

## Evaluation of tomato genotypes for yield potential

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Received: July 2015 / Accepted: January 2016

### Abstract

The present investigation was undertaken to evaluate  $F_5$  and  $F_6$  generations of tomato genotypes for yield potential during spring-summer 2009/10 and 2010/11. Crop yield is the most paramount aim in any crop production which is influenced among many factors by the type of tomato genotypes selected for production. Tomato genotypes of  $F_5$  and  $F_6$  generations of two crosses (M-3-1 x H-24 and 87-2 x 18-1-1) and two standard checks ('Bhagyashree' and 'Dhanashree') were evaluated. Plant height was highest, 92.67 and 81.4 cm in  $T_{27}$  (cross 87-2 x 18-1-1) in  $F_5$  and  $F_6$  generations respectively; number of branches per plant, 6.2 ( $T_6$ , cross M-3-1 x H-24) in  $F_5$  and 5.33 ( $T_{32}$ , cross 87-2 x 18-1-1) in  $F_6$ ; days to first harvesting ranged from 66 ( $T_9$ , cross M-3-1 x H-24) to 75.33 days in  $F_5$  and 71.33 to 80 days in  $F_6$ ; harvest duration, 62.67 to 69 days in  $F_5$  and 52 to 70 days in  $F_6$ . Significant differences were observed in all yield and yield contributing characters in both generations. Maximum number of fruits per plant was 45.3 ( $T_8$ , cross M-3-1 x H-24) in  $F_5$  and 50.13 ( $T_{25}$ ) in  $F_6$ ; average fruit weight, 74.55 and 77.24 g ( $T_{29}$ , cross 87-2 x 18-1-1) in  $F_5$  and  $F_6$  progeny generations, respectively; fruit yield per plant, 1.94 kg ( $T_{26}$ , cross 87-2 x 18-1-1) in  $F_5$  and 1.94 kg ( $T_8$  and  $T_{25}$ ) in  $F_6$  generation; yield, 56.56 t/ha ( $T_{26}$ ) in  $F_5$  and 57.35 t/ha ( $T_{25}$ ) in  $F_6$  generation. Per cent mean disease incidence of tomato leaf curl virus was 2.26 in  $F_5$  and 2.4 per cent in  $F_6$  progenies.

**Keywords:** generation, leaf curl virus, progenies, yield contributing characters

### Introduction

Tomato (*Solanum lycopersicum* L.) is one of the most popular and widely grown vegetables in the world ranking second in importance after potato in many countries (Tiwari *et al.* 2002; Kumar *et al.* 2007). In India it ranks third after potato and sweet potato (Sharma *et al.* 2008). Tomato is commonly referred as 'poor man's orange' in

India and has wider coverage in comparison to other vegetables. It is grown in small home gardens and open fields for both fresh consumption and for processing into several products such as paste, puree, ketchup, sauce or juice. In India, tomato has been identified as a potential vegetable for export (Anon. 2011). The production and productivity of tomato in India is far low as compared to the global scenario. One of the most limiting factors to tomato production is the tomato leaf curl virus. The severe disease reach to an epidemic leaf curl caused by Indian tomato leaf curl virus is one of the serious diseases in Indian sub-continent and many other Asian Countries (Green and Kalloo 1994). Kshirsagar (2009) observed that the per cent disease incidence in segregating population in both the crosses (M-3-1 x 18-1-1) and (M-3-1 and H-36) for  $F_3$  and  $F_4$  generation was very less so that they were found highly resistant to leaf curl virus. Patil (2010) noted that the percent disease incidence of leaf curl virus in crosses M-3-1 x H-24 and 87-2 x 18-1-1 was 1.54 and 2.22 per cent in  $F_3$  and 3.19 and 2.81 per cent in  $F_4$  progenies, respectively. The control of disease through application of chemicals is ineffective. Hence, there is need to select superior cultivars among the existing genotypes resistant to leaf curl virus disease with high yield potential.

