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National Academy of Agricultural Science (NAAS) Rating : 3.03

Influence of Foliar Application of Micronutrients on Tomato (*Lycopersicon esculentum* Mill.) cv. "Gujarat Tomato 2"

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ABSTRACT: *The present investigation was undertaken with the main objective to study the influence of foliar application of micronutrients on Tomato (*Lycopersicon esculentum *Mill.) cv. "Gujarat Tomato 2'' at ASPEE, ARDF, Tansa farm during* rabi *season 2012-2013 and 2013-14. The experiment consists of eight treatments involving T_1 (RD NPK through chemical fertilizers N: P_2O_5: K_2O kg ha^{-1} (75 : 37.5 : 62.5)), T_2 (T_1+ 100 ppm B;* i.e. *Boric acid 0.571g l^{-1}), T_3 (T_1+ 100 ppm Zn;* i.e. *Zinc sulphate 0.246 g l^{-1}), T_4 (T_1 + 100 ppm Cu;* i.e. *Copper sulphate 0.420 g l^{-1}), T_5 (T_1+100 ppm Fe;* i.e. *Ferrous sulphate 0.515 g l^{-1}), T_6 (T_1 + 100 ppm Mn;* i.e. *Manganese sulphate 0.320 g l^{-1}), and T_7 (T_1 + Mixture of all micronutrients) and T_8 (T_1 + Multiplex 4 ml l^{-1}) by mixing with simple water were imposed. The foliar application was made by using equipment knapsack sprayer (ASPEE) in the evening hours. The thrice times foliar spray were made at 10 days interval starting from 40 days after transplanting seedlings in the main field. The data for both years and pooled analysis study clearly revealed that the yield obtained with treatment T_7 had significantly maximum plant height (131.73, 132.77 and 132.25 cm), number of branches $plant^{-1}$ (5.81, 5.96 and 5.89), fresh weight of plants (25.65, 25.70 and 25.67 t. ha^{-1}), dry matter yield of plants (7670.03, 7679.04 and 7669.53 kg ha^{-1}), maximum days to last picking (166.68, 166.01 and 166.34), number of fruits $plant^{-1}$ (34.26, 34.43 and 34.34) (Plate 1), fruit length (5.52, 5.47 and 5.50 cm), fruit diameter (4.64, 4.57 and 4.60 cm), fruit volume (67.53, 65.94 and 66.74 cm^3), single fruit weight (49.20, 49 and 49.10 g), fruit weight $plant^{-1}$ (1.68, 1.69 and 169 kg), number of locules $fruit^{-1}$ (3.03, 3.01 and 3.02), pericarp thickness (6.23, 6.27 and 6.25 mm), fruit yield ha^{-1} (46.78, 46.87 and 46.82 t.) and marketable fruit yield ha $^{-1}$ (45.62, 45.67 and 45.65 t.), respectively. This treatment had maximum net returns (1, 66,757; 1, 66,752 and 1, 66, 754 ₹/ha) and B: C ratio (2.72: 1, 2.71: 1 and 2.72: 1) out all other treatments than over control, respectively in the both years and pooled analysis study.*

Keywords: *Micronutrient, tomato, GT-2, etc.*

INTRODUCTION

Tomato (*Lycopersicon esculentum* Miller, 2n = 2x = 24), originated in Tropical America, belongs to family Solanaceae, popularly known as *Wolf apple, Love of Apple or Vilayati baingan* is one of the most important vegetable crop, and was introduced in India by the Portuguese. It is a leading vegetable crop grown across the length of country due to its wide adaptability of various agro-climatic conditions. It is equally liked by both poor and rich and is quite high in nutritive value.

Micronutrients are not only essential for better growth, yield and quality but also important like other major nutrients in spite of their requirement in micro quantity. It also helps in uptake of major nutrients and also vital to the growth of plants acting as catalyst in promoting various organic reaction from cell development to respiration, photosynthesis, chlorophyll formation, enzyme activity, hormones synthesis and nitrogen fixation. Considerable research work has been done on the aspect of foliar application of micronutrients in different crops and the experimental results indicated not only increase in

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yield up to 20 per cent but also helpful to sustain crop production. Arora *et al*. (1979) reported that micronutrients like boron, copper, molybdenum and zinc through foliage can also improve the vegetative growth, fruit set and yield of tomato. Working with tomato, Mallick and Muthukrishnan (1980) reported that the role of micronutrients in the "nutrient element balance" of the plant is of considerable interest. Looking to the importance of the crop, future scope and heavy demand of tomato fruits for the domestic as well as export business and for processing industry, a field trial entitled on the influence of foliar application of micronutrients on Tomato (*Lycopersicon esculentum* Mill.) cv. "Gujarat Tomato 2'' was conducted at American Spring Pressing Works, Pvt. Ltd. (ASPEE), Agricultural Research Development Foundation (ARDF), TANSA Farm during the years of *rabi* 2012-13 and 2013-14.

MATERIAL AND METHODS

The present investigation was carried out at American Spring Pressing Works, Pvt. Ltd. (ASPEE), Agricultural Research Development Foundation (ARDF), TANSA Farm during the year *rabi* 2012-13 and 2013-14. In all eight treatments *viz*., T_1 (RD NPK through chemical fertilizers 75: 37.5: 62.5); T_2 (T_1+ 100 ppm B); T_3 (T_1+100 ppm Zn); T_4 (T_1 + 100 ppm Cu); T_5 (T_1+100 ppm Fe); T_6 (T_1 +100 ppm Mn); T_7 (T_1 + Mixture of all micronutrients) and T_8 (T_1 + Multiplex 4 ml l^{-1}) were evaluated in a Randomized Block Design with five replications. The tomato cv. GT-2 seedlings nursery was raised at 15 cm x 7 cm distance in a plot size 3 x 1 m and transplanted in plot size 4.2 m X 3.6 m. All agronomical practices in virgue were employed from time to time. The statistical analysis was done by using method of Panse and Sukhatme, (1967).

