



2019

Chowan County Watermelon Variety Demonstration Trial

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Introduction

A demonstration trial was transplanted on April 29th, 2019 to evaluate the yields and quality of 13 watermelon varieties in Chowan County, North Carolina, compared to the industry standards 'Fascination' and 'Exclamation'. Transplants were grown in a greenhouse and established in a bare ground field in Rocky Hock, NC. This trial was not replicated; however, it provides a snapshot of how well a given variety is adapted to northeastern NC growing conditions.

Materials & Methods

'Fascination' and 'Exclamation' were used in this trial as industry standards. Each plot included 15 plants in 3 rows of 5. The two outside rows within each plot were excluded from yield counts to prevent border effect, and melons were only harvested and evaluated from the 5 plants in the middle row. Triploid seedless watermelons require a diploid pollen donor, therefore 'Wildcard Plus' was used as the pollinizer variety and planted every 4 plants.

The melons were harvested once a week for 5 weeks and then evaluated visually in week 6. Because production decreased significantly after week 3 (80-90% of fruit came off in first 3 harvests), data from the last 3 weeks were not included in the quality rating averages and yield counts. 'Walker' and 'Warrior' were the only varieties that reset a significant amount of fruit that was ready to pick in week 6 (3 melons on 'Walker' and 5 melons on 'Warrior').

Weight, length to diameter ratio, rind thickness, brix, hollow heart, color, and seed size were all rated and recorded on at least 5 melons from each variety. Brix were measured using a manual refractometer, and seed size was rated visually on a scale of 1 to 5 with very small seed being a 1 and presence of large seed being a 5. Only seed size rating was recorded, not amount of seed. Hollow heart was rated on a scale of 1 to 5 with a 1 being no hollow heart present and a 5 being severe hollow heart. Color was also rated on a scale of 1 to 5 with 1 being light pink and a 5 being deep red.

It is important to note that due to germination issues, only 14 plants of 'Roadtrip' were transplanted. This should not have affected total yield, as there were still 5 plants in the middle row where the yield measurements were taken.

Results

Yield reductions may have occurred due to lack of moisture in the spring. Many varieties recovered in July after sufficient rainfall.

Table 1.0 Monthly Weather History

Month	monthly AVG of Daily max air temperature at 2m (F)	monthly AVG of daily min air temp at 2m (F)	monthly SUM of daily precipitation at 2m (F)
May 2019	85.2	66.4	1.5
June 2019	86.6	70.7	1.4
July 2019	91.3	74	3.52
Aug 2019	87.6	72.9	4.88

Data from Northeastern Regional Airport weather station (KEDE)

These evaluations were collected and an average was determined from the first 3 harvests. Table 2.0 on the following page includes all of the quality and yield data. Photographs illustrate how the fruit appeared along with key yield and quality attributes.

Acknowledgements

I would like to thank Louis Nixon for the use of his time and resources in growing the transplants in the greenhouse and Adam Bunch for the use of his time, land, and inputs in growing the plants in the field. I would also like to thank Dr. Jonathan Schultheis for his guidance and instruction in putting this project together and Erin Eure for her time and efforts in planting, harvesting, and evaluating the trial. Lastly, I would like to thank the following companies for donating seed to this project: Sakata, Seedway, Seminis, Syngenta, Harris Moran, Clifton Seed Company, Nunhems, and Siegers Seed Company.

Table 2.0 Average Quality Ratings and Overall Yield Data From First Three Harvests

Cultivar	Avg. fruit weight	Avg. LD ¹	Avg. Rind thickness (cm) ²	Avg. Brix ³	Avg. Hollow Heart ⁴	Avg. Color Rating ⁵	Avg. Sd. Trace Size ⁶	yield/plot	yield/plant	total lb/acre	cwt/acre
Charismatic	19.4	1.0	1.7	12.1	1.0	3.0	2.8	10	2	84004.2	840.0
Cut Above	16.0	1.2	1.5	11.8	1.0	3.0	2.8	9	1.8	59315.1	593.2
Embassy	18.9	1.3	1.7	11.0	1.0	2.6	2.1	9	1.8	70767.6	707.7
Exclamation	17.7	1.2	1.9	10.2	1.0	2.5	3.0	5	1	33301.6	333.0
Fascination	18.6	1.2	1.8	11.7	1.0	3.3	2.3	7	1.4	53800.1	538.0
Kingman	17.3	1.2	1.6	11.3	1.3	3.0	2.9	8	1.6	57345.1	573.5
Premont	17.2	1.3	1.8	10.9	1.0	2.7	3.0	9	1.8	65474.3	654.7
Roadtrip	14.7	1.3	1.2	12.2	1.0	3.6	1.0	8	1.6	47550.1	475.5
SW1981	22.3	1.4	1.5	11.1	1.0	3.1	2.3	7	1.4	67535.8	675.4
SW2004	16.6	1.3	1.2	11.9	1.0	5.0	3.5	8	1.6	50922.9	509.2
Sweet Polly	17.5	1.2	1.6	10.9	1.0	2.6	2.6	9	1.8	66906.0	669.1
Tailgate	21.1	1.3	1.6	10.2	1.0	3.0	2.0	10	2	84307.1	843.1
Turnpike	17.1	1.1	1.5	12.3	1.0	3.3	4.0	7	1.4	49436.1	494.4
Walker ⁷	22.5	1.7	1.6	11.1	1.0	3.8	N/A	4	0.8	37355.9	373.6
Warrior ⁸	14.0	1.3	1.3	11.8	1.0	2.8	3.8	5	1	29364.3	293.6

