
Constitution	6.7	51.4	7.7	8.1	7.6	9.7	92
Crimson Tide	5.7	49.1	8.8	6.4	7.4	8.8	91
Freedom	9.3	83.1	8.9	9.3	6.9	9.9	82
HSR 2695	3.3	30.4	9.2	9.7	9.4	8.5	99
HSR 2698	10	63.2	6.3	7.5	7	9.2	84
Imagination (primed)	10	73.6	7.4	7.4	7.2	9.4	77
Independence	7.1	58.1	8.1	8.4	7.6	10.5	92
Jade Star	7.6	62.4	8	8.7	8.4	9.1	89
Liberty	9.3	83.8	8.3	8.1	7.3	10.1	89
Madrid	7.9	90.8	11.8	12.1	7.2	9.4	102
Montreal	5.7	55.3	9.6	10.2	7.2	8	105
Orange Julius	9.3	79.9	8.7	7.5	8	9.9	91
Petite Treat	7.1	43.7	6.1	7.3	6.9	8.7	87
Promise	10	74.4	7.7	8.5	7.3	9.2	88
Quetzali	10	86.2	8.6	7.7	7.8	10	94
Revolution	5.7	54.5	9.5	9.4	7.1	10.2	87
Ruby	2.9	21.2	7.3	7.5	7.3	10	95
Solid Gold	7.1	62.8	8.8	8.8	8.4	9.3	91
Sugar baby	9	56.1	6.6	4.7	4.6	8.4	89
Sun Ray	10.5	66.6	6.6	7.1	7.3	10	91
Super Crisp 85	10.7	95	8.8	8.3	7.7	14.2	84
Sweet Delight (primed)	10	81.7	8.2	8.1	7.5	9.8	87
Sweet Eat'n	6	64.1	10.6	8.9	7.9	10.2	92
SXW 0016	7.6	62	8	8	7.5	10.2	89
SXW 0017	11.7	83.4	7.2	7	7.3	10.3	89
Vista	5.2	65.8	12.8	10.5	8.3	9.9	97
WT-04-65	10	71.4	8	7.4	7.8	10.5	88
Mean	**8.0**	**65.6**	**8.4**	**8.2**	**7.5**	**10.1**	**90.0**
P Value	**0.1259**	**0.207**	**0.006**	**0.0000**	**0.0000**	**0.894**	**0.1165**

MINI TYPE	Total Watermelon		Mean Watermelon				Days to
Variety	**Number[x]**	**Yield (lb)[x]**	**Weight (lb)**	**Length (in)**	**Width (in)**	**BRIX**	**Maturity[y]**
41020016	5.7	28.3	4.9	8.4	5.6	9.5	100
Afternoon Delight	5.7	23.6	4.1	6.2	5.9	8.9	87
Amarillo	10.7	62.2	5.6	7.9	8.1	10	88
Betsy (8103)	15	49.4	3.3	4.9	4.7	9.3	98
Bobbie (8101)	10	52.4	5.2	6.7	6.5	10.6	86
Extazy	12.4	65.9	5.3	6.6	6.4	9.8	89
Jenny	6.9	36.7	5.4	7.1	6.4	7.8	87
Mickylee	9.5	50.1	5.3	6.7	6.3	8.3	94
Mini Yellow	12.1	63.4	5.2	8.3	8.2	9.7	84
Solitaire	9.3	47.6	5.2	7	6.9	9.6	88
Sweet Beauty	10	41.2	4.2	7.8	5.8	9.5	87
Valdoria	10.5	53.4	5.1	6.6	6.6	9.9	99
Vanessa	13.8	69.2	5	6.3	6.5	9.5	92
Wonder	14.3	57.7	4.1	5.5	5.7	9.7	87
Yellow Doll	8.7	36.9	5	6.9	6.2	10.4	102
Mean	**10.3**	**49.2**	**4.9**	**6.9**	**6.4**	**9.5**	**91**
P Value	**0.1003**	**0.2248**	**0.001**	**0.019**	**0.021**	**0.029**	**0.1431**

PICNIC TYPE	Total Watermelon		Mean Watermelon				Days to
Variety	**Number[x]**	**Yield (lb)[x]**	**Weight (lb)**	**Length (in)**	**Width (in)**	**BRIX**	**Maturity[y]**
Sangria	5.2	75.8	24.2	11.4	6.7	9.2	99

x Number of watermelons and total yield of 10 plants

y Days to maturity from transplanting

Comparison of Types:							
P Value	**0.007**	**0.008**	**0**	**0**	**0**	**0.542**	**0.293**

Icebox Watermelon Variety Trial

Carol Miles, Kathryn Kolker, Gail Becker, Lydia Garth, Jenn Reed, Tracy Smith, Liz Nelson, and Jeannie Garth
Washington State University, Vancouver Research & Extension Unit, 1919 NE 78th Street, Vancouver, WA 98665
Phone: 360-576-6030 x 20 Email: milesc@wsu.edu

Introduction

The first icebox watermelon variety was introduced in the U.S. almost 50 years ago (Maynard, 2004), but it was only in 2005 that icebox watermelons became commonly available in grocery stores throughout the U.S. Icebox watermelon weigh between 6 and 12 pounds, they come in a variety of shapes and colors, and there are more than 100 varieties to choose from. Icebox watermelons are rapidly increasing in popularity due to their small size, which is ideal for small families and for storage in home refrigerators. With a rising interest in local food, direct marketing and organic production, farmers in Washington are looking to diversify crop types to meet these demands. Icebox watermelons offer farmers throughout Washington a means of producing high quality watermelons locally. The purpose of this study was to determine which varieties of icebox watermelon are most suitable for organic production in our region.

Methods

This study was conducted at Washington State University Vancouver Research and Extension Unit. We evaluated 44 watermelon varieties in 2004, 101 varieties in 2005, and 117 varieties in 2006. Our seed choice was first organic, then untreated and then treated seed for each variety (many varieties were not available as organic or untreated seed). All years, the greenhouse for transplant production was managed organically, and varieties were evaluated in a certified organic field or an organically managed field. In 2004 and 2005, untreated and organic seed varieties were evaluated separately but adjacent to treated seed varieties. In 2006, all varieties were evaluated in our certified organic field.

In addition to our large variety trial in Vancouver, we evaluated 4 watermelon varieties in Pullman in 2005 and 7 varieties in 2006. In addition in 2006, we evaluated 12 varieties in Mount Vernon, 8 in Olympia and 20 in Montessano. These were observation plots only and no results will be presented in this report.

All three years at WSU VREU the study design was a randomized complete block with three replications. Plots were single rows, 21 feet long, with 7 plants per plot. Spacing was three feet between plants in the rows, and 10 feet between rows. Varieties were seeded in the greenhouse on April 12, 2004, April 21 2005, and April 12, 2006. Watermelons were then transplanted into the field on May 26, 2004, June 6, 2005, and June 1, 2006.

Plants were drip-irrigated twice weekly for 4 hour intervals for a total of 1-inch of water per week each year. Rows were mulched with black plastic (1.0 mil polyethylene) with drip tape beneath. Fertilization took place immediately after transplanting and four times throughout the growing season. All three years, the fertilizer was soluble BioLink (5-5-5) and soluble seaweed extract powder (Acadian 1-0-4 w/ trace minerals), applied through the irrigation system at a rate of 5 lb/A and 3 lb/A, respectively. In 2006, the first 2 field applications were with Biogan (12-2-1) instead of BioLink.

Ripe fruit were harvested twice weekly all three years from August 12 to October 4, 2004, August 22 to September 28, 2005, and August 8 to October 13, 2006. Due to difficulties in determining ripeness in the field in 2004, in 2005 we investigated techniques for determining ripeness in the field.

Techniques included evaluating optimum ground spot color, hollow sound of fruit, color/maturity of axial leaf at harvest, and color/maturity of axial tendril at harvest. We measured harvested melons for weight, length and width, and number of fruit per plot. After each harvest, one watermelon per plot was measured for percentage of soluble solids using a Brix meter. The percent of soluble solids is an estimate of sugars, and is used to evaluate sweetness and ripeness.

Results & Discussion

Although this study was designed to investigate productivity of icebox watermelons (6-12 lbs), we received, planted and evaluated several personal-size or mini watermelon varieties (<6 lbs) and picnic varieties (> 12 lbs). Results are presented for varieties in each market group, personal/mini, icebox and picnic. All years, varieties differed significantly in yield, average watermelon weight, and number of marketable watermelons (Tables 1-5). It is interesting to note that some varieties were variable in their classification from year to year. For example, Sugar Baby produced an average fruit weight greater than 6 lbs in 2004 (thus it was classified as an icebox type), but in 2005, average fruit weight was less than 6 lbs (thus it was classified as a personal/mini type). In this report, varieties are classified according to their mean fruit weight calculated each year, and in the overall results are classified according to their mean fruit weight calculated over all years.

Personal/Mini Varieties. In 2004, Solitaire produced the highest total marketable yield followed by Precious Petite, Vanessa, and Little Boy. Yellow Doll, Golden Midget, Belle 460 and Solitaire produced the greatest number of fruit. Thai Baby also produced a large number of fruit, but we later learned that this watermelon is not eaten as a mature fruit, but rather is harvested at an immature stage and cooked as a vegetable. In 2005, Vanessa, Extazy, Mini Yellow and Jade Star were the highest yielding varieties, while varieties that produced the most fruit were Yellow Doll, New Hampshire Golden Midget and Diana. In 2006, Solitaire, Gold Flower, Vanessa, and Wonder were the highest yielding; and Solitaire, Gold Flower, Wonder, Precious Petite, and Gold Midget produced the most fruit.

Icebox Varieties. In 2004, Baby Doll, Imagination, Valdoria and Tiger Baby were the highest yielding varieties while Winter King and Queen, Navajo Sweet, Tiger Baby and Early Crimson Treat produced the greatest number of fruit. In 2005, Imperial, Early Moonbeam, Sugar Baby, Crimson Sweet and Verona were the highest yielding varieties while New Queen, Summer Sweet #3521Y, 7187 HQ and Malali produced the greatest number of fruit. In 2006, Treasure Chest, Sweet Delight, Sorbet Swirl, Petite Yellow, and Amarillo produced the highest yield; and Amarillo, Cream of Saskatchewan, Mickylee, Petite Perfection, Sorbet Swirl, and Treasure Chest produced the greatest number of fruit.

Picnic Varieties. In 2004, the single picnic variety included was Desert King, and it produced a low yield and number of fruit. In 2005, Lamar (HSR 2920) and Moon and Stars were highest yielding while Lamar (HSR 2920) and Yellow Shipper (Daisy) produced the greatest number of fruit. In 2006, Imperial, Moon and Stars, Crimson Sweet, Vista, and Orangeglo produced the highest yield; and Imperial and Moon and Stars produced the greatest number of fruit.