### Materials and Methods

The investigation was conducted in the All India Coordinated Research Project on Vegetable Crops, Department of Horticulture at the Mahatma Phule Krishi Vidyapeeth, Rahuri, during spring-summer season of 2009/10 and 2010/11.

**Experimental material:** The seeds of tomato genotypes of  $F_4$  generation of crosses M-3-1 x H-24 (19 progenies) and 87-2 x 18-1-1 (11 progenies) were obtained from All India Coordinated Research Project on Vegetable Crops, Mahatma Phule Krishi Vidyapeeth, Rahuri. Standard checks 'Bhagyashree' and 'Dhanashree' were obtained from Tomato Improvement Scheme, Mahatma Phule Krishi Vidyapeeth, Rahuri.  $F_4$  progenies from the

cross 87-2 x 18-1-1 and M-3-1 x H-24 were selected on the basis of yield per plant and per cent disease incidence of leaf curl virus.

**Experimental design:** All the genotypes of  $F_5$  and  $F_6$  generations were laid out and evaluated in randomized block design with three replications. The experimental data was analyzed following procedures of Gomez and Gomez (1984); Panse and Sukhatme (1985).

**Methods:** The plot size was 11.88 m<sup>2</sup> (3.6 m x 3.3 m) and 4.86 m<sup>2</sup> (1.8 m x 2.7 m) gross and net plot size, respectively. Each plot comprised four rows and a total of 44 plants in each plot with a spacing of 0.9 m X 0.3 m. Ridges were opened at 90 cm apart. Plots were laid out and seedlings were transplanted in to the main field at 30 cm distance on one side of ridges on 08, December, 2009, one month after seedling emergence. Fertilizer was applied at the rate of 200, 100 and 100 kg NPK/ha of Urea (as source of N), Phosphorus (P) and Potassium (K), respectively. Full dose of farm yard manure, P, K and half dose of N were applied before transplanting and remaining half dose of N were applied in three equal split doses at 20, 40, and 60 days after transplanting as a top dressing. Other cultural practices such as irrigation, weeding, staking, tying, and earthing up were carried out as per the requirement of the crop. But no any pesticides applied to control diseases and insect pests in both the years. In 2010/11 cropping season, tomato seeds of  $F_5$  generations were sown on 01, November 2010 on nursery beds and 3 weeks old seedlings (on 1<sup>st</sup> December, 2010) were transplanted to the field. The plot size, spacing and method of planting, fertilizers application and other operations followed the previous year practices.

**Data collection:** Data was collected on plant height, number of primary branches, days to first harvesting, harvest duration, number of fruits per plant, average fruit weight (g) and fruit yield per plant (kg) from two central rows of five randomly selected plants and the mean value was computed. Yield (t per ha) was taken from all plants of two central rows at each successive harvesting period. The disease incidence was taken 120 days after transplanting on the basis of visual observation of on individual plant.

## Result and discussion

**Plant height:** Data presented in Table 1 showed that plant height was significantly highest (92.67 and 81.43 cm) in  $T_{27}$  cross of 87-2 x 18-1-1 in both  $F_5$  and  $F_6$  generations, respectively. The lowest plant height (58.2 and 58.47 cm) was recorded in  $T_{18}$  and  $T_{11}$  of cross M-3-1 x H-24 in  $F_5$  generation. Whereas in  $F_6$  generation derived from the same cross,  $T_{11}$  had the lowest plant

height (57.6 cm). The average plant height were 69.13 and 69.14 cm in  $F_5$  and  $F_6$  generations, respectively.

**Number of branches per plant:** The number of primary branches per plant varied significantly (Table 1). The highest number of branches was observed in  $T_6$  of cross M-3-1 x H-24 (6.2) and in  $T_{322}$  of cross 87-2 x 18-1-1 (5.33) in  $F_5$  and  $F_6$  generations, respectively. The least number of branches observed were 3.8 ( $T_{28}$ ) and 3.67 ( $T_{12}$ ), of crosses 87-2 x 18-1-1 and M-3-1 x H-24 in  $F_5$  and  $F_6$  generations, respectively.

