WATERMELON AND CANTALOUPE VARIETY TRIALS

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Introduction

Watermelon and cantaloupe are important crops in Georgia with values of almost $95 million and over $25 million, respectively (Boatright and McKissick, 2003). Variety trials are an important component of information for growers and seed companies to use in assessing new varieties. This is particularly important with watermelons as the industry has changed over the past few years with the greater use of seedless or triploid melons.

Materials and Methods

There were 32 watermelon entries and 6 cantaloupe entries in the trials this year. Seed of watermelon were sown in greenhouses at the Bamboo Farm and Coastal Garden in Savannah, GA on 11 April 2003 and cantaloupe seed were sown on 18 April 2003. Plants were grown in flats with 72 cell inserts using a peat based soilless mix. Care was taken to avoid overwatering triploid watermelon seed during the first 72 hours to insure a high germination rate. Plants were transported to the Vidalia Onion and Vegetable Research Center (VOVRC) in Lyons, GA and set out on 15 May 2003.

A smaller trial of just triploids was set out on 9 May 2003 at a Crisp County, GA on-farm location and harvested on 31 July 2003. This trial was planted as a randomized complete block design (RCBD) with 3 replications.

The watermelon trial at the VOVRC was laid out with 10 hills per plot with an in-row spacing of 5 feet and a between row spacing of 6 feet. The cantaloupe trial at the VOVRC was laid out with a 3 foot in-row spacing and a 6 foot between-row spacing. These trials were laid out as RCBD with 4 replications.

Fertilization and weed control followed University of Georgia (UGA) Extension Service recommendations. Neither fungicides nor insecticides were used.

Cantaloupe were harvested on 15-16 July 2003 and a final harvest was completed on 22 July 2003. Watermelon were also harvested on 15-16 July 2003 with a final harvest on 21 July 2003. Data on the cantaloupe trial included a weight and count of each plot. In addition, 2 cantaloupes were cut from each plot and the width, length, flesh diameter, and soluble solids were recorded. In the watermelon trial, melons were weighed individually so that that weight class data could be compiled. Two melons from each plot were also cut in the watermelon trial and length, width, rind depth, and soluble solids were recorded. In addition, the flesh color, melon type, and seedlessness were noted.

Data were analyzed and results reported for a Fisher's Protected LSD with a Bonferonni adjustment to make 5 specific comparisons at 0.05 probability. In addition, a coefficient of variation was calculated for each analysis.

Results and Discussion

Results of the cantaloupe trial are listed in table 1. There were no yield differences between varieties either by weight or number of fruit. The Type column lists the descriptor from the seed company. In addition, there were no soluble solids differences. Cantaloupe production in Georgia continues to be dominated by Athena and similar varieties.

Table 2 lists the yield results for the watermelon trial. The Description column is the seed company's descriptor that was listed on the seed packet. Yields ranged from 19,511 to 55,431 pounds per acre. Variety 8282's low yields were primarily due to low germination and therefore caution should be used in assessing this variety. Fourteen of the entries were triploids, which continues a trend in Georgia watermelon production. This year according to The Packer over 60% of the watermelons sold from Georgia were triploids. This has resulted in the watermelon crop in Georgia almost doubling in value since 1999.

There were only 6 varieties that had any melons in the over 30 pound class. Most of the melons were in the 10-20 pound class. The highest yielding variety was WD-02-25 from D. Palmer Seed Co., but this variety did not differ significantly from 27 of the varieties tested. The CV of 26% is quite good for a watermelon trial and suggests that the yield data is reasonably reliable.

Table 3 lists the fruit characteristics of each of the entries. Three of the entries in this trial were yellow fleshed varieties. Butterball, a triploid variety, was the highest yielding yellow, which was closely followed by Gold Strike. The third variety, Sunny a seedless type had the lowest yield among the yellow varieties.

Table 1. Cantaloupe Variety Trial, 2003
Vidalia Onion & Vegetable Research Center, Lyons, GA

Entry	Company	Type	Yield (lbs/acre)	Yield (No./acre)	Length (in.)	Width (in.)	Flesh Depth (in.)	Soluble Solids (%)
SVR-1022	Seminis		38,345	3,449	9.6	8.2	2.1	7.4
ESC-02-08	D. Palmer Seed	NJ, MD, Biotype	26,275	3,812	9.2	7.3	1.9	6.9
Athena	Rogers	Athena	25,634	3,933	8.4	6.8	1.8	7.1
RML 8793-VP	Rogers		24,079	2,844	9.1	7.3	1.9	7.8
ESC-02-07	D. Palmer Seed	Eastern Shipper (Athena)	23,541	3,691	8.8	6.9	1.7	6.2
ESC-02-09	D. Palmer Seed	Eastern Shipper	19,729	3,812	7.5	6.3	1.5	6.6
		CV	39%	21%				20%
		Fisher's Protected & Adjusted LSD ($p \leq 0.05$)	NS	NS				NS

Table 2. Watermelon Variety Trial Yield Results, 2003
Vidalia Onion & Vegetable Research Center, Lyons, GA