¹LD = length to diameter ratio.

²Measured from rind to where white and colored flesh meet.

³Indicates sweetness. Measured using a manual refractometer.

⁴Rating: 1= no crack in flesh, 2 = slight crack in flesh, 3 = small crack in flesh, 4 = medium separation in flesh, 5 = complete separation in flesh to rind.

⁵Rating: 1 = light pink, 3 = red, 5 = deep red

⁶Rating: 1=small (i.e. tomato), 3=medium, 5=large. Only seed size rating was taken, not incidence or amount of seed.

⁷Reset three melons that were ready to harvest in week 6. These data are not included in the final yield.

⁸Reset five melons that were ready to harvest in week 6. These data are not included in the final yield.

Charismatic



Avg. fruit weight	19.4 lbs
Avg. L/D ratio	1.0
Avg. rind thickness	1.7 cm
Avg. brix	12.1

Yield/ plant: 2
cwt/ acre: 840.0

Cut Above



Avg. fruit weight	16.0 lbs
Avg. L/D ratio	1.2
Avg. rind thickness	1.5 cm
Avg. brix	11.8

Yield/ plant: 1.8
cwt/ acre: 593.2

Embassy



Avg. fruit weight	18.9 lbs
Avg. L/D ratio	1.3
Avg. rind thickness	1.7 cm
Avg. brix	11.0

Yield/ plant: 1.8
cwt/ acre: 707.7

Exclamation



Avg. fruit weight	17.7 lbs
Avg. L/D ratio	1.2
Avg. rind thickness	1.9 cm
Avg. brix	10.2

Yield/ plant: 1
cwt/ acre: 333.0

Fascination



Avg. fruit weight	18.6 lbs
Avg. L/D ratio	1.2
Avg. rind thickness	1.8 cm
Avg. brix	11.7

Yield/ plant: 1.4
cwt/ acre: 538.0

Kingman



Avg. fruit weight	17.3 lbs
Avg. L/D ratio	1.2
Avg. rind thickness	1.6 cm
Avg. brix	11.3

Yield/ plant: 1.6
cwt/ acre: 573.5

Premont



Avg. fruit weight	17.2 lbs
Avg. L/D ratio	1.3
Avg. rind thickness	1.8 cm
Avg. brix	10.9

Yield/ plant: 1.8
cwt/ acre: 654.7

Roadtrip



Avg. fruit weight	14.7 lbs
Avg. L/D ratio	1.3
Avg. rind thickness	1.2 cm
Avg. brix	12.2

Yield/ plant: 1.6
cwt/ acre: 475.5

SW 1981



Avg. fruit weight	22.3 lbs
Avg. L/D ratio	1.4
Avg. rind thickness	1.5 cm
Avg. brix	11.1

Yield/ plant: 1.4
cwt/ acre: 675.4

SW2004



Avg. fruit weight	16.6 lbs
Avg. L/D ratio	1.3
Avg. rind thickness	1.2 cm
Avg. brix	11.9

Yield/ plant: 1.6
cwt/ acre: 509.2

Sweet Polly



Average fruit weight	17.5 lbs
Avg. L/D ratio	1.2
Avg. rind thickness	1.6 cm
Avg. brix	10.9

Yield/ plant: 1.8
cwt/ acre: 669.1

Tailgate



Average fruit weight	21.1 lbs
Avg. L/D ratio	1.3
Avg. rind thickness	1.6 cm
Avg. brix	10.2

Yield/ plant: 2.0
cwt/ acre: 843.1

Turnpike



Avg. fruit weight	17.1 lbs
Avg. L/D ratio	1.1
Avg. rind thickness	1.5 cm
Avg. brix	12.3

Yield/ plant: 1.4
cwt/ acre: 494.4

Walker



Avg. fruit weight	22.5 lbs
Avg. L/D ratio	1.7
Avg. rind thickness	1.6 cm
Avg. brix	11.1

Yield/ plant: 0.8
cwt/ acre: 373.6

Warrior



Avg. fruit weight	14.0 lbs
L/D ratio	1.3
Avg. rind thickness	1.3 cm
Avg. brix	11.8

Yield/ plant: 1.0
cwt/ acre: 293.6