**Days to first harvesting:** The days to first harvesting significantly varied from 71 to 75.33 and from 71.33 to 80 days in  $F_5$  and  $F_6$  generations respectively (Table 1). The average days to first harvesting was 72.98 and 75.41 days in  $F_5$  and  $F_6$  generations, respectively. The two standard checks had 75.33 and 80 days for first harvesting in the first and second trial, respectively.

**Harvest duration (days):** The data in Table 1 on harvest duration indicated that the tomato fruit harvesting duration in  $F_5$  generation varied significantly from 62.67 (cross M-3-1 x H-24) to 69 days (in both generations) with 65.35 days average harvest duration. In  $F_6$  generations it showed significant variation, from 52 ( $T_6$ , cross of M-3-1 x H-24) to 70 days (cross 87-2 x 18-1-1 and two standard checks) with average 64.71 days harvest duration. The results of this finding are in line with the works done by Prasanna *et al.* (2007), Ibitoye *et al.* (2009), Hossain *et al.* (2010), Patil (2010), Shashikanth *et al.* (2010) who have studied on various growth parameters of tomato plant. The variation observed was brought by differences in genotypes and its interaction with the environment.

**Yield and yield contributing characters:** Yield is one of the most important characters for any crop selection. Yield contributing characters such as number of fruits per plant, fruit yield per plant and average fruit weight were worked out and presented in Table 2. The number of fruits per plant is an important character that contributes to the ultimate productivity of tomato plant. In this investigation the number of fruits per plant significantly ranged from 29.17 ( $T_{28}$ , cross 87-2 x 18-1-1) to 45.3 ( $T_8$ , cross M-3-1 x H-24) in  $F_5$  generation and 28.13 ( $T_9$ , cross M-3-1 x H-24) to 50.13 ( $T_{25}$ , cross 87-2 x 18-1-1) in  $F_6$  generation (Table 2). The mean fruit numbers per plant were 37.27 and 40.35 in  $F_5$  and  $F_6$  generations, respectively. Fruit weight is an important yield contributing character in tomato. Average fruit weight varied significantly from 26.12 g ( $T_9$ , cross M-3-1 x H-24) to 74.55 g ( $T_{29}$ , cross 87-2 x 18-1-1) in  $F_5$  and 28.27 g ( $T_6$ ) and 77.24 g ( $T_{29}$ ) in  $F_6$  generations. The mean fruit weight was 45.79 and 49.46 g in  $F_5$  and  $F_6$  generations, respectively (Table 2).