Overall Yield Results. In summarizing the yield data from 2004, 2005 and 2006, the varieties showing the highest mean yield in the personal/mini category were Solitaire, Gold Flower, Vanessa, and Wonder; while Solitaire, Golden Midget, New Hampshire Golden Midget, and Red Doll produced the greatest number of fruit. In the Icebox category, Treasure Chest, Petite Yellow, 9651 HQ(ACX651T), and Imagination produced the greatest overall mean yield; while Sorbet Swirl, Yellow Doll, Sweet Beauty and Petite Perfection produced the greatest number of fruit. In the Picnic category, the varieties with the highest overall mean yield were Moon and Stars, Baby Doll, Imperial,

and Yellow Shipper (Daisy); while 7187 HQ, Imperial, and Baby Doll produced the greatest number of fruit. In ranking these overall results, data were considered only for those varieties that had been tested for 2 or 3 years.

Length and Width. Varieties differed significantly in fruit length and width each year. For all three market classes, shape varied from round, to oval, to elongated. We collaborated with farmers at farmer's markets all three years and found that consumers generally appeared to perceive smaller round watermelons to be cantaloupe or other melon types. In addition, most consumers do not associate dark green, light green or yellow rind colors with watermelons. Including a display of cut watermelons and providing taste samples greatly enhanced consumer's willingness to purchase novel types of watermelon.

Days to Maturity. There were no significant differences in days to maturity among the three market classes of watermelon. That is, in this study personal/mini varieties did not mature earlier than either icebox or picnic varieties. This is because all varieties that were included in this study were selected based on their early days to maturity. Within each watermelon class, varieties did not differ significantly in days after transplanting to maturity, and in 2004 days to maturity ranged from 82 to 103 days, in 2005 the range was from 82 to 110 days, and in 2006 the range was 68 to 134 days.

In 2004, 42 varieties, all except Lycosweet (5109) and Precious Petite, were ready for first harvest within 100 days after transplanting. The earliest varieties produced mature fruit by 82 days after transplanting and were Japanese Cream Fleshed Suika, Navajo Sweet, Small Shining Light, Cathay Belle and Golden Midget. Of the 101 varieties included in this study in 2005, 80 matured within 100 days after transplanting, making them suitable for production in western Washington. The earliest varieties produced mature fruit by 82 days after transplanting and were Imagination (primed), Freedom, and Sunrise One. In 2006, of the 117 varieties tested, 89 were ready to harvest within 100 days after transplanting. The earliest varieties were harvested by 75 days after transplanting and were Butterball, Jade Star, Petite Perfection, WT-04-65, and SXW 0017.

The demand for watermelon is highest in the summer, and our informal market surveys indicate that demand tapers off dramatically after Labor Day (first weekend in September). Decreasing market demand in September combined with decreasing temperatures make early maturity a highly desirable trait for growers in Washington. In general, we recommend varieties that are ready for harvest 92 days after transplanting.

Brix. The Brix meter is the standard tool for rapidly measuring percent soluble solids in a fruit, which is an indicator of percent sugars and ripeness. Brix readings differed significantly among varieties in some market classes all three years (Tables 1-5). In 2004, Brix ranged from 7–10% at maturity and varieties with the highest Brix were Fenway (10.0), Petite Perfection (9.9), Hime Kansen (9.7), and 5130 (HA5130) (9.7). We had difficulty determining whether or not a variety was mature prior to harvest in 2004, and as a result we harvested many fruit prior to their optimum maturity. In 2005, we were able to distinguish a ripe fruit in the field prior to harvest (see "Determining a Ripe Fruit," below), and as a result Brix readings were generally higher than in 2004. In 2005, Brix ranged from 6–19%, and varieties with the highest Brix were Boston (19.4), Treasure Chest (16.9), Summer Sweet (15.7), Super Crisp (14.2), and Sunrise (14.0). All varieties except 3 (Atranhanski, Jenny and Malali) had Brix above 8.0% and were considered sweet. In 2006, Brix ranged from 7-12% at harvest. The varieties with the highest Brix were Sweet Beauty (11.7), Little Boy (11.6), Rugby (41020016) (11.), Yellow Doll **(**11.4), and Summer Sweet #3521Y (11.3).

Yellow Flesh Color. The majority of the varieties included in this study, and the majority of icebox watermelon varieties that are commercially available, are red fleshed. However, there are varieties of watermelon with white, cream, yellow, orange, and pink flesh. Yellow and orange fleshed watermelons tended to have average Brix readings (around 10), and did well in our taste tests. Watermelon with yellow and orange flesh color are not yet commonly available at grocery stores and so local farmers may be able to capture this niche market. In 2004, 5 varieties were yellow flesh, and 2 of these were icebox types (Baby Doll and Orchid Sweet) while 3 were personal/mini types (Gold Baby, New Queen, and Yellow Doll). In 2005, 25 varieties had yellow or orange flesh, and of these, 18 were icebox types: Butterball, Buttercup, Early Moonbeam, Golden Honey, New Orchid, New Queen, Orange Julius, Orange Sweet, Orangelo, Solid Gold, Sorbet Swirl, Summer Sweet #3521Y, Sun Ray, Sunshine, Treasure Chest, Yellow Bird, WT-04-65, and Yellow Petite. Six varieties were personal/mini types: Amarillo, Gold Flower, Golden Sunrise, Mini Yellow, Rugby (41020016), and Yellow Doll; and 1 variety was a picnic type: Yellow Shipper (Daisy). In 2006, 26 varieties were yellow or orange flesh and of these 16 were icebox types: Amarillo, Butterball, Buttercup, Early Moonbeam, Gold Flower, Golden Honey, Mini Yellow, New Orchid, Sorbet Swirl F1, Summer Sweet #3521Y, Sun Ray, Sunshine, Treasure Chest, WT-04-65, Yellow Bird, and Yellow Doll. Three varieties were personal/mini types: Golden Sunrise, New Queen, and Rugby (41020016); and 7 varieties were picnic type: Baby Doll, Orange Julius, Orange Sweet, Orangeglo, Petite Yellow, Solid Gold, and Yellow Shipper (Daisy).

In 2004, three varieties had cream-colored flesh: Cream of Saskatchewan, Desert King and Japanese Cream-Fleshed Suika. In 2005, only 2 varieties had cream-colored flesh: Cream of Saskatchewan and White Wonder. In 2006, three varieties were cream-colored: Cream of Saskatchewan, Desert King, and White Wonder. All of these varieties had below average Brix readings, and tended to be mildly sweet and/or slightly tart. Japanese Cream Fleshed Suika was the best overall in terms of flavor, yield and days to maturity. These watermelons were preferred by some people in farmers market taste tests, and some suggested eating them with lime and salt.

Seedless Varieties. In 2004, this trial included 10 seedless varieties: Bobbie, Extazy, Gypsy, Lycosweet, 5130, Orchid Sweet, Solitaire, Ultra Cool, Valdoria and Vanessa. All were red-fleshed except for Orchid Sweet, which was yellow fleshed. In 2005, this trial included 48 seedless varieties, and of these 35 were red fleshed and 13 were yellow fleshed. Red fleshed varieties were: 7167, 7177 HQ, 7187 HQ, 9601 HQ (ACX 601T), 9651 HQ (ACX 651T), Afternoon Delight, Betsy 8103, Bobbie 8101, Boston, Constitution, Demi-Sweet, Extazy, Freedom, Imagination, Independence, Lamar (HSR2920), Liberty, Millenium, Millionaire, Petite Treat, Promise, Revolution, Ruby, Solitaire, Summer Sweet #2532, Super Crisp 85, Sweet Delight, Sweet Eat'n, SXW 0016, SXW 0017, Triple Play, Valdoria, Vanessa, Wonder and WT-04-68. Yellow fleshed varieties were: Amarillo, Butterball, Buttercup, Mini Yellow, Orange Julius, Orange Sweet, Rugby (41020016), Solid Gold, Summer Sweet #3521Y, Sun Ray, Treasure Chest, WT-04-65, and Yellow Bird. In 2006, 54 seedless varieties were tested and in addition to those grown in 2005, 8 red-fleshed varieties were included: Fenway, Gypsy, Lycosweet 5109, 5130, Nova, Petite Perfection, Precious Petite, Tri X Palomar. Triple Play and SXW 0016 were the only seedless varieties not grown again in 2006.

Determining a Ripe Fruit. Perhaps one of the greatest challenges we faced in this study was determining a ripe fruit in the field. In 2004, we were not able to determine if a fruit was fully mature prior to harvest and this resulted in our harvesting many fruit that were not fully mature. As a result, fruit weight and Brix readings were not as great as they could have been. In 2005, we investigated the four common techniques used for determining fruit ripeness in the field: ground spot color, hollow sound of fruit, color/maturity of axial leaf, and color/maturity of axial tendril. We found that a

brown axial leaf in combination with a brown axial tendril was the most consistent and reliable indicator of fruit ripeness. Although a few varieties tended to ripen before their leaf and/or tendril had fully turned brown, determining fruit ripeness based on the color/ maturity of the axial leaf and axial tendril proved to be a very reliable method.

Organic Seed. When we initiated this study in 2004, many watermelon varieties were not available as organic or untreated seed. By 2006, 8 varieties that had previously been available as untreated or treated seed became available as organic seed, and 15 varieties that had previously only been available as treated seed became available as untreated seed.

Conclusions

Results of this study indicate that many varieties of icebox watermelon produce well when grown organically in our region. Of the 125 varieties that we tested, 71 matured in 92 days or less. There is great diversity among varieties in fruit yield, number, color, Brix (sugar content), flavor, size, shape and length of growing season. Most of the varieties evaluated in this trial had excellent color, flavor, and appearance. Preferences for fruit taste and appearance appear to vary among different consumer groups, and growers should test several varieties for productivity and taste preferences in their area.

Another major accomplishment of this study has been to determine how to identify a ripe fruit in the field prior to harvest. We found that a brown axial leaf in combination with a brown axial tendril was the most consistent and reliable indicator of fruit ripeness. However, a few varieties tended to ripen before their leaf and/or tendril had fully turned brown. We recommend that growers test this method in their own field with every variety they grow.

Watermelon weight has been used to distinguish between market groups of watermelon (personal/mini, icebox, or picnic), and traditionally, icebox watermelons are considered to be between 8 and 12 lbs. However, in this study we found that a large number of varieties produced an average watermelon weight between 6 and 8 lbs, but showed average lengths and widths that correspond with the general size concept of an icebox type. Based on these results, we suggest that the categories for watermelon should be: personal/mini (<6 lbs), icebox (6-12 lbs), and picnic (>12 lbs).

A major challenge faced by organic growers is obtaining organic or untreated seed. Although placing a seed order early may help to ensure that untreated seed will be available, it is no guarantee. It is only through increased general demand for untreated and organic seed that seed companies will begin to fill this need. It is work such as this study that has the potential to help increase demand for seed which will then result in increased availability of untreated and organic seed.

References:

Maynard, Donald. 2004. Professor emeritus, University of Florida. Personal Communication.

Wehner, T.C. and Barrett, C. 1996. Watermelon Cultivars.
http://cuke.hort.ncsu.edu/cucurbit/wmelon/wmcults.html

Table 1. Marketable yield of icebox and personal/mini watermelon varieties grown from untreated seeds at Washington State University Vancouver REU in 2004.

