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CANTALOUPE VARIETY TRIALS ON PLASTICULTURE AND DRIP IRRIGATION SYSTEMS FOR EAST TEXAS - 1997

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Background. East Texas plots have been established using randomized design with three or four replications and up to 18 varieties/lines of cantaloupe during the spring of 1991, 1992, 1993, 1994, 1995, 1996 and 1997. The experiment failed in 1995 due to weather conditions. The tests were repeated each year with selected varieties/lines and a few controls to provide harvest data information on the best varieties for local growing conditions. Texas is third in the United States in cantaloupe production which also accounts for nine percent of the state's total retail fresh fruit volume at mid-summer. Peak months are June, July, and August. Planting begins in February and March in South Texas and from March to June in the northern two-thirds of the state. Harvest begins in early May in South Texas with the bulk in late May and June. Harvest in the northern two-thirds of the state begins the last half of June and continues into late September. Historically, East Texas has not been a major cantaloupe producing area. Production has been limited to home gardens or small plots for local sales. Recently, there has been increased interest in larger scale production for direct sales through farmer markets and grocery chain sales. To evaluate adaptability of newer cantaloupe varieties to East Texas growing conditions, yearly studies are initiated by the Texas Agricultural Research and Extension Center at Overton as part of the statewide trials.

Sixteen cantaloupe varieties/lines were evaluated during the spring of 1997 for East Texas growing conditions. The greenhouse grown transplants were planted in a randomized complete block design with three replications on eight feet centered black plastic mulch covered raised beds with two feet in row spacing on 8 May 1997. Drip irrigation was supplied under the plastic as needed. Fertilization was 600 lbs 13-13-13/ac banded 23 April 1997. Multiple harvest occurred on July 8, 10, 14, 16, and 18 July 1996. Additional N was applied at a rate of 60 lbs/ac as calcium nitrate (CaNO_3) in split applications of 30 lbs each through the drip system. The first application was at first bloom and the second at the fruit enlargement stage.

Data were obtained on total marketable yield per acre, percent of marketable yield within six grades, which represent the number of melons it takes to fill a 42-lb box, and soluble solids concentration (represents sugar).

Research Findings. Several varieties tested showed yields exceeding 35,000 lbs/ac with the top yielders 'Impac' (XPH 6299) producing 46,788 lbs/ac; 'Archer' producing 37,842 lbs/ac; and 'Valley Pac' (XPH 6300) producing 37,364 lbs/ac. 'Valley Pac' had the greatest percentage of 9's

with 83.6% followed by 'Impac' with 63.9%. 'Gold Eagle' had the greatest percentage of 12's with 62.1% followed by 'CF-8'. A number of cantaloupe varieties/lines evaluated during 1997 showed promise for production in East Texas. These included 'Ranger', 'HMX3951', 'Caravelle', 'F-201', 'CF-599', 'RML 1316', and 'TXC 1053'. Plasticulture technology and drip irrigation eliminates the risk of inadequate rainfall and raised beds with plastic mulch eliminates problems associated with diseases and lack of quality during too much rainfall.

Applications. Information from these studies can be used to inform growers of the production potential of newer varieties.

Acknowledgment. The authors would like to thank the seed companies participating in the 1997 spring trials and listed with experiment findings (1997 Cantaloupe Variety Trials Table).

1997 TAEX Statewide Cantaloupe Trial Results, Overton, TX

Entry	Seed Sou.	Mktbl yld (boxes/A)	% Total marketable yield / size grade					
			9's	12's	15's	18's	23's	30's
Impac (XPH 6299)	1	1,114	63.9	10.6	22.6	2.9	0.0	0.0
Archer	3	901	2.5	36.2	35.9	18.3	3.6	3.5
Valley Pac (XPH6300)	1	892	83.6	7.9	6.8	1.7	0.0	0.0
Ranger	5	848	12.3	47.3	32.6	6.0	1.8	0.0
CF-8	2	825	5.8	55.4	34.5	2.9	1.4	0.0
HMX 3951	3	777	31.0	37.6	15.8	4.2	8.4	0.0
Caravelle	1	771	2.4	59.4	23.1	6.5	4.6	4.0
Gold Eagle	3	758	5.7	62.1	27.4	4.8	0.0	0.0
F-201	2	719	19.1	36.5	28.2	6.1	8.7	1.4
CF-559	2	664	6.8	45.7	30.5	10.9	6.1	0.0
RML 1316	4	615	11.5	47.3	28.2	6.6	3.2	3.2
TXC 1053	6	566	14.4	25.9	45.3	9.4	5.0	0.0
Acclaim	4	634	0.0	24.8	42.5	15.2	15.4	2.1
TXC 2015	6	502	37.1	35.4	15.1	3.5	0.0	8.9
XPH 6309	1	465	5.6	58.0	28.1	8.3	0.0	0.0
TXC 2040	6	376	0.0	4.0	19.9	56.1	20.0	0.0
LSD (P=0.05)		302	24.2	29.0	26.7	20.5	NS	NS

Box weight = 42 lbs

Seed Sources:

- 1 = Asgrow
- 2 = CDM Fast Track
- 3 = Harris Moran
- 4 = Rogers Sandoz
- 5 = Shamrock
- 6 = Texas Agric. Exp. Sta.

Established: May 8, 1997 **Harvested:** July 8, 10, 14, 16, 18, 1997
Establishment: Transplanted on raised beds 8' wide with 2' in-row spacing
Irrigation: Drip as needed
Fertilization: 600 lbs/A 13-13-13 banded applied April 23, 1997
Plot design: Randomized complete block with 3 replications