**Table 1:** Morphological characters of tomato

Treatment (T)*	Plant height (cm)		Number of branches per plant		Days to first harvesting		Harvest duration (days)	
	F <sub>5</sub>	F <sub>6</sub>	F <sub>5</sub>	F <sub>6</sub>	F <sub>5</sub>	F <sub>6</sub>	F <sub>5</sub>	F <sub>6</sub>
T1	71.47	68.63	4.47	4.07	73.00	71.33	65.00	65.67
T2	68.13	67.47	5.33	4.33	75.33	73.00	62.67	59.00
T3	70.53	68.13	5.40	4.43	73.00	71.33	65.00	59.00
T4	64.93	66.00	5.40	4.60	72.00	71.33	66.00	62.33
T5	78.97	72.07	4.93	4.33	75.33	80.00	62.67	52.00
T6	68.80	68.27	6.20	4.90	75.33	80.00	62.67	68.33
T7	69.13	64.13	4.73	4.27	73.00	71.33	65.00	59.00
T8	65.40	68.67	4.93	4.47	74.00	77.67	64.00	68.33
T9	67.73	62.99	4.47	4.53	66.00	71.33	69.00	65.67
T10	61.93	61.20	5.00	4.10	67.67	71.33	69.00	65.67
T11	58.47	57.60	4.80	4.60	71.00	73.00	67.00	65.67
T12	63.00	65.33	4.53	3.67	71.00	71.33	64.00	65.67
T13	66.20	67.47	5.67	4.33	71.00	73.00	64.00	65.67
T14	58.87	59.60	4.73	4.53	71.00	73.00	64.00	65.67
T15	70.93	68.73	5.33	4.53	71.00	73.00	67.00	65.67
T16	63.20	61.77	4.60	4.37	72.00	73.00	66.00	62.33
T17	69.33	66.47	4.67	4.53	72.00	73.00	66.00	62.33
T18	58.20	61.87	4.33	4.27	71.00	71.33	67.00	59.00
T19	66.00	67.33	5.47	5.20	75.33	77.67	62.67	55.33
T20	85.67	80.43	4.87	4.57	75.33	80.00	64.67	70.00
T21	75.53	73.93	6.00	4.93	75.33	80.00	64.67	70.00
T22	72.33	73.20	5.00	5.10	71.00	71.33	66.00	65.00
T23	78.60	76.93	5.93	5.10	75.33	77.67	64.67	61.33
T24	61.33	61.50	4.80	4.60	71.00	77.67	69.00	61.33
T25	68.27	69.80	5.20	4.93	73.33	77.67	66.67	67.00
T26	77.00	74.73	5.33	5.03	75.33	80.00	64.67	69.00
T27	92.67	81.43	4.93	5.20	75.33	80.00	64.67	70.00
T28	72.67	71.80	3.80	3.93	75.33	80.00	64.67	70.00
T29	65.93	67.00	5.07	4.53	75.33	80.00	64.67	70.00
T30	61.33	63.07	5.73	4.93	75.33	76.00	64.67	67.33
T31	69.07	72.93	4.80	4.20	72.00	76.00	69.00	67.33
T32	70.47	70.00	5.47	5.33	75.33	80.00	64.67	70.00
General mean	69.13	69.14	5.06	4.58	72.98	75.41	65.35	64.71
S.E±(mean)	1.29	2.66	0.28	0.20	0.81	1.40	0.81	2.12
C.D. at 5%	3.63	7.51	0.78	0.56	2.30	3.95	2.30	6.00

\*T<sub>1</sub> to T<sub>19</sub>, cross of M-3-1 x H-24 progenies; T<sub>20</sub>, Bhagyashree; T<sub>21</sub>, Dhanashree; T<sub>22</sub> to T<sub>32</sub>, cross of 87-2 x 18-1-1 progenies.

Fruit yield per plant is an important attribute contributing towards yield potential of tomato. There was significant difference among the progenies for fruit yield per plant (Table 2). In F<sub>5</sub> generation, maximum fruit yield per plant was observed in T<sub>26</sub>, cross of 87-2 x 18-1-1 (1.94 kg) which was at par with T<sub>25</sub> (1.92 kg) and the minimum was observed in T<sub>14</sub>, of cross M-3-1 x H-24 (1.05 kg) which was at par with T<sub>29</sub> (1.06 kg). In F<sub>6</sub> generation, the highest fruit yield per plant (1.94 kg) recorded in T<sub>8</sub> of cross M-3-1 x H-24 and T<sub>25</sub> of cross 87-2 x 18-1-1 which was at par with T<sub>6</sub> (1.93 kg) and T<sub>26</sub> (1.92 kg) and the least was in T<sub>11</sub> of cross M-3-1 x H-24, (1.41 kg) which was at par with T<sub>28</sub> and T<sub>29</sub> (1.44 kg). The standard checks 'Bhagyashree' and 'Dhanashree' registered 1.61 and 1.48 kg in the first trial and 1.82 kg and 1.63 kg in the second trial, respectively. The average fruit yield per plant was 1.45 and 1.63 kg in F<sub>5</sub> and F<sub>6</sub> generation, respectively.