ICEBOX TYPE	Total Watermelon		Mean Watermelon				Days to Maturity[y]
Variety	Number[x]	Yield (lb)[x]	Weight (lb)	Length (in)	Width (in)	BRIX	
Blacktail Mountain	18.6	85.4	8	8.1	7.6	7.3	85.3
Cream of Saskatchewan	12.4	78	8.9	7.4	7.6	7.7	85.3
Early Crimson Treat	20.8	106.8	9.4	8.1	7.4	9	85.3
Genesis	14	84.7	8.9	8.1	7.5	9.3	83.5
Japanese Cream Fleshed Suika	15.1	89.5	10.1	8.3	7.9	8.5	81.7
Jubilee	19	67.9	9.1	7.5	7.2	8.6	84
Melitopolski	10.5	75.9	11.5	9	8.9	6.5	85.3
Navajo Sweet	23.8	102.4	10.6	8.2	8.2	8.6	81.7
Orchid Sweet	17.1	92.8	9.4	8.3	8.1	9.1	83
Small Shining Light	17.1	81	7.8	7.1	7.5	7.4	81.7
Southern Light	13.2	58.1	7	7.3	6.7	8.1	84
Sugar Baby[z]	10.5	36.2	8.7	7	7.4	7.7	83
Sweet Beauty	19	65.8	6.5	9.7	5.5	9.4	83
Tiger Baby	22.9	68.2	7.6	7.3	6.9	9.3	89
Ultra Cool	11.9	108.3	11	8.7	8.3	8.3	83
Winter King & Queen	24.8	120.4	9.3	7.6	7.2	7.9	93.3
Mean	**16.9**	**82.6**	**9**	**8**	**7.5**	**8.3**	**84.5**
P Value	**0.5151**	**0.0392**	**0.0482**	**0.0226**	**0.0055**	**0**	**0.7591**

PERSONAL/MINI TYPE	Total Watermelon		Mean Watermelon				Days to Maturity[y]
Variety	Number[x]	Yield (lb)[x]	Weight (lb)	Length (in)	Width (in)	BRIX	
Belle 460	20.7	50.8	5.3	7.8	5.8	9.2	86.7
Cathay Belle	13.6	39.6	4.5	6.8	5.9	7.9	81.7
Gold Baby	15.2	41.7	5	6.8	6.4	9.1	91.3
Golden Midget[z]	24.9	32.7	3.8	6.4	5.4	7.4	81.8
Hime Kansen	18.6	32.6	3.6	6.2	5.1	9.7	90
Little Boy	17.6	57.1	5.7	7.6	6.2	9.6	83
New Queen	16.7	55	5.6	7.3	5.7	8.5	86.7
Petite Perfection	14.1	43.5	5.6	7	6.3	9.9	85.3
Red Doll	14.8	27.8	3.5	6.6	5.7	9.2	89.7
Thai Baby	27.1	36.2	4	5.9	4.4	6.3	86.7
Yellow Doll	25.7	54.9	5.6	7.6	6.7	9.3	85.3
Mean	**19**	**42.9**	**4.7**	**6.9**	**5.8**	**8.7**	**86.2**
P Value	**0.5418**	**0.3096**	**0.0272**	**0.0884**	**0.0121**	**0**	**0.2729**

x Number of watermelons and total yield of 10 plants

y Days to maturity from transplanting

z Values are the mean of two replications.

Comparison of types: P Value	**0.2749**	**0**	**0**	**0.0006**	**0**	**0.249**	**0.1744**

Table 2. Marketable yield of icebox, personal/mini and picnic watermelon varieties grown from treated seeds at Washington State University Vancouver REU in 2004.

ICEBOX TYPE	Total Watermelon		Mean Watermelon				Days to Maturity[y]
Variety	**Number[x]**	**Yield (lb)[x]**	**Weight (lb)**	**Length (in)**	**Width (in)**	**BRIX**	
5130	18.4	117.8	6.4	6.9	6.1	9.7	91
Baby Doll	15.3	222.6	14.6	9.8	8.8	8	87.7
Bobbie (8101)	15.7	100.8	6.2	6.8	6.6	8.4	97
Extazy (6008)	17.9	125.1	7	7.2	7.1	8.6	92.3
Fenway	13.3	114	8.5	7.6	7.5	10	87.7
Gypsy	9.5	116.2	12.2	9.1	8.8	9.5	91.3
Imagination	17.9	182.6	10.1	8.6	8.1	8.8	90.7
Jade Star	7.3	73.8	9.4	8.3	7.5	8	96
Lycosweet (5109)	7.7	72.1	7.9	7.4	7	9.3	100.3
Nova	10.5	110.4	10.4	8	7.8	9	90
Quetzali	11.9	124.1	9.3	7.6	6.8	8.7	97
Sugar Baby	14.4	120.4	8.3	7.6	7.3	7.6	94.7
Thai Black	9	89.6	8.2	7.2	6.8	7.2	96
Tiger Baby	16.2	139.2	7.8	7.9	7.3	9.1	92.3
Valdoria	17.5	161.6	8.6	7	7.1	8.3	91
Yellow Doll	17.4	131	7.7	7.9	7.3	8.7	85.3
Mean	**13.7**	**125.1**	**8.9**	**7.8**	**7.4**	**8.7**	**92.5**
P Value	**0.6721**	**0.7578**	**0.0043**	**0.0004**	**0.0022**	**0.0003**	**0.3466**

PERSONAL/MINI TYPE	Total Watermelon		Mean Watermelon				Days to Maturity[y]
Variety	**Number[x]**	**Yield (lb)[x]**	**Weight (lb)**	**Length (in)**	**Width (in)**	**BRIX**	
Precious Petite	12.7	74.7	4.9	6.5	6	8.3	103
Vanessa	12.7	68.3	5.2	6.7	6.4	9.1	96.7
Solitaire	20	119.3	5.9	6.9	6.8	8.9	86.7
Mean	**15.1**	**87.4**	**5.4**	**6.7**	**6.4**	**8.8**	**95.4**
P Value	**0.5196**	**0.5252**	**0.7926**	**0.8973**	**0.5466**	**0.5982**	**0.3083**

PICNIC TYPE	Total Watermelon		Average Watermelon				Days to Maturity[y]
Variety	**Number[x]**	**Yield (lb)[x]**	**Weight (lb)**	**Length (in)**	**Width (in)**	**BRIX**	
Desert King	4	71.2	18.6	10.5	9.6	7.4	91

x Number of watermelons and total yield of 10 plants

y Days to maturity from transplanting

Comparison of types: P Value	**0.0675**	**0.1574**	**0.0001**	**0.0025**	**0.0032**	**0.246**	**0.5773**

Table 3. Marketable yield of icebox, personal/mini and picnic watermelon varieties grown from untreated seeds at Washington State University Vancouver REU in 2005.

ICEBOX TYPE	Total Watermelon		Mean Watermelon				Days to
Variety	Number[x]	Yield (lb)[x]	Weight (lb)	Length (in)	Width (in)	BRIX	Maturity[y]
7167	6.4	91.6	9.2	8.9	7.6	9.6	105
7177 HQ	9.3	96	9.6	8.6	7.7	11.9	96
7187 HQ	15.5	102.3	10.2	8.7	8	10.2	95
9601 HQ (ACX 601T)	8.6	128.5	12.8	8.7	8.5	9.7	85
9651 HQ (ACX 651T)	10.1	110.3	11	8.5	8.2	10.4	93
Atranhanski	10.1	118.7	11.9	8.7	8.4	6.8	106
Blacktail Mountain	10	82.5	8.2	8	7.7	10.2	90
Butterball	11.3	85.4	8.5	7.6	7.9	9.3	94
Cream of Saskatchewan	11.9	89.3	8.9	7.9	7.9	9.7	88
Crimson Sweet	6.5	144.5	14.5	9.8	9.1	9.4	91
Demi-Sweet	11.4	98.5	9.8	8.3	8.4	10.7	92
Early Crimson Treat	11.1	80.8	8.1	7.8	7.3	10.4	90
Early Moonbeam	19	64.6	6.5	7.4	7	11	88
Early Moonbeam (black seed)	11.1	62.9	6.3	8.7	8.3	9.1	92
Early Moonbeam (brown seed)	9	144.7	14.5	8.6	8.8	10.4	99
Festival	6.4	101	10.1	8	7.9	10.8	94
Golden Honey	9	94.1	9.4	8.7	7.9	10.1	100
HSR 2945	7.1	79.8	8	8	7.7	8.9	102
Imperial	9.2	144.8	14.5	10.7	8.3	9.4	96
Jubilee	9.5	102.7	10.3	8	7.8	11.9	102
Malali	14.2	66.6	6.7	7.1	7.3	6.3	106
Melitopolski	10.2	98.4	9.8	8.4	8	8.8	105
Millenium	8.6	79	7.9	8.1	7.7	11.1	83
Millionaire	9.5	80.8	8.1	7.9	7.5	11.2	103
Moon and Stars	9	134.7	13.5	9.7	8.8	10.2	95
Navajo Sweet	9.5	94.3	9.4	8	8	10.7	97
New Orchid	11	105.3	10.5	7.5	6.9	10.4	99
New Queen	19.2	61	6.1	7.7	6.4	11.3	87
Orange Sweet	9	111.4	11.1	8.7	8.9	8.4	101
Orangeglo	7.1	94.5	9.4	12.1	8.6		99
Osh Kirgizia	9	86	8.6	7.9	7.6	10.1	98
Petite Yellow	9.3	106.9	10.7	8.8	8.1	9.6	100
Quetzali	9.8	82.2	8.2	8.2	7.5	10.3	91
Sangria	8.1	118.8	11.9	12.7	6.9	9.8	102
Sorbet Swirl F1	19	82.9	8.3	7.9	7.3	13	88
Sugar Baby	6.7	144.6	14.5	10	9.1	10.3	97
Summer Sweet #2532	11.7	129.1	12.9	16.2	15.5	15.7	83
Summer Sweet #3521Y	16.7	75.1	7.5	7.5	7.4	10.4	99
Sunrise One	11.4	76.6	7.7	7.8	7.3	14	82
Sunshine	9.8	85	8.5	8.5	7.3	9.9	103
Sweet Diane	10.9	90.5	9	8.7	7.4	9.5	97
Sweet Favorite	7.1	124	12.4	11.6	7.8	10.6	110

