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WATERMELON EVALUATIONS - 1990

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INTRODUCTION

Texas is one of the major producers of watermelons in the United States. East Texas produces approximately one-third of the state's watermelons consisting mostly of hybrids (Fuller and Hall, 1991). In recent years, there has been a growing interest in the triploid or seedless types.

In a cooperative effort between the Texas Agricultural Experiment Station and the Texas Agricultural Extension Service, a watermelon evaluation trial consisting of 9 seedless varieties and 9 hybrids was established in Nacogdoches, Texas on the George Millard farm in the spring of 1990.

METHODS AND MATERIALS

All watermelon varieties were seeded in the greenhouse on 12 March 1990. Poultry litter at the rate of 6 tons per acre was broadcast applied and rototilled in the field site prior to planting on 3 April. The area was bedded on 6.6 ft. centers and each bed covered with photo-degradable plastic mulch 60 in. wide and 1.5 mil thick. Separate plots for the seedless and hybrid varieties were established. A randomized complete block design with 3 reps was used. Nine transplants of the seedless varieties were hand planted on 19 April on 2 ft. spacing. 'Royal Jubilee' was used as a pollinator and planted as guards at the ends of the block as well as in each 5 ft. alley between plots. Ten plants of the hybrid varieties were spaced 3 ft. apart in each row. No herbicides or insecticides were used in the trial. Irrigation was by drip. Data were obtained on percent seed germination (seedless only) in the greenhouse, and yield per acre, number of fruit per acre, mean marketable fruit weight, and percent soluble solids concentration from a once-over harvest on 5 July.

RESULTS AND DISCUSSION

Seedless

No significant differences were found for marketable yield, or number of fruit from the seedless varieties (Table 1). SSupersweet 5032 produced the highest yield with 30,805 lbs/ac. King Of Hearts, SSupersweet 3731, and Jack Of Hearts produced

the greatest number of fruit with 4,628 per ac. SSupersweet 5244 produced the highest fruit weight of 8.9 lbs when compared to all other varieties. Tiffany had the highest soluble solids concentration of 11.4%. Germination percent was variable between varieties with a low of 25% and high of 90%.

Hybrids

No statistical differences were found between varieties as far as number of fruit, average fruit weight or soluble solids concentration (Table 2). This can probably be attributed to the loss of 1 of 3 reps. Variety ACX 1366 did produce significantly higher marketable yields. This variety was also the number one producer of marketable number of fruit, third in average marketable weight, and second in percent soluble solids. Other varieties which looked promising as far as marketable yields and fruit numbers were Mirage, ACX 6029, and ACX 1363.

CONCLUSIONS

Several of the seedless varieties looked promising for production in East Texas. With further research in the areas of variety testing, cultural practices, seed germination, and marketing, this could become a major crop in this area.

The majority of hybrids evaluated showed exceptional production potential. With further varietal evaluations coupled with new cultural practices and production methods, the East Texas area could garner a larger percent of the overall watermelon production in the state.

LITERATURE CITED

1. Fuller, S., and C. Hall. 1991. Economic trends of the melon industry in Texas and the United States: cantaloupe, honeydew, and watermelon. AgAbstracts Vol. 3, No. 1. MP-1702 TAEX.

Table 1. Marketable yield, fruit number, average fruit weight, % soluble solids, and % seed germination of 9 triploid (seedless) watermelon varieties evaluated at Nacogdoches, Texas - 1990.

Variety	Seed ^z source	Yield per acre (lbs)	Fruit No. per acre	Average fruit wt (lbs)	Soluble solids conc. (%)	Germination (%)
SSupersweet 5032	1	30805	4084	8.0	10.1	25
SSupersweet 5244	1	26783	3812	8.9	10.5	90
SSupersweet 5344	1	26039	4084	8.1	9.9	76
King Of Hearts	3	24778	4628	8.0	9.1	95
SSupersweet 3731	1	23165	4628	6.8	10.7	43
SSupersweet 4073	1	19093	4356	7.8	9.7	81
Jack Of Hearts	3	17577	4628	6.3	10.1	83
Queen Of Hearts	3	16494	3539	7.2	10.7	89
Tiffany	2	13909	4220	7.3	11.4	43
LSD .05		NS	NS	1.9	1.1	-

^z 1 - Abbott & Cobb
 2 - Asgrow
 3 - Peto Seed

Table 2. Marketable yield, fruit number, average fruit weight, and % soluble solids of 9 hybrid watermelon varieties evaluated at Nacogdoches, Texas - 1990.

Variety	Seed ^z source	Yield per acre (lbs)	Fruit No. per acre	Average fruit wt (lbs)	Soluble solids conc. (%)
ACX 1366	1	47518	6534	13.7	11.6
Mirage	2	45510	4084	14.8	8.7
ACX 6029	1	34398	4288	12.6	6.1
ACX 1363	1	33439	4492	12.7	9.8
Summer Flavor 610	1	24214	2859	14.3	11.7
Summer Flavor 600	1	23538	5922	9.5	9.6
Royal Jubilee	3	20715	3471	12.0	9.3
ACX 6019	1	18478	2654	14.4	10.8
Summer Flavor 200	1	13939	3471	12.4	10.1
LSD .05		31772	NS	NS	NS

^z1 - Abbott & Cobb

2 - Asgrow

3 - Peto Seed