The yield data presented in Table 2 reveals significant

variation in yield among progenies in both the trials. The yield ranged from 56.56 t/ha (T<sub>26</sub>, of cross 87-2 x 18-1-1) to 23.21 t/ha (T<sub>9</sub>, cross of M-3-1 x H-24) and from 57.35 t/ha (T<sub>25</sub>, cross of 87-2 x 18-1-1) to 35.01 t/ha (T<sub>11</sub>, cross of M-3-1 x H-24) in F<sub>5</sub> and F<sub>6</sub> progenies, respectively. The standard checks 'Bhagyashree' and 'Dhanashree' recorded 48.48 and 44.62 t/ha (trial one) and 49.4 and 42.96 t/ha (trial two) respectively. The mean yields of the two crosses along standard checks was 42.21 and 44.01 t/ha during first and second trial, respectively. Significant variation observed for yield and yield contributing characters' in both crosses of F<sub>5</sub> and F<sub>6</sub> generations is in closer conformity with work of Randhawa *et al.* (1988), Saikia *et al.* (1990), Moraru *et al.* (2004) and Garande (2006). The variation observed among genotypes for yield and yield contributing characters were brought about by differences in genetic variability and/or their interaction with various growth resources.

**Table 2:** Yield and yield contributing characters of tomato

Treatment (T)	No. of fruit per plant		Average fruit weight (g)		Fruit yield per plant (kg)		Yield (t/ha)	
	F <sub>5</sub>	F <sub>6</sub>	F <sub>5</sub>	F <sub>6</sub>	F <sub>5</sub>	F <sub>6</sub>	F <sub>5</sub>	F <sub>6</sub>
T1	34.07	42.87	58.13	61.07	1.24	1.63	36.63	43.71
T2	31.33	46.27	57.80	59.40	1.36	1.65	37.60	43.05
T3	34.07	38.47	57.53	59.53	1.21	1.74	32.97	46.08
T4	37.52	44.13	48.03	51.47	1.36	1.45	39.16	36.45
T5	40.90	41.93	41.00	47.96	1.60	1.62	49.33	42.95
T6	40.17	43.93	53.65	56.46	1.79	1.93	55.73	55.45
T7	39.61	43.47	39.45	44.32	1.59	1.75	48.76	46.55
T8	45.30	44.93	54.48	58.43	1.78	1.94	55.58	56.42
T9	38.50	28.13	26.12	28.27	1.33	1.60	23.21	41.45
T10	38.97	36.07	43.92	47.07	1.29	1.54	39.75	39.60
T11	38.63	39.80	40.15	44.40	1.08	1.41	32.05	35.01
T12	41.30	46.87	29.19	37.95	1.58	1.72	48.54	45.82
T13	43.43	45.40	36.21	38.81	1.56	1.52	47.54	39.15
T14	43.73	40.47	32.20	36.73	1.05	1.55	30.85	40.19
T15	34.60	37.67	34.77	39.77	1.29	1.64	37.48	42.34
T16	36.67	29.20	44.64	46.01	1.15	1.69	25.79	43.92
T17	38.67	39.73	49.72	52.98	1.16	1.49	33.67	37.20
T18	36.93	38.53	34.20	42.68	1.20	1.47	36.42	37.68
T19	36.63	35.73	39.37	43.93	1.55	1.60	47.35	42.41
T20	38.00	40.53	57.29	55.84	1.61	1.82	48.48	49.40
T21	36.73	38.40	54.79	56.45	1.48	1.63	44.62	42.96
T22	39.53	40.33	26.37	44.65	1.53	1.60	45.03	42.85
T23	39.07	46.40	43.75	45.27	1.55	1.66	49.65	43.57
T24	37.03	35.07	28.64	31.63	1.60	1.65	46.28	43.21
T25	36.79	50.13	48.53	49.79	1.92	1.94	54.68	57.35
T26	34.50	36.93	50.41	51.87	1.94	1.92	56.56	56.73
T27	33.20	36.93	42.53	48.99	1.37	1.53	40.41	40.03
T28	29.17	35.80	71.54	73.84	1.14	1.44	30.50	36.85
T29	29.33	32.73	74.55	77.24	1.06	1.44	26.58	36.70
T30	33.77	43.00	48.13	49.18	1.71	1.72	48.80	46.43
T31	34.70	43.67	45.76	49.07	1.58	1.52	44.65	41.39
T32	39.63	47.60	52.38	51.68	1.85	1.72	56.05	55.48
General mean	37.27	40.35	45.79	49.46	1.45	1.63	42.21	44.01
S.E±(mean)	1.20	2.28	3.00	4.22	0.07	0.10	2.04	2.69
C.D. at 5%	3.39	6.44	8.49	11.92	0.19	0.27	5.77	7.60