ICEBOX TYPE (cont'd)	Total Watermelon		Mean Watermelon				Days to Maturity[y]
Variety	Number[x]	Yield (lb)[x]	Weight (lb)	Length (in)	Width (in)	BRIX	
Tiger Baby	12.4	74.9	7.5	7.6	6.9	10.1	96
Treasure Chest	12.5	114.2	11.4	8.7	8.4	16.9	83
Triple Play	22	106.5	10.7	8.3	8.1	13.3	83
Vanguard(HSR 2866)	8.6	97.1	9.7	9.5	8.8	9.3	95
Verona	9.5	142.6	14.3	10	8.2	8.6	97
White Wonder	11.2	83.2	8.3	7.8	7.6	10.3	100
Winter King & Queen	11	78	7.8	7.1	7.1	8.3	107
WT-04-68	6.7	90.9	9.1	9.1	7	10.1	96
Yellow Bird	12.9	114.8	11.5	7.8	7.9	10.6	90
Mean	**10.4**	**99.8**	**10**	**8.8**	**8.04**	**10.3**	**95.7**
P Value	**0.1761**	**0.0015**	**0.0044**	**0**	**0**	**0.033**	**0.4049**

PERSONAL/MINI TYPE	Total Watermelon		Mean Watermelon				Days to Maturity[y]
Variety	Number[x]	Yield (lb)[x]	Weight (lb)	Length (in)	Width (in)	BRIX	
Diana	16.2	49.1	4.9	8.6	5.7	10.6	86
Gold Flower	14.8	53.3	5.3	9.6	4.3	10	92
Golden Sunrise	8.6	45.8	4.6	6.7	6	9.6	96
Hime Kansen	6.9	29.6	3	6	5.3	9.8	105
Jade Star	13.8	59.9	6	7.1	7.1	8	105
New Hampshire Golden Midget	23.9	39.8	4	6.2	6.1	8.8	88
Red Doll	12.9	37	3.7	6.3	5.4	10	93
Solitaire (GV)	11	44.2	4.4	6.3	6.1	9.3	96
Sugar Baby	7.9	54	5.4	6.9	6.8	8	95
Sweet Beauty	5.3	53.5	5.4	9.6	5.4	10.5	107
Yellow Doll	24.3	55.4	5.5	7.3	6.6	10.4	92
Yellow Jubilee	15.1	50.1	5	6.8	6.6	10.6	91
Mean	**13.8**	**48.7**	**4.9**	**7.3**	**6**	**9.7**	**94.9**
P Value	**0.0003**	**0.0021**	**0.291**	**0**	**0**	**0.4474**	**0.2044**

PICNIC TYPE	Total Watermelon		Mean Watermelon				Days to Maturity[y]
Variety	Number[x]	Yield (lb)[x]	Weight (lb)	Length (in)	Width (in)	BRIX	
Crimson Sweet	6.5	159.9	16	9.7	9.6	9.2	95
Lamar(HSR 2920)	10	200.1	20	7.1	7.2	12.1	83
Moon and Stars	6.6	174.3	17.4	10.4	9.7	9.1	88
Sultan	7.5	154	15.4	10.2	7.1	13.5	99
Yellow Shipper (Daisy)	10	162.3	16.2	12	9.1	8.6	90
Mean	**8.1**	**170.1**	**17**	**9.9**	**8.5**	**10.5**	**91**
P Value	**0.129**	**0.7377**	**0.8012**	**0.5164**	**0.0822**	**0.1894**	**0.5073**

x Number of watermelons and total yield of 10 plants

y Days to maturity from transplanting

Comparison of Types: P Value	**0.0066**	**0**	**0**	**0**	**0.0022**	**0**	**0.7587**

Table 4. Marketable yield of icebox, mini and picnic watermelon varieties grown from treated seeds at Washington State University Vancouver REU in 2005.

ICEBOX TYPE	Total Watermelon		Mean Watermelon				Days to
Variety	**Number[x]**	**Yield (lb)[x]**	**Weight (lb)**	**Length (in)**	**Width (in)**	**BRIX**	**Maturity[y]**
Boston	8.1	71.1	8.5	7.9	7.7	19.4	87
Buttercup	9.2	82	9.1	7.8	8.2	9.5	94
Constitution	6.7	51.4	7.7	8.1	7.6	9.7	92
Crimson Tide	5.7	49.1	8.8	6.4	7.4	8.8	91
Freedom	9.3	83.1	8.9	9.3	6.9	9.9	82
HSR 2695 (Viking)	3.3	30.4	9.2	9.7	9.4	8.5	99
HSR 2698 (Lantha)	10	63.2	6.3	7.5	7	9.2	84
Imagination (primed)	10	73.6	7.4	7.4	7.2	9.4	77
Independence	7.1	58.1	8.1	8.4	7.6	10.5	92
Jade Star	7.6	62.4	8	8.7	8.4	9.1	89
Liberty	9.3	83.8	8.3	8.1	7.3	10.1	89
Madrid	7.9	90.8	11.8	12.1	7.2	9.4	102
Montreal	5.7	55.3	9.6	10.2	7.2	8	105
Orange Julius	9.3	79.9	8.7	7.5	8	9.9	91
Petite Treat	7.1	43.7	6.1	7.3	6.9	8.7	87
Promise	10	74.4	7.7	8.5	7.3	9.2	88
Quetzali	10	86.2	8.6	7.7	7.8	10	94
Revolution	5.7	54.5	9.5	9.4	7.1	10.2	87
Ruby	2.9	21.2	7.3	7.5	7.3	10	95
Solid Gold	7.1	62.8	8.8	8.8	8.4	9.3	91
Sugar baby	9	56.1	6.6	4.7	4.6	8.4	89
Sun Ray	10.5	66.6	6.6	7.1	7.3	10	91
Super Crisp 85	10.7	95	8.8	8.3	7.7	14.2	84
Sweet Delight (primed)	10	81.7	8.2	8.1	7.5	9.8	87
Sweet Eat'n	6	64.1	10.6	8.9	7.9	10.2	92
SXW 0016	7.6	62	8	8	7.5	10.2	89
SXW 0017	11.7	83.4	7.2	7	7.3	10.3	89
Vista	5.2	65.8	12.8	10.5	8.3	9.9	97
WT-04-65	10	71.4	8	7.4	7.8	10.5	88
Mean	**8**	**65.6**	**8.4**	**8.2**	**7.5**	**10.1**	**90**
P Value	**0.1259**	**0.207**	**0.006**	**0**	**0**	**0.894**	**0.1165**

PERSONAL/MINI TYPE	Total Watermelon		Mean Watermelon				Days to
Variety	**Number[x]**	**Yield (lb)[x]**	**Weight (lb)**	**Length (in)**	**Width (in)**	**BRIX**	**Maturity[y]**
Afternoon Delight	5.7	23.6	4.1	6.2	5.9	8.9	87
Amarillo	10.7	62.2	5.6	7.9	8.1	10	88
Betsy (8103)	15	49.4	3.3	4.9	4.7	9.3	98
Bobbie (8101)	10	52.4	5.2	6.7	6.5	10.6	86
Extazy	12.4	65.9	5.3	6.6	6.4	9.8	89
Jenny	6.9	36.7	5.4	7.1	6.4	7.8	87
Mickylee	9.5	50.1	5.3	6.7	6.3	8.3	94
Mini Yellow	12.1	63.4	5.2	8.3	8.2	9.7	84
Rugby (41020016)	5.7	28.3	4.9	8.4	5.6	9.5	100
Solitaire	9.3	47.6	5.2	7	6.9	9.6	88
Sweet Beauty	10	41.2	4.2	7.8	5.8	9.5	87
Valdoria	10.5	53.4	5.1	6.6	6.6	9.9	99
Vanessa	13.8	69.2	5	6.3	6.5	9.5	92
Wonder	14.3	57.7	4.1	5.5	5.7	9.7	87
Yellow Doll	8.7	36.9	5	6.9	6.2	10.4	102
Mean	**10.3**	**49.2**	**4.9**	**6.9**	**6.4**	**9.5**	**91**
P Value	**0.1003**	**0.2248**	**0.001**	**0.019**	**0.021**	**0.029**	**0.1431**

PICNIC TYPE	Total Watermelon		Mean Watermelon				Days to
Variety	**Number[x]**	**Yield (lb)[x]**	**Weight (lb)**	**Length (in)**	**Width (in)**	**BRIX**	**Maturity[y]**
Sangria	5.2	75.8	24.2	11.4	6.7	9.2	99

x Number of watermelons and total yield of 10 plants

y Days to maturity from transplanting

Comparison of Types: P Value	**0.007**	**0.008**	**0**	**0**	**0**	**0.542**	**0.293**

Table 5. Marketable yield of icebox, personal/mini and picnic watermelon varieties grown at Washington State University Vancouver REU in 2006.

ICEBOX TYPE	Total Watermelon		Mean Watermelon				Days to
Variety	Number[x]	Yield (lb)[x]	Weight (lb)	Length (in)	Width (in)	BRIX	Maturity[y]
5130	7.3	50.3	7.2	8.2	7.2	10.2	82
7167	6.0	53.2	10.2	9.1	7.7	10.1	111
9651 HQ (ACX 651T)	9.0	108.0	11.9	9.4	8.4	10.1	78
Afternoon Delight	5.3	62.1	11.6	9.2	8.3	10.8	85
Amarillo	11.0	110.1	10.5	8.6	8.3	10.8	90
Atranhanski	5.0	55.1	11.7	8.7	8.4	6.9	101
Betsy 8103	5.5	41.7	7.7	7.5	7.0	10.7	76
Blacktail Mountain	6.7	65.0	9.9	8.9	8.1	9.2	90
Bobbie 8101	4.5	35.3	7.8	7.6	7.4	10.1	84
Boston	7.7	88.3	11.4	8.9	8.3	10.7	84
Butterball	9.3	95.7	10.1	8.2	8.1	10.3	73
Buttercup	9.3	105.5	11.3	8.5	8.5	10.6	87
Cathay Belle	9.0	55.3	6.4	7.5	6.6	10.8	89
Constitution	5.0	57.0	10.9	9.2	8.2	10.8	86
Cream of Saskatchewan	10.0	102.0	10.3	8.6	8.2	9.3	104
Demi-Sweet	4.0	38.4	9.6	7.9	7.9	9.9	89
Early Crimson Treat	6.0	55.5	9.6	8.2	15.4	10.0	84
Early Moonbeam	8.7	63.9	7.6	8.1	7.5	9.7	106
Extazy (6008)	9.0	63.9	7.0	7.6	7.0	10.0	129
Fenway	9.3	90.7	9.4	8.2	7.7	10.6	80
Festival	6.7	74.3	10.9	9.3	8.0	9.6	79
Gold Flower	10.7	66.9	6.5	11.5	5.6	10.7	105
Golden Honey	3.7	42.0	11.1	9.2	7.9	8.2	86
Gypsy	6.5	81.7	12.0	8.4	8.6	9.4	78
HSR 2945	6.0	52.7	9.3	8.6	7.7	9.5	82
Imagination	9.3	93.8	10.1	8.4	8.0	10.2	79
Independence	6.0	69.3	11.5	9.7	8.1	10.7	79
Jubilee	2.0	21.5	9.6	8.9	8.6	8.7	101
Lamar (HSR 2920)	4.0	42.4	10.0	8.7	7.8	9.2	91
Little Boy	1.7	14.0	8.3	8.3	6.9	11.6	94
Lycosweet 5109	4.0	25.4	6.7	7.5	7.1	9.8	115
Malali	5.3	34.9	6.7	8.1	7.4	7.1	101
Melitopolski	4.3	44.9	10.5	8.9	8.1	7.7	96
Mickylee	11.3	82.9	7.3	7.7	7.0	10.1	79
Millenium	4.7	51.6	10.5	9.7	7.5	10.1	79
Millionaire	6.7	77.5	11.6	8.5	7.7	9.6	79
Mini Yellow	8.5	66.8	7.9	7.8	7.4	11.2	78
Navajo Sweet	4.3	33.8	8.1	8.3	7.9	9.5	136
New Orchid	6.0	45.8	7.5	8.3	7.3	9.9	91
Nova	4.5	41.5	8.8	8.1	7.8	10.2	84
Osh Kirgizia	7.0	82.5	11.9	8.8	8.6	10.4	80
Petite Perfection	12.0	75.7	6.3	7.4	6.6	10.9	74
Petite Treat	9.3	58.5	6.4	7.5	6.8	11.2	106
Promise	3.0	30.6	10.2	9.1	8.1	10.0	100
Quetzali	6.0	56.5	9.4	8.6	8.0	10.3	134