Entry	Company	Description	Yield (lbs./acre)	Melons per weight class (%) ≤10 lbs	>10 - ≤20 lbs	>20 - ≤30 lbs	>30 lbs
WD-02-25	D. Palmer Seed	Allsweet Smoke (2N)	55,431	17	73	10	0
WX-255	Wilhite	Hybrid	54,712	11	86	3	0
Butterball	D. Palmer Seed	Triploid	53,780	28	72	0	0
Gold Strike	Wilhite	Hybrid	52,622	7	81	11	1
WD-02-29	D. Palmer Seed	Diploid	51,911	7	84	8	0
Plantation Pride	D. Palmer Seed	Blocky Calsweet Type (2N)	48,407	11	67	21	1
FSW 9130	Florida Seed		48,137	4	52	42	1
WX-261	Wilhite	Hybrid	48,098	14	70	16	0
WD-02-28	D. Palmer Seed	2N	47,165	14	62	23	1
SSW 9140	Florida Seed		46,867	4	59	37	0
WX-207	Wilhite	Hybrid	46,292	23	61	17	0
SSW 9150	Florida Seed		45,172	21	71	8	0
Compodre	D. Palmer Seed	2N Watermelon	44,979	19	61	19	1
Sweet Slice	Wilhite	Hybrid Triploid	44,515	24	72	3	0
PX 11052889	Seminis	Triploid Larger Tri X	43,316	26	72	2	0
WX-262	Wilhite	Hybrid	42,033	20	60	20	0
SSW 9905	Florida Seed		41,763	32	68	0	0
XP 4510759	Seminis	Triploid	40,166	37	63	0	0
Cooperstown	Seminis	Triploid	39,709	17	80	4	0
Sweet Eat'n	D. Palmer Seed	313 Type (3N)	39,683	31	69	0	0
WX-266	Wilhite	Hybrid	39,604	12	68	21	0
WD-02-23	D. Palmer Seed	2N	38,667	8	76	15	2
WX-28	Wilhite	Hybrid Triploid	38,021	18	55	26	0

Table 2. Cont'd.

			Yield	Melons per weight class (%)			

Entry	Company	Description	(lbs./acre)	≤10 lbs	>10 - ≤20 lbs	>20 - ≤30 lbs	>30 lbs
Genesis F_1	Shamrock	Hybrid	37,713	46	54	0	0
ChaChaCha F_1	Shamrock	Hybrid	36,688	25	72	2	0
Sunny	Wilhite	Triploid	36,483	10	83	7	0
Ole'	Wilhite	Hybrid	36,373	27	59	14	0
Afternoon Delight	D. Palmer Seed	Triploid	35,191	20	78	3	0
Olympia (5031)	Seminis	Triploid	34,104	25	69	6	0
WT-02-26	D. Palmer Seed	Triploid	32,329	25	71	4	0
PX80309020	Seminis	Triploid	28,325	35	62	3	0
8282	Seminis	Triploid	19,511	28	39	33	0
		CV	26%				
		Fisher's Protected & Adjusted LSD (p≤0.05)	20,141				

Table 3. Watermelon Variety Trial Fruit Characteristics, 2003
Vidalia Onion & Vegetable Research Center, Lyons, GA

Entry	Flesh Color	Fruit Length (in.)	Width (in.)	Rind Thickness (in.)	Soluble Solids	Fruit Type
Sunny	Yellow	12.7	8.0	0.9	11.1	Allsweet, seedless
ChaChaCha F,	Red	11.1	8.4	0.7	10.9	Crimson Sweet, seedless
PX80309020	Red	11.1	7.9	0.9	10.6	Blocky Crimson Sweet
SSW 9905	Red	10.8	8.4	0.7	10.6	Crimson Sweet, seedless
Olympia (5031)	Red	11.8	8.8	0.9	10.6	Blocky Crimson Sweet, seedless
WD-02-25	Red	16.3	8.1	0.8	10.5	Jubilee
XP 4510759	Red	10.9	8.2	1.0	10.5	Blocky Crimson Sweet, seedless
Ole'	Red	15.1	8.4	0.9	10.5	Allsweet
Gold Strike	Yellow	13.7	8.5	0.8	10.4	Jubilee, Allsweet
Cooperstown	Red	11.1	8.2	0.7	10.3	Blocky Crimson Sweet, seedless
Sweet Slice	Red	11.6	8.6	1.0	10.3	Crimson Sweet, seedless
WX-207	Red	16.1	8.2	0.8	10.1	Jubilee
SSW 9140	Red	13.9	9.1	0.8	10.1	Blocky Jubilee
WT-02-26	Red	11.9	8.6	0.9	10.0	Crimson Sweet, seedless
Compodre	Red	11.3	9.7	0.8	10.0	Crimson Sweet
Genesis F_1	Red	9.3	8.5	0.7	10.0	Crimson Sweet, seedless
Sweet Eat'n	Red	11.1	8.1	0.8	9.8	Blocky Crimson Swt., seedless
WX-266	Red	16.8	7.8	0.6	9.7	Allsweet
Afternoon Delight	Red	10.2	8.8	0.9	9.7	Crimson Sweet, seedless
FSW 9130	Red	16.6	8.1	0.9	9.7	Allsweet
SSW 9150	Red	14.2	7.7	0.7	9.7	Allsweet, light colored seed

Table 3. Cont'd.

		Fruit		Rind		

Entry	Flesh Color	Length (in.)	Width (in.)	Thickness (in.)	Soluble Solids	Fruit Type
Plantation Pride	Red	15.3	8.2	1.0	9.4	Allsweet
WD-02-23	Red	15.5	8.9	0.9	9.3	Jubilee
Butterball	Yellow	9.1	8.8	1.4	9.3	Crimson Sweet, Seedless
WX-262	Red	16.4	7.7	0.7	9.3	Allsweet
WD-02-28	Red	12.1	10.0	0.8	9.2	Dark Crimson Sweet
WX-28	Red	17.0	8.4	0.8	8.9	Allsweet, Jubilee, seedless
WD-02-29	Red	11.9	8.7	0.8	8.9	Blocky Crimson Sweet
8282	Red	16.7	8.0	0.7	8.8	Jubilee, seedless
WX-261	Red	16.9	7.7	0.8	8.6	Allsweet
				CV	9%	
				Fisher's Protected & Adjusted LSD ($p \leq 0.05$)	1.6	