\*T<sub>1</sub> to T<sub>19</sub>, cross of M-3-1 x H-24 progenies; T<sub>20</sub>, Bhagyashree; T<sub>21</sub>, Dhanashree; T<sub>22</sub> to T<sub>32</sub>, cross of 87-2 x 18-1-1 progenies.

Viral diseases are most destructive diseases in tomato. This virus is characterized by reduction in leaf size, curling of leaves and stunted growth. Data recorded in Table 3 revealed that there were significant differences among progenies in respect to per cent disease incidence of leaf curl virus. The lowest per cent disease incidence was noticed in T<sub>32</sub> (1.80%) which was at par with T<sub>26</sub> (1.81%) and the highest was in T<sub>10</sub> and T<sub>17</sub> (2.58%) in F<sub>5</sub> generation. Whereas in F<sub>6</sub> generation, the least leaf curl virus incidence was observed in T<sub>26</sub> (0.62%) which was at par with T<sub>8</sub> (0.78%) and the highest disease incidence was observed in T<sub>9</sub> (5.14%). The two standard checks 'Bhagyashree' and 'Dhanashree' recorded 3.63 and 4.24 per cent in F<sub>5</sub> and 7.18 and 8.31 per cent in F<sub>6</sub>, respectively. The mean leaf curl virus disease incidence in F<sub>5</sub> and F<sub>6</sub> generations at 120 days after transplanting were 2.26 and 2.40 per cent, respectively. Ragupathy *et al.* (1997) also found that among five genotypes H-24 and H-36 recorded comparatively low incidence of 21.28 and 29.03 per cent, respectively. These results

are in close similarity with work of Kshirsagar (2009) and Patil (2010). The low incidence of this disease was attributed to the genotypes differences in which 18-1-1 was derived from *L. peruvianum* which has been found immune to these diseases. Moreover, these genotypes were selected through successive plant selection of F<sub>5</sub> and F<sub>6</sub> plants showing resistance to this disease.

### Acknowledgements

The Authors would like to thank All India Coordinated Research Project on Vegetable Crops and Tomato Improvement Scheme, MPKV, Rahuri for materials and financial support.

### सारांश

टमाटर की एफ-5 व एफ-6 पीढ़ियों का उपयोग कर ग्रीष्मकाल में उपज क्षमता का मूल्यांकन वर्ष 2009-10 तथा 2010-11 में किया गया। किसी भी फसल उत्पादन में उपज सर्वोच्च घटक है जो उत्पादन के लिये चयनित प्रभेदों का महत्व, कई प्रभावी घटकों में