ICEBOX TYPE (cont'd)	Total Watermelon		Mean Watermelon				Days to
Variety	Number[x]	Yield (lb)[x]	Weight (lb)	Length (in)	Width (in)	BRIX	Maturity[y]
Revolution	7.3	86.4	11.5	10.8	7.2	10.3	85
Ruby	3.3	38.2	11.0	9.1	7.7	10.6	90
Small Shining Light	4.7	36.0	6.8	6.9	5.8	9.2	125
Smile	8.0	50.3	6.5	8.0	6.8	11.2	83
Sorbet Swirl F1	11.3	113.9	10.1	8.6	7.7	10.0	84
Summer Sweet #2532	3.5	36.9	11.3	8.6	8.4	9.0	103
Summer Sweet #3521Y	3.0	23.7	7.9	7.5	7.4	11.3	84
Sun Ray	9.7	88.4	9.2	7.8	8.0	9.7	83
Sunrise One	4.0	32.2	6.1	7.0	6.5	9.2	117
Sunshine	4.0	36.9	9.9	9.1	7.7	10.8	89
Sweet Beauty	3.3	20.8	6.8	10.2	5.8	11.7	98
Sweet Eat'n	6.0	72.0	11.9	9.2	7.3	10.6	83
SWX 0017	9.5	96.2	9.8	8.7	8.0	11.0	68
Tiger Baby	4.7	37.2	7.6	8.1	7.2	10.1	82
Treasure Chest	11.3	131.8	11.6	8.3	8.5	10.7	82
Tri-X Palomar	5.0	51.1	9.8	8.4	8.2	9.9	80
Valdoria	2.0	16.2	8.1	7.8	7.5	9.7	96
Vanessa	8.3	57.2	6.6	7.6	9.3	10.0	91
White Wonder	7.3	62.5	8.5	9.7	9.3	9.6	87
Winter King & Queen	6.7	67.7	10.4	8.4	8.0	9.5	99
WT-04-65	7.0	72.8	10.0	8.2	8.0	10.6	71
WT-04-68	6.0	61.1	11.3	9.5	8.4	9.9	87
Yellow Bird	6.7	72.0	10.6	8.7	8.3	11.0	104
Yellow Doll	8.3	56.7	6.8	8.1	6.8	11.4	81
Yellow Jubilee	6.7	56.4	8.7	8.6	7.8	9.2	88
Mean	**6.6**	**60.6**	**9.3**	**8.5**	**7.8**	**10.0**	**90.7**
P-Value	**0.0647**	**0.0152**	**0.0001**	**0.0001**	**0.5592**	**0.0000**	**0.0254**

PICNIC TYPE	Total Watermelon		Mean Watermelon				Days to
Variety	Number[x]	Yield (lb)[x]	Weight (lb)	Length (in)	Width (in)	BRIX	Maturity[y]
7177 HQ	8.7	104.5	12.1	9.9	8.2	10.9	82
7187 HQ	5.0	75.0	15.2	10.4	8.9	11.2	129
9601 HQ (ACX 601T)	5.0	74.2	15.4	10.1	9.2	10.8	108
Baby Doll	4.7	68.2	14.8	10.3	8.9	9.8	91
Crimson Sweet	6.3	102.0	15.8	9.8	8.6	10.5	85
Desert king	2.3	48.5	20.1	11.3	9.5	9.9	118
Freedom	4.0	52.1	12.1	11.3	8.1	10.8	124
Imperial	8.3	115.9	14.2	10.3	8.3	9.3	113
Jade Star	5.7	73.9	13.1	9.7	8.6	10.3	75
Lantha (HSR 2698)	5.3	65.5	13.2	9.7	8.7	10.6	89
Liberty	7.0	84.6	12.8	9.7	8.2	10.9	87
Madrid	5.7	71.2	12.4	13.4	7.1	10.1	118
Montreal	4.0	78.4	19.4	13.7	8.2	10.1	87
Moon and Stars	7.0	122.1	18.0	10.8	9.4	9.8	81
Orange Julius	4.7	60.3	13.3	9.4	9.3	9.5	81

PICNIC TYPE (cont'd)	Total Watermelon		Mean Watermelon				Days to
Variety	Number[x]	Yield (lb)[x]	Weight (lb)	Length (in)	Width (in)	BRIX	Maturity[y]
Orange Sweet	2.5	42.5	17.0	9.7	9.6	10.0	78
Orangeglo	5.3	93.4	17.0	14.0	8.8	10.7	89
Petite Yellow	9.3	113.2	12.3	9.6	7.7	9.6	78
Sangria	5.3	62.1	13.8	13.9	7.4	10.4	99
Solid Gold	5.3	77.9	13.9	9.8	9.0	10.1	89
Southern Light	4.0	48.2	12.1	9.1	8.3	10.0	111
Sugar Baby	2.7	45.6	16.3	10.7	9.2	9.5	125
Sultan	3.0	42.1	14.0	13.3	7.4	11.1	89
Super Crisp 85	2.0	26.4	13.7	10.7	8.3	10.7	90
Sweet Delight	8.7	123.3	14.1	10.3	8.6	10.5	81
Sweet Diane	6.7	91.4	13.7	11.6	7.9	10.1	79
Sweet Favorite	4.7	82.1	18.9	15.8	9.8	10.4	84
Vanguard (HSR 2866)	2.3	32.2	13.8	10.3	8.8	10.4	107
Verona	3.0	47.6	16.3	11.6	9.4	8.9	95
Viking (HSR 2695)	3.0	56.4	21.7	16.7	14.7	9.8	103
Vista	4.7	93.7	19.9	13.6	8.8	11.0	97
Yellow Shipper (Daisy)	6.3	89.9	14.5	11.1	8.0	9.0	119
Mean	**5.1**	**73.9**	**15.1**	**11.3**	**8.8**	**10.2**	**96.2**
P-Value	**0.1253**	**0.1692**	**0.0077**	**0.014**	**0.3467**	**0.1499**	**0.2703**

PERSONAL/MINI TYPE	Total Watermelon		Mean Watermelon				Days to
Variety	Number[x]	Yield (lb)[x]	Weight (lb)	Length (in)	Width (in)	BRIX	Maturity[y]
Belle 460	6.0	30.2	5.0	8.2	6.0	9.7	113
Diana	8.7	48.9	5.8	9.9	5.7	10.0	87
Golden Midget	9.3	41.3	4.5	6.8	5.8	7.4	117
Golden Sunrise	2.7	14.1	5.3	6.9	6.0	9.5	84
Hime Kansen	4.0	14.6	3.7	6.6	5.6	10.3	89
Jenny	5.7	33.8	5.9	7.7	6.5	10.1	109
New Hampshire Golden Midget	7.0	25.9	3.1	6.2	5.6	8.5	80
New Queen	3.3	18.4	5.9	8.0	5.9	10.2	97
Precious Petite	7.0	31.7	4.2	6.6	6.0	10.4	107
Red Doll	3.7	18.5	4.9	7.0	6.2	10.1	83
Rugby (41020016)	6.7	27.8	4.0	8.7	4.9	11.5	93
Solitaire	14.0	82.8	5.9	7.3	6.8	10.0	129
Wonder	9.3	54.6	5.8	7.0	6.5	10.2	109
Mean	**6.7**	**34.0**	**4.9**	**7.4**	**5.6**	**9.8**	**99.6**
P-Value	**0.1812**	**0.0199**	**0.2759**	**0.0001**	**0.0002**	**0.0018**	**0.7175**

Carol Miles, Tracy Smith, Lydia Garth, Liz Nelson, and Jeannie Garth Washington State University
Vancouver Research and Extension Unit, 1919 NE 78th Street, Vancouver, WA 98665
milesc@wsu.edu http://vegetables.wsu.edu

PERSONAL / MINI TYPE

						Fruit				
Variety	Days to Maturity[1]	Flesh Color	Rind Color	Ploidy[2]	Shape	Weight (lb)	Length (in)	Width (in)	BRIX[3]	No. years[4]
Belle 460	100	Red	Light green w/ dark veins	D	Round	5.2	8.0	5.9	9.5	2
Betsy 8103	87	Red	Light green w/ dark stripes	T	Round	5.5	6.2	5.9	10.0	2
Cathay Belle	82	Red	Green w/ dark stripes	D	Round/ Oval	5.8	7.3	6.5	10.2	3
Diana	87	Red	Yellow	D	Oblong	5.3	9.2	5.7	10.3	2
Gold Baby	91	Yellow	Light green w/ dark stripes	D	Blocky	5.0	6.8	6.4	9.1	1
Gold Flower	98	Yellow	Green w/ dark green stripes	D	Oblong	5.9	10.5	5.0	10.4	2
Golden Midget	99	Red	Light green	D	Round	4.2	6.6	5.6	7.4	2
Golden Sunrise	90	Yellow	Green w/ dark stripes	D	Round	4.9	6.8	6.0	9.5	2
Hime Kansen	95	Red	Light green w/dark stripes	D	Round	3.4	6.3	5.3	9.9	3
Jenny	98	Red	Light green w/ dark stripes	D	Round	5.7	7.4	6.5	8.9	2

[1] Days to maturity from transplant
[2] D = Diploid (with seeds) T = Triploid (seedless)
[3] Brix is a measure of soluable solids and indicates % sweetness
[4] Number of years which data has been collected

PERSONAL / MINI TYPE										
						Fruit				
Variety	Days to Maturity[1]	Flesh Color	Rind Color	Ploidy[2]	Shape	Weight (lb)	Length (in)	Width (in)	BRIX[3]	No. years[4]
New Hampshire Golden Midget	84	Red	Yellow	D	Round	3.6	6.2	5.9	8.7	2
New Queen	87	Orange /Yellow	Green w/ dark stripes	D	Round	5.9	7.7	6.1	10.5	4
Precious Petite	105	Red	Green w/ dark stripes	T	Round	4.6	6.5	6.0	9.3	2
Red Doll	85	Red	Light green w/ thin stripes	D	Round	4.0	6.6	5.7	10.4	4
Rugby (41020016)	96	Yellow	Light green w/ dark stripes	T	Round	4.4	8.5	5.2	10.5	2
Solitaire	102	Red	Dark green	T	Round	5.5	6.9	6.7	9.5	3
Vanessa	93	Red	Dark green	T	Round	5.6	6.9	6.7	9.5	3
Wonder	98	Red	Dark green	T	Round	4.9	6.3	6.1	9.9	2

