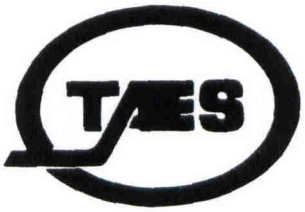

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TECHNICAL REPORT NO. 85-1

THE TEXAS AGRICULTURAL EXPERIMENT STATION / Neville P. Clarke, Director / The Texas A&M University System / College Station, Texas

SOUTHERN TOMATO EXCHANGE PROGRAM (STEP) TRIALS - 1984

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The STEP trials for 1984 were divided into replicated and observational.

Replicated: The replicated trials were composed of 6 entries. Floradade was used as the determinate check. The entries were started in 2" plastic seed band units filled with a pre-mix consisting of 76% Sogevex peat, 12% vermiculite, 12% perlite, pH adjusted, starter nutrients, and a wetting agent on 23 February 1984.

The field plots were bedded on 52" centers. Fertilizer was applied beneath the row at the rate of 800 lbs 12-12-12 per acre. The plots were then shaped and firmed. On 1 May 1984 the plants were transplanted in the field by hand. The plot was a randomized complete block with 3 replications. Each plot was 20 ft. long with 3 ft. between plots. The plants were spaced 3 ft. apart with 6 plants per plot.

Observational: Thirteen entries were included in the observational test. Floradade was used as the determinate check, and Floradel as the indeterminate. They were grown and transplanted the same as the replicated. The design was a randomized block with 2 replications.

Sencor at the recommended rate was used for weed control. The plants were sprayed weekly with Orthene 75 WP for insect control and Manzate for disease control.

RESULTS

The plots were harvested on 9, 16, 24 July 1984. Data was obtained for both replicated and observational trials on yield, growth habit, earliness, fruit size, fruit appearance, fruit shape, internal quality, and disease. In this report only yield and fruit size will be reported.

Replicated:

There was no significant difference in yield for Floradade, 667, 668, and 674. However, 668 produced almost twice as much per acre

than the check Floradade (Table 1). STEP 676 showed very poor production. After 3 harvest periods STEP entry 676 produced larger fruit on the average than the other entries but was not significantly higher than 674, 667, or Floradade. STEP 668 produced the smallest fruit.

Observational:

Even though no significant difference was found between the determinate type breeding line/cultivar, breeding line 677 produced excellent yields (Table 2). Line 680, 684, and 685 produced lower yields than the check. All other lines were close to the check Floradade in production. There was no significant difference in fruit size. Line 685 produced the smallest fruit (Table 2) while 673 and 675 produced the largest fruit. All others were comparable to the check variety.

There was no significant difference in yield or fruit size between the indeterminate type breeding line/cultivar (Table 3). Line 679 produced slightly more and larger size fruit per acre than the check variety Floradel.

TABLE 1. Marketable yield and fruit size of STEP replicated trials for fresh market tomatoes 1984.

Breeding line/ cultivar	Marketable yield cwt/acre	Fruit size (oz/fruit) First	Mid	Last	Avg.
Floradade	56	4.5	5.1	5.7	5.1
667	92	4.1	4.1	5.5	4.6
668	104	4.6	4.1	3.6	4.1
674	71	4.4	5.0	5.5	5.0
676	18	5.8	4.9	6.0	6.0
678	49	3.6	3.7	6.0	4.4
L.S.D. .05	53				1.9

TABLE 2. Yield and fruit size of STEP determinate type observational trials for fresh market tomatoes 1984.

Breeding line/ cultivar	Marketable yield cwt/acre	Fruit size oz/fruit
Floradade	54	6.2
673	42	6.5
675	61	6.6
677	128	4.5
680	16	4.6
681	56	6.2
682	44	6.1
683	59	6.1
684	21	4.5
685	24	2.6
686	40	5.6
L.S.D. .05	21	N.S.

TABLE 3. Yield and fruit size of STEP indeterminate type observational trials for fresh market tomatoes 1984.

Breeding line/ cultivar	Marketable yield cwt/acre	Fruit size oz/fruit
Floradel	35	4.2
679	40	5.5
L.S.D.	N.S.	N.S.