**Table 3:** Leaf curl virus disease incidence (arcsine value) in tomato

Treatment(T)	Leaf curl virus (%)	
	F <sub>5</sub>	F <sub>6</sub>
T1 (M-3-1 x H-24)	1.85	1.50
T2 (M-3-1 x H-24)	2.17	1.50
T3 (M-3-1 x H-24)	1.99	1.74
T4 (M-3-1 x H-24)	2.10	2.34
T5 (M-3-1 x H-24)	2.02	1.25
T6 (M-3-1 x H-24)	1.87	1.30
T7 (M-3-1 x H-24)	1.95	2.68
T8 (M-3-1 x H-24)	1.91	0.78
T9 (M-3-1 x H-24)	2.27	5.14
T10 (M-3-1 x H-24)	2.58	3.99
T11 (M-3-1 x H-24)	2.37	2.55
T12 (M-3-1 x H-24)	2.06	3.13
T13 (M-3-1 x H-24)	2.23	2.43
T14 (M-3-1 x H-24)	2.36	2.26
T15 (M-3-1 x H-24)	2.27	3.30
T16 (M-3-1 x H-24)	2.23	2.57
T17 (M-3-1 x H-24)	2.58	2.78
T18 (M-3-1 x H-24)	2.34	2.21
T19 (M-3-1 x H-24)	1.85	1.39
T20 ('Bhagyashree')	3.63	7.18
T21 ('Dhanashree')	4.24	8.31
T22 (87-2 x 18-1-1)	1.95	1.41
T23 (87-2 x 18-1-1)	2.38	1.48
T24 (87-2 x 18-1-1)	2.38	3.07
T25 (87-2 x 18-1-1)	1.87	0.96
T26 (87-2 x 18-1-1)	1.81	0.62
T27 (87-2 x 18-1-1)	2.30	2.17
T28 (87-2 x 18-1-1)	2.45	1.39
T29 (87-2 x 18-1-1)	2.41	1.82
T30 (87-2 x 18-1-1)	1.88	1.47
T31 (87-2 x 18-1-1)	2.33	1.04
T32 (87-2 x 18-1-1)	1.80	1.13
General mean	2.26	2.40
S.E <sub>±</sub> (mean)	0.21	0.41
C.D. at 5%	0.58	1.14

जाना जाता है। टमाटर के दो संकरण (एम-31x एच-24 व 87-2x18-1-1) से उत्पन्न एफ-5 व एफ-6 पीढ़ियों तथा दो मानक नियन्त्रक (भाग्य श्री व धन श्री) का मूल्यांकन किया गया। अधिकतम पौध लम्बाई 92.67 व 81.4 सेन्टी मीटर टी 27 (संकरण 87-2, 18-1-1) की एफ 5 व एफ 6 की पीढ़ियों में क्रमशः पाया गया, प्रति पौध शाखाओं की संख्या, 6.2 (टी-6, संकरण एम-3-1xएच-24) की एफ-5 तथा 5.33 (टी 32 संकरण 87.2x18-1-1) की एफ-6, प्रथम तुड़ाई के औसत 66 (टी 9, संकरण एम-3-1xएच-24) से 75.33 दिन एफ-5 में तथा 71.33 से 80 दिन एफ-6, तुड़ाई की अवधि 67.67 से 69 दिन एफ-5 में एवं 52 से 70 दिन एफ-6 दोनों पीढ़ियों में सभी उपज व उपज गुणों के लिए सार्थक अन्तर पाया गया। अधिकतम फल संख्या/पौध 45.3 (टी 8 संकरण एम-3-1 xएच-24) एफ-5 पीढ़ी तथा 50.13 (टी 25) एफ-6 औसत फल भार 74.55 तथा 77.24 ग्राम (टी-29, संकरण 87-2x18-1-1) एफ-5 तथा एफ-6 संतति पीढ़ियों में क्रमशः फल उपज प्रति पौध 1.94 किलोग्राम (टी 26 संकरण 87-2\*18-1-1) एफ-5 तथा 1.94 किलोग्राम (टी8 व टी 25) एफ-6 पीढ़ी, उपज 56.56 टन/हे. (टी26) एफ-5 व 57.35 टन/हे. एफ-6 पीढ़ी में पाया गया। टमाटर में लीफ कर्ल वायरस रोग का संक्रमण एफ 5 पीढ़ी में 2.26 तथा एफ-6 पीढ़ी में 2.4 प्रतिशत पाया गया।

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