[1] Days to maturity from transplant

[2] D = Diploid (with seeds) T = Triploid (seedless)

[3] Brix is a measure of soluable solids and indicates % sweetness

[4] Number of years which data has been collected

ICEBOX TYPE										
						Fruit				
Variety	Days to Maturity[1]	Flesh Color	Rind Color	Ploidy[2]	Shape	Weight (lb)	Length (in)	Width (in)	BRIX[3]	No. years[4]
7167	108	Red	Green w/ broad stripes	T	Round	9.7	9.0	7.6	9.8	2
7177 HQ	89	Red	Green w/ broad stripes	T	Round	10.9	9.2	7.9	11.4	2
9651 HQ (ACX 651T)	86	Red	Dark green	T	Round	11.4	9.0	8.3	10.2	2
Afternoon Delight	86	Red	Green w/ dark stripes	T	Round	7.8	7.7	7.1	9.8	2
Amarillo	89	Yellow	Light green w/ dark stripes	T	Round	8.1	8.3	8.2	10.4	2
Astrakhanski	103	Red	Green w/ dark stripes	D	Round	11.8	8.7	8.4	6.9	2
Blacktail Mountain	90	Red	Dark green	D	Round	8.5	8.3	7.7	8.7	3
Bobbie 8101	89	Red	Green w/ dark stripes	T	Round	6.4	7.0	6.8	9.7	3
Boston	85	Red	Green w/ dark stripes	T	Round	9.9	8.4	8.0	10.1	2
Butterball	84	Yellow	Green w/ dark stripes	T	Round	9.3	7.9	8.0	9.8	2
Buttercup	90	Yellow	Green w/ dark stripes	T	Round	10.2	8.2	8.4	10.1	2
Constitution	89	Red	Green w/ dark stripes	T	Round	9.3	8.7	7.9	10.2	2
Crimson Tide	91	Red	Green w/ broad stripes	D	Oval	8.8	6.4	7.4	8.8	1
Cream of Saskatchewan	92	White	Green w/ dark stripes	D	Round	9.4	8.0	7.9	8.9	3
Demi-Sweet	91	Red	Green w/ dark stripes	T	Round	9.7	8.1	8.1	10.3	2

ICEBOX TYPE										
						Fruit				
Variety	Days to Maturity[1]	Flesh Color	Rind Color	Ploidy[2]	Shape	Weight (lb)	Length (in)	Width (in)	BRIX[3]	No. years[4]
Early Crimson Treat	86	Red	Green w/ dark stripes	D	Round	9.1	8.1	7.5	10.1	4
Early Moonbeam	98	Yellow	Green w/ dark stripes	D	Round	7.0	8.1	7.6	9.9	2
Extazy (6008)	103	Red	Green w/ very broad stripes	T	Round	6.4	7.1	6.8	9.5	3
Fenway	84	Red	Dark green w/ darker stripes	T	Round	8.9	7.9	7.6	10.3	2
Festival	86	Red	Green w/ dark stripes	D	Round	10.5	8.6	8.0	10.2	2
Freedom	103	Red	Green w/ dark stripes	T	Blocky	10.5	10.3	7.5	10.4	2
Genesis	84	Red	Light green w/ stripes	T	Round	8.9	8.1	7.5	9.3	1
Golden Honey	93	Orange	Green w/ dark stripes	D	Round	10.3	8.9	7.9	9.2	2
HA 5130	87	Red	Green w/ dark stripes	T	Round	6.8	7.6	6.7	9.9	2
HSR 2945	92	Red	Dark green	D	Round	8.6	8.3	7.7	9.2	2
Imagination	82	Red	Dark green	T	Round	9.2	8.1	7.8	9.5	3
Independence	85	Red	Green w/ broad stripes	T	Round	9.8	9.0	7.8	10.6	2
Jade Star	86	Red	Dark Green	D	Round	10.5	8.8	8.2	9.4	4
Japanese Cream Fleshed Suika	82	White	Light green w/ dark stripes	D	Round	10.1	8.3	7.9	8.5	1
Jubilee	96	Red	Green w/ dark stripes	D	Round	9.7	8.1	7.9	9.7	3

ICEBOX TYPE										
						Fruit				
Variety	Days to Maturity[1]	Flesh Color	Rind Color	Ploidy[2]	Shape	Weight (lb)	Length (in)	Width (in)	BRIX[3]	No. years[4]
Lamar (HSR 2920)	84	Red	Dark green	T	Round	7.8	7.7	7.5	10.7	3
Lantha (HSR 2698)	87	Red	Dark green	D	Round	9.7	8.6	7.8	9.9	2
Liberty	88	Red	Green w/ dark stripes	T	Round	10.5	8.9	7.8	10.5	2
Little Boy	89	Red	Dark green w/ dark stripes	D	Round	7.0	7.9	6.6	10.6	2
Lycosweet 5109	108	Red	Dark green	T	Round	7.3	7.5	7.1	9.5	2
Malali	103	Red	Medium dark green	D	Round	6.7	7.6	7.4	6.7	2
Melitopolski	95	Red	Green w/ dark stripes	D	Round	10.6	8.8	8.3	11.5	3
Mickylee	86	Red	Light green w/ mottled stripes	D	Round	6.3	7.2	6.6	9.2	2
Millenium	81	Red	Dark green	T	Round	9.2	8.9	7.6	10.6	2
Millionaire	91	Red	Light green w/ dark stripes	T	Round	9.9	8.2	7.6	10.4	2
Mini Yellow	81	Yellow	Dark green	T	Round	6.5	8.1	7.8	10.5	2
Navajo Sweet	105	Red	Light green w/ mottled stripes	D	Round	9.4	8.2	8.0	9.6	3
New Orchid	90	Orange	Green w/ dark stripes	D	Round	8.9	8.1	7.3	10.7	3
Nova	87	Red	Green w/ med green stripes	T	Round	9.6	8.1	7.8	9.6	2
Orange Julius	86	Orange	Light green w/ dark stripes	T	Round	11.0	8.4	8.7	9.7	2

ICEBOX TYPE										
						Fruit				
Variety	Days to Maturity[1]	Flesh Color	Rind Color	Ploidy[2]	Shape	Weight (lb)	Length (in)	Width (in)	BRIX[3]	No. years[4]
Orchid Sweet	83	Yellow	Light green w/ dark stripes	T	Round	9.4	8.3	8.1	9.1	1
Osh Kirgizia	89	Red	Green w/ mottled stripes	D	Round	10.2	8.4	8.1	10.2	2
Petite Perfection	80	Orange /Red	Green w/ dark stripes	T	Round	6.0	7.2	6.4	10.4	2
Petite Treat	97	Red	Green w/ dark stripes	T	Round	6.2	7.4	6.9	10.0	2
Petite Yellow	89	Yellow	Green w/ dark stripes	D	Round	11.5	9.2	7.9	9.6	2
Poquito	78	Red	Light green w/ green stripes	T	Round	8.9	7.9	7.7	11.0	1
Promise	88	Red	Green w/ med green stripes	T	Round	9.5	8.9	7.8	10.0	3
Quetzali	108	Red	Green w/ dark stripes	D	Round	9.0	8.0	7.5	9.7	3
Revolution	86	Red	Light green w/ dark stripes	T	Blocky	10.5	10.1	7.1	10.2	2
Ruby	93	Red	Green w/ broad stripes	T	Round	9.1	8.3	7.5	10.3	2
Small Shining Light	103	Red	Dark green	D	Round	7.3	7.0	6.7	8.3	2
Smile	83	Red	Green w/ dark stripes	D	Round	6.5	8.0	6.8	11.2	1
Solid Gold	90	Yellow	Green w/ dark stripes	T	Round	11.3	9.3	8.7	9.7	2
Sorbet Swirl F1	84	Yellow	Green w/ dark stripes	D	Round	9.2	8.2	7.6	11.5	3
Southern Light	98	Red	Dark green	D	Round	9.5	8.2	7.5	9.1	2

ICEBOX TYPE										
						Fruit				
Variety	Days to Maturity[1]	Flesh Color	Rind Color	Ploidy[2]	Shape	Weight (lb)	Length (in)	Width (in)	BRIX[3]	No. years[4]
Summer Sweet #3521Y	92	Yellow	Green w/ dark stripes	T	Round	7.7	7.5	7.4	10.8	2
Sun Ray	87	Yellow	Green w/ dark stripes	T	Round	7.9	7.5	7.6	9.8	2
Sunrise One	100	Pink	Green w/ dark stripes	D	Round	6.9	7.4	6.9	11.6	2
Sunshine	96	Yellow	Green w/ dark stripes	D	Round / Oval	9.2	8.8	7.5	10.4	2
Super Crisp 85	87	Red	Green w/ dark stripes	T	Round	11.2	9.5	8.0	12.4	2
Sweet Beauty	93	Red	Green w/ dark stripes	D	Oblong	6.0	9.5	5.6	10.4	3
Sweet Delight	84	Red	Green w/ med green stripes	T	Oval	11.2	9.2	8.0	10.1	2
Sweet Diane	88	Red	Green w/ dark stripes	D	Blocky	11.4	10.1	7.6	9.8	2
Sweet Eat'n	85	Red	Green w/ med green stripes	T	Round	10.8	9.0	7.6	10.7	3
SXW 0016	89	Red	Green w/ dark stripes	T	Round	8.0	8.0	3.8	5.1	1
SXW 0017	79	Red	Dark green	T	Round	8.5	7.8	7.7	10.6	2
Thai Black	96	Red	Dark green	D	Round	8.2	7.2	6.8	7.2	1
Tiger Baby	90	Red	Green w/ dark stripes	D	Round	7.6	11.6	7.1	9.8	3
Treasure Chest	80	Yellow	Green w/ dark stripes	T	Round	11.4	8.5	8.5	13.0	3
Triple Play	79	Red	Green w/ dark stripes	T	Round	10.6	8.3	8.3	12.5	2

ICEBOX TYPE										
						Fruit				
Variety	Days to Maturity[1]	Flesh Color	Rind Color	Ploidy[2]	Shape	Weight (lb)	Length (in)	Width (in)	BRIX[3]	No. years[4]
Tri-X Palomar	80	Red	Med green w/ dark stripes	T	Round	9.8	4.2	8.2	9.9	1
Ultra Cool	83	Red	Green w/ med green stripes	T	Round	11.0	8.7	8.3	8.3	1
Valdoria	95	Red	Dark green	T	Round	7.3	7.1	7.1	9.3	3
Vanguard (HSR 2866)	101	Red	Green w/ dark stripes	D	Round	11.8	9.9	8.8	9.8	2
White Wonder	93	White	Green w/ narrow stripes	D	Round	8.4	8.8	8.5	9.9	2
Winter King & Queen	100	Red	Pale green	D	Round	9.2	7.7	7.4	8.6	3
WT-04-65	80	Yellow	Green w/ dark stripes	T	Round	9.0	7.8	7.9	10.5	2
WT-04-68	92	Red	Green w/ dark stripes	T	Round	10.2	9.3	7.7	10.0	2
Yellow Bird	97	Yellow	Green w/ dark stripes	T	Round	11.1	8.3	8.1	10.8	2
Yellow Doll	88	Yellow	Green w/ dark stripes	D	Round	6.0	7.5	6.7	10.6	4
Yellow Jubilee	89	Red	Yellow w/ orange stripes	D	Round	6.8	7.7	7.2	9.9	2

[1] Days to maturity from transplant

[2] D = Diploid (with seeds) T = Triploid (seedless)

[3] Brix is a measure of soluable solids and indicates % sweetness

[4] Number of years which data has been collected

PICNIC TYPE										
						Fruit				
Variety	Days to Maturity[1]	Flesh Color	Rind Color	Ploidy[2]	Shape	Weight (lb)	Length (in)	Width (in)	BRIX[3]	No. years[4]
7187 HQ	112	Red	Green w/ very broad stripes	T	Round	12.7	9.6	8.4	10.7	2
9601 HQ (ACX 601T)	97	Red	Dark green	T	Round	14.1	9.4	8.8	10.2	2
Baby Doll	89	Yellow	Green w/ dark stripes	D	Round	14.7	10.1	8.9	8.9	2
Crimson Sweet	89	Red	Light green w/ broad stripes	D	Round	15.5	9.8	9.0	9.9	2
Desert king	105	Yellow	Light green	D	Round	19.4	10.9	9.6	8.6	2
Gypsy	85	Red	Green w/ dark stripes	T	Round	12.1	8.8	8.7	9.4	2
Harmony	76	Red	Light green w/med stripes	T	Round	12.6	9.7	8.5	11.4	1
Imperial	104	Red	Green w/ dark stripes	D	Blocky / Oval	14.3	10.5	8.3	9.3	2
Madrid	110	Red	Light green w/ med stripes	D	Oblong	12.1	12.7	7.2	9.8	2
Montreal	96	Red	Green w/ broad stripes	D	Blocky	14.5	12.0	7.7	9.1	2
Moon and Stars	86	Red	Dark green w/ yellow flecks	D	Round	16.7	10.4	9.3	9.7	2
Orange Sweet	90	Orange	Light green w/ med stripes	T	Round	14.0	9.2	9.3	9.2	2

PICNIC TYPE										
						Fruit				
Variety	Days to Maturity[1]	Flesh Color	Rind Color	Ploidy[2]	Shape	Weight (lb)	Length (in)	Width (in)	BRIX[3]	No. years[4]
Orangeglo	94	Orange	Green w/ dark stripes	D	Oblong	13.2	13.0	8.7	10.7	2
Sangria	100	Red	Green w/ very broad stripes	D	Oblong	15.9	13.0	7.1	9.9	2
Sugar Baby	118	Red	Dark green	D	Round	12.7	9.6	8.9	10.2	3
Sultan	94	Red	Green w/ broad stripes	D	Blocky	14.7	11.7	7.2	12.3	2
Summer Sweet #2532	93	Red	Green w/ dark stripes	T	Round	12.1	9.1	8.6	12.4	2
Sweet Favorite	97	Red	Green w/ dark stripes	D	Blocky	15.7	13.7	8.8	10.5	2
Verona	96	Red	Dark Green	D	Round / Oval	15.3	10.8	8.8	8.8	2
Viking (HSR 2695)	101	Red	Green w/ dark stripes	D	Round	15.5	13.2	12.1	9.1	2
Vista	97	Red	Green w/ dark stripes	D	Blocky	16.4	12.0	8.5	10.4	2
Yellow Shipper (Daisy)	105	Yellow/ Orange	Green w/ broad stripes	D	Blocky	15.4	11.5	8.6	8.8	2

[1] Days to maturity from transplant

[2] D = Diploid (with seeds) T = Triploid (seedless)

[3] Brix is a measure of soluable solids and indicates % sweetness

[4] Number of years which data has been collected

Carol Miles, Ph.D.
Vegetable Extension Specialist

WSU Mount Vernon NWREC
16650 State Route 536
Mount Vernon, WA 98273
USA
Tel. 360•848•6150
Fax 360•848•6159
E-mail: milesc@wsu.edu
vegetables.wsu.edu

Mount Vernon Northwestern Washington Research and Extension Center

Vegetable Research and Extension

Watermelon Variety Descriptions

Days to Maturity were measured from transplanting to harvest.

Brix is a measure of sweetness, where 7.8 - 8.2 is somewhat sweet, 8.3 - 9.0 is sweet, and >9.0 is very sweet.

Ave. Fruit Wt. was based on all marketable fruit

Personal/Mini Icebox Picnic

Personal/Mini

Belle 460
Days to Maturity: 85
Brix: 9.5
Ave. Fruit Wt.: 5.2 lbs

Betsy 8103
Days to Maturity: 87
Brix: 10.0
Ave. Fruit Wt.: 5.5 lbs

Cathay Belle
Days to Maturity: 82
Brix: 10.2
Ave. Fruit Wt.: 5.8 lbs

Diana
Days to Maturity: 87
Brix: 10.3
Ave. Fruit Wt.: 5.3 lbs

Gold Baby[1]
Days to Maturity: 91
Brix: 9.1
Ave. Fruit Wt.: 5.0 lbs

Gold Flower
Days to Maturity: 88
Brix: 10.4
Ave. Fruit Wt.: 5.9 lbs

Golden Midget
Days to Maturity: 90
Brix: 7.4
Ave. Fruit Wt.: 4.2 lbs

Golden Sunrise
Days to Maturity: 90
Brix: 9.5
Ave. Fruit Wt.: 4.9 lbs

Hime Kansen
Days to Maturity: 95
Brix: 9.9
Ave. Fruit Wt.: 3.4 lbs

Jenny
Days to Maturity: 88
Brix: 8.9
Ave. Fruit Wt.: 5.7 lbs

New Hampshire Golden Midget
Days to Maturity: 84
Brix: 8.7
Ave. Fruit Wt.: 3.6 lbs

New Queen
Days to Maturity: 87
Brix: 10.5
Ave. Fruit Wt.: 5.9 lbs

Precious Petite
Days to Maturity: 95

Brix: 9.3
Ave. Fruit Wt.: 4.6 lbs

Red Doll
Days to Maturity: 85

Brix: 10.4
Ave. Fruit Wt.: 4.0 lbs

Rugby (41020016)
Days to Maturity: 96
Brix: 10.5
Ave. Fruit Wt.: 4.4 lbs

Solitaire
Days to Maturity: 89
Brix: 9.5
Ave. Fruit Wt.: 5.5 lbs

Vanessa
Days to Maturity: 93
Brix: 9.5
Ave. Fruit Wt.: 5.6 lbs

Wonder
Days to Maturity: 88
Brix: 9.9
Ave. Fruit Wt.: 4.9 lbs

Icebox

7167

7177HQ

Days to Maturity: 98
Brix: 9.8
Ave. Fruit Wt.: 9.7 lbs

Days to Maturity: 89
Brix: 11.4
Ave. Fruit Wt.: 10.9 lbs

9651 HQ (ACX 651T)
Days to Maturity: 86
Brix: 10.2
Ave. Fruit Wt.: 11.4 lbs

Afternoon Delight
Days to Maturity: 86
Brix: 9.8
Ave. Fruit Wt.: 7.8 lbs

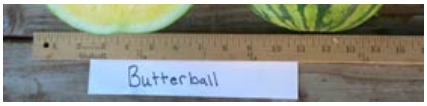
Amarillo
Days to Maturity: 89
Brix: 10.4
Ave. Fruit Wt.: 8.1 lbs

Astrakhanski
Days to Maturity: 103
Brix: 6.9
Ave. Fruit Wt.: 11.8 lbs

Blacktail Mountain
Days to Maturity: 90
Brix: 8.7
Ave. Fruit Wt.: 8.5 lbs

Bobbie 8101
Days to Maturity: 89
Brix: 9.7
Ave. Fruit Wt.: 6.4 lbs

Boston
Days to Maturity: 85
Brix: 10.1
Ave. Fruit Wt.: 9.9 lbs



Butterball
Days to Maturity: 84
Brix: 9.8
Ave. Fruit Wt.: 9.3 lbs

Buttercup
Days to Maturity: 90
Brix: 10.1
Ave. Fruit Wt.: 10.2 lbs

Constitution
Days to Maturity: 89
Brix: 10.2
Ave. Fruit Wt.: 9.3 lbs

Crimson Tide[1]
Days to Maturity: 91
Brix: 8.8
Ave. Fruit Wt.: 8.8 lbs

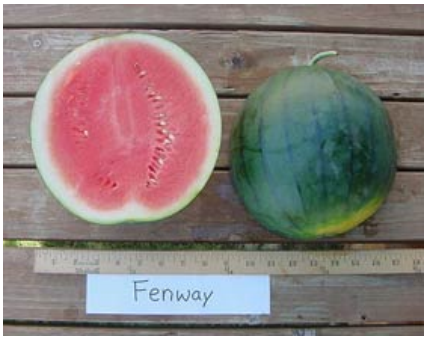
Cream of Saskatchewan
Days to Maturity: 86
Brix: 8.9
Ave. Fruit Wt.: 9.4 lbs

Demi-Sweet
Days to Maturity: 91
Brix: 10.3
Ave. Fruit Wt.: 9.7 lbs

Early Crimson Treat
Days to Maturity: 86
Brix: 10.1
Ave. Fruit Wt.: 9.1 lbs

Early Moonbeam
Days to Maturity: 88
Brix: 9.9
Ave. Fruit Wt.: 7.0 lbs

Extazy (6008)
Days to Maturity: 90
Brix: 9.5
Ave. Fruit Wt.: 6.4 lbs



Fenway
Days to Maturity: 84
Brix: 10.3
Ave. Fruit Wt.: 8.9 lbs

Festival[2]
Days to Maturity: 86
Brix: 10.2
Ave. Fruit Wt.: 10.5 lbs

Freedom
Days to Maturity: 88
Brix: 10.4
Ave. Fruit Wt.: 10.5 lbs

Genesis[1]
Days to Maturity: 84
Brix: 9.3
Ave. Fruit Wt.: 8.9 lbs

Golden Honey
Days to Maturity: 93
Brix: 9.2
Ave. Fruit Wt.: 10.3 lbs

HA 5130
Days to Maturity: 87
Brix: 9.9
Ave. Fruit Wt.: 6.8 lbs

HSR 2945
Days to Maturity: 92
Brix: 9.2
Ave. Fruit Wt.: 8.6 lbs

Imagination
Days to Maturity: 82
Brix: 9.5
Ave. Fruit Wt.: 9.2 lbs

Independence
Days to Maturity: 85
Brix: 10.6
Ave. Fruit Wt.: 9.8 lbs

Jade Star
Days to Maturity: 86
Brix: 9.4
Ave. Fruit Wt.: 10.5 lbs

Japanese Cream Fleshed Suika[1]

Days to Maturity: 82
Brix: 8.5
Ave. Fruit Wt.: 10.1 lbs

Jubilee[2]

Days to Maturity: 96
Brix: 9.7
Ave. Fruit Wt.: 9.7 lbs

Lamar
Days to Maturity: 84
Brix: 10.7
Ave. Fruit Wt.: 7.8 lbs

Lantha (HSR 2698)
Days to Maturity: 87
Brix: 9.9
Ave. Fruit Wt.: 9.7 lbs

Liberty
Days to Maturity: 88
Brix: 10.5
Ave. Fruit Wt.: 10.5 lbs

Little Boy
Days to Maturity: 89
Brix: 10.6
Ave. Fruit Wt.: 7.0 lbs

Lycosweet 5109
Days to Maturity: 98
Brix: 9.5
Ave. Fruit Wt.: 7.3 lbs

Malali
Days to Maturity: 103
Brix: 6.7
Ave. Fruit Wt.: 6.7 lbs

Melitopolski
Days to Maturity: 95
Brix: 11.5
Ave. Fruit Wt.: 10.6 lbs

Mickylee
Days to Maturity: 86
Brix: 9.2
Ave. Fruit Wt.: 6.3 lbs

Millenium
Days to Maturity: 81
Brix: 10.6
Ave. Fruit Wt.: 9.2 lbs

Millionaire
Days to Maturity: 91
Brix: 10.4
Ave. Fruit Wt.: 9.9 lbs

Mini Yellow
Days to Maturity: 81
Brix: 10.5
Ave. Fruit Wt.: 6.5 lbs

Navajo Sweet
Days to Maturity: 92
Brix: 9.6
Ave. Fruit Wt.: 9.4 lbs

New Orchid
Days to Maturity: 90
Brix: 10.7
Ave. Fruit Wt.: 8.9 lbs

Nova
Days to Maturity: 87
Brix: 9.6
Ave. Fruit Wt.: 9.6 lbs

Orange Julius
Days to Maturity: 86
Brix: 9.7
Ave. Fruit Wt.: 11.0 lbs

Orchid Sweet[1]
Days to Maturity: 83
Brix: 9.1
Ave. Fruit Wt.: 9.4 lbs

Osh Kirgizia
Days to Maturity: 89
Brix: 10.2
Ave. Fruit Wt.: 10.2 lbs

Petite Perfection
Days to Maturity: 80
Brix: 10.4
Ave. Fruit Wt.: 6.0 lbs

Petite Treat
Days to Maturity: 87
Brix: 10.0
Ave. Fruit Wt.: 6.2 lbs

Petite Yellow
Days to Maturity: 89
Brix: 9.6
Ave. Fruit Wt.: 11.5 lbs

Poquito[1]
Days to Maturity: 78
Brix: 11.0
Ave. Fruit Wt.: 8.9 lbs

Promise
Days to Maturity: 88
Brix: 10.0
Ave. Fruit Wt.: 9.5 lbs

Quetzali
Days to Maturity: 94
Brix: 9.7
Ave. Fruit Wt.: 9.0 lbs

Revolution
Days to Maturity: 86
Brix: 10.2
Ave. Fruit Wt.: 10.5 lbs

Ruby
Days to Maturity: 93
Brix: 10.3
Ave. Fruit Wt.: 9.1 lbs

Small Shining Light
Days to Maturity: 88
Brix: 8.3
Ave/ Fruit Wt.: 7.3 lbs

Smile[1]
Days to Maturity: 83
Brix: 11.2
Ave. Fruit Wt.: 6.5 lbs

Solid Gold
Days to Maturity: 90
Brix: 9.7
Ave. Fruit Wt.: 11.3 lbs

Sorbet Swirl

Southern Light

Days to Maturity: 84
Brix: 11.5
Ave. Fruit Wt.: 9.2 lbs

Days to Maturity: 88
Brix: 9.1
Ave. Fruit Wt.: 9.5 lbs

Summer Sweet #3521Y
Days to Maturity: 92
Brix: 10.8
Ave. Fruit Wt.: 7.7 lbs

Sun Ray
Days to Maturity: 87
Brix: 9.8
Ave. Fruit Wt.: 7.9 lbs

Sunrise One
Days to Maturity: 85
Brix: 11.6
Ave. Fruit Wt.: 6.9 lbs

Sunshine
Days to Maturity: 96
Brix: 10.4
Ave. Fruit Wt.: 9.2 lbs

Super Crisp 85
Days to Maturity: 87
Brix: 12.4
Ave. Fruit Wt.: 11.2 lbs

Sweet Beauty
Days to Maturity: 93
Brix: 10.4
Ave. Fruit Wt.: 6.0 lbs

Sweet Delight
Days to Maturity: 84
Brix: 10.1
Ave. Fruit Wt.: 11.2 lbs

Sweet Diane
Days to Maturity: 88
Brix: 9.8
Ave. Fruit Wt.: 11.4 lbs

Sweet Eat'n
Days to Maturity: 85
Brix: 10.7
Ave. Fruit Wt.: 10.8 lbs

SXW 0016[1]
Days to Maturity: 89
Brix: 5.1
Ave. Fruit Wt.: 8.0 lbs

SXW 0017
Days to Maturity: 79
Brix: 10.6
Ave. Fruit Wt.: 8.5 lbs

Thai Black[1]
Days to Maturity: 96
Brix: 7.2
Ave. Fruit Wt.: 8.2 lbs

Tiger Baby
Days to Maturity: 90
Brix: 9.8
Ave. Fruit Wt.: 7.6 lbs

Treasure Chest
Days to Maturity: 80
Brix: 13.0
Ave. Fruit Wt.: 11.4 lbs

Triple Play
Days to Maturity: 79
Brix: 12.5
Ave. Fruit Wt.: 10.6 lbs

Tri X Palomar[1]
Days to Maturity: 80
Brix: 9.9
Ave. Fruit Wt.: 9.8 lbs

Ultra Cool[1]
Days to Maturity: 83
Brix: 8.3
Ave. Fruit Wt.: 11.0 lbs

Valdoria
Days to Maturity: 95
Brix: 9.3
Ave. Fruit Wt.: 7.3 lbs

Vanguard (HSR 2866)
Days to Maturity: 91
Brix: 9.8
Ave. Fruit Wt.: 11.8 lbs

White Wonder
Days to Maturity: 93
Brix: 9.9
Ave. Fruit Wt.: 8.4 lbs

Winter King and Queen
Days to Maturity: 100
Brix: 8.6
Ave. Fruit Wt.: 9.2 lbs

WT-04-65
Days to Maturity: 80
Brix: 10.5
Ave. Fruit Wt.: 9.0 lbs

WT-04-68
Days to Maturity: 92
Brix: 10.0
Ave. Fruit Wt.: 10.2 lbs

Yellow Bird
Days to Maturity: 87
Brix: 10.8
Ave. Fruit Wt.: 11.1 lbs

Yellow Doll
Days to Maturity: 88
Brix: 10.6
Ave. Fruit Wt.: 6.0 lbs

Yellow Jubilee
Days to Maturity: 89
Brix: 9.9
Ave. Fruit Wt.: 6.8 lbs

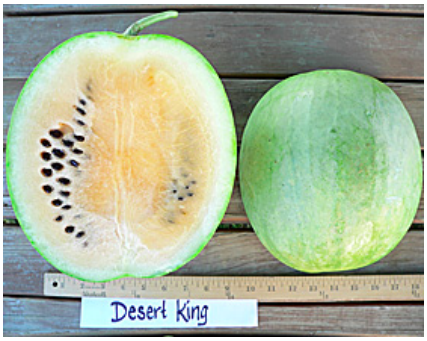
Picnic

7187 HQ
Days to Maturity: 92
Brix: 10.7
Ave. Fruit Wt.: 12.7 lbs

9601 HQ (ACX601T)
Days to Maturity: 87
Brix: 10.2
Ave. Fruit Wt.: 14.1 lbs

Baby Doll
Days to Maturity: 89
Brix: 8.9
Ave. Fruit Wt.: 14.7 lbs

Crimson Sweet
Days to Maturity: 89
Brix: 9.9
Ave. Fruit Wt.: 15.5 lbs



Desert King
Days to Maturity: 95

Brix: 8.6
Ave. Fruit Wt.: 19.4 lbs

Gypsy
Days to Maturity: 85

Brix: 9.4
Ave. Fruit Wt.: 12.1 lbs

Harmony[1]
Days to Maturity: 76
Brix: 11.4
Ave. Fruit Wt.: 12.6 lbs

Imperial
Days to Maturity: 94
Brix: 9.3
Ave. Fruit Wt.: 14.3 lbs

Madrid
Days to Maturity: 95
Brix: 9.8
Ave. Fruit Wt.: 12.1 lbs

Montreal
Days to Maturity: 96
Brix: 9.1
Ave. Fruit Wt.: 14.5 lbs

Moon & Stars
Days to Maturity: 86

Brix: 9.7
Ave. Fruit Wt.: 16.7 lbs

Orange Sweet
Days to Maturity: 90

Brix: 9.2
Ave. Fruit Wt.: 14.0 lbs

Orangeglo
Days to Maturity: 94
Brix: 10.7
Ave. Fruit Wt.: 13.2 lbs

Sangria
Days to Maturity: 100
Brix: 9.9
Ave. Fruit Wt.: 15.9 lbs

Sugar Baby
Days to Maturity: 91
Brix: 10.2

Sultan
Days to Maturity: 94
Brix: 12.3

Ave. Fruit Wt.: 12.7 lbs

Ave. Fruit Wt.: 14.7 lbs

Summer Sweet #2532
Days to Maturity: 93

Brix: 12.4
Ave. Fruit Wt.: 12.1 lbs

Sweet Favorite
Days to Maturity: 97

Brix: 10.5
Ave. Fruit Wt.: 15.7 lbs

Verona
Days to Maturity: 96
Brix: 8.8
Ave. Fruit Wt.: 15.3 lbs

Viking (HSR 2695)
Days to Maturity: 91
Brix: 9.1
Ave. Fruit Wt.: 15.5 lbs

Vista
Days to Maturity: 97
Brix: 10.4
Ave. Fruit Wt.: 16.4 lbs

Yellow Shipper
Days to Maturity: 95
Brix: 8.8
Ave. Fruit Wt.: 15.4 lbs

---

1 One year's data only.

2 This variety offered in a different size and shape.

WSU Mount Vernon NWREC, 16650 State Route 536, Mount Vernon, WA 98273-4768 USA, 360-848-6150, FAX 360-848-6159, Contact Us