RESULTS AND DISCUSSION

The experimental data clearly showed that the significant results of growth and yield attributes of crop obtained with treatment T_7 (T_1 + mixture of all micronutrients thrice times foliar spray 10 days interval starting from 40 days after transplanting seedling in the main field). The data of two years and pooled study clearly indicated that the yield obtained with treatment T_7 had significantly maximum plant height (131.73; 132.77 and 132.25 cm), number of branches $plant^{-1}$ (5.81; 5.96 and 5.89) (Table 1), fresh weight of plants (25.65; 25.70 and 25.67 t. ha^{-1}), dry matter yield of plants (7670.03, 7679.04 and 7669.53 kg ha^{-1}) (Table 2), maximum days to last picking (166.68; 166.01 and 166.34), number of fruits $plant^{-1}$ (34.26; 34.43 and 34.34), fruit length (5.52; 5.47 and 5.50 cm) (Table 3), fruit diameter (4.64; 4.57 and 4.60 cm), fruit volume (67.53; 65.94 and 66.74 cm^3) (Fig. 1), single fruit weight (49.20; 49 and 49.10 g) (Table 4), fruit weight $plant^{-1}$ (1.68; 1.69 and 169 kg), number of locules $fruit^{-1}$ (3.03; 3.01 and 3.02) (Fig. 2), pericarp thickness (6.23; 6.27 and 6.25 mm) (Table 5) (Fig. 3), fruit yield ha^{-1} (46.78; 46.87 and 46.82 t.) (Table 6) (Fig. 4) and marketable fruit yield ha^{-1} (45.62; 45.67 and 45.65 t.), respectively. This treatment had maximum net returns (1, 66,757; 1, 66,752 and 1, 66, 754 ₹/ ha) and B: C ratio (2.72: 1, 2.71: 1 and 2.72: 1) (Table 7) out all other treatments than over control, respectively.

The T_8 (T_1 + (Zn 3 %, Mn 1%, B 0.5% and Fe 2% multiplex 4 ml/lit of simple water foliar thrice times spray at 10 days interval starting from 40 days after transplanting seedling in the main field) had positive effects next to T_7 consisting of the combination of inorganic fertilizer plus mixture of all micronutrients produced for particularly higher plant height (129.88, 129.06 and 129.47 cm), number of branches $plant^{-1}$ (5.73; 5.92 and 5.83) (Table 1), fresh weight of plants ha^{-1} (24.60; 25.18 and 24.89 t.), dry matter yield of plant ha^{-1} (7627.25, 7604.91 and 7616.08 kg), minimum days to first picking of fruits (73.26; 73.89 and 73.58) (Table 2), maximum harvesting period of days to last picking of fruit (165.44; 165.39 and 165.42), number of fruits $plant^{-1}$ (33.23; 33.84 and 33.53), fruit length (5.26 cm; 5.23 and 5.24 cm) (Table 3), fruit diameter (4.41; 4.40 and 4.41 cm), fruit volume (64.04; 64 and 64.02 cm^3), single fruit weight (43.20; 43.40 and 43.30 g) (Table 4), fruit weight $plant^{-1}$ (1.43; 1.47 and 1.45 kg), pericarp thickness (6.02; 6.09 and 6.06 mm) (Table 5), fruit yield ha^{-1} (39.80; 40.85 and 40.32 t.) (Table 6) and marketable fruit yield ha^{-1} (39.50, 39.58 and 39.53 t.) (Table 7), respectively in two years and pooled study at the end of experimentation. It had highest high net maximum realization of ₹ 1, 39,293.00; 1, 39,337.00 and 1, 39,315.00 ha^{-1} and B: C ratio of 2.39:1; 2.38:1 and 2.39:1 (Table 7) out all other treatments at the end of study, respectively. These findings are similar with the results of Bhatt *et al*. (2004); Patil *et al.* (2008) and Saravaiya *et al.* (2014), who obtained maximum benefit: cost ratio with foliar application of mixture of all micronutrients. The interaction between Y X T was found non-significant. This might be due to the results pertaining to above growth and yield attributes of plants as influenced by foliar application of micronutrients and however, above results due to the enhancement in photosynthesis, deposition of photo assimilates, translocation of carbohydrates, improvement in physiological and other metabolic

Table 1
Influence of Foliar Application of Micronutrients on Days to 50% Flowering, Plant Height and no. of Branches Per plant of Tomato (*Lycopersicon esculentum* Mill.) cv. "Gujarat Tomato 2"

Characters	*Days to 50 % flowering*			*Plant height (cm)*			*No. of branches per plant*		
Treatments	*Year-I*	*Year-II*	*Pooled*	*Year-I*	*Year-II*	*Pooled*	*Year-I*	*Year-II*	*Pooled*
T_1	32.12	32.00	32.06	81.69	81.70	81.69	3.36	3.42	3.39
T_2	34.67	34.82	34.75	97.74	97.62	97.68	4.63	4.72	4.67
T_3	34.10	34.11	34.10	112.44	112.66	112.55	4.11	4.26	4.19
T_4	34.09	34.10	34.09	84.32	84.25	84.28	3.56	3.56	3.56
T_5	33.77	33.88	33.82	84.68	84.65	84.67	3.55	3.54	3.55
T_6	31.88	31.88	31.88	89.50	89.83	89.66	3.67	3.94	3.81
T_7	35.67	35.57	35.62	131.73	132.77	132.25	5.81	5.96	5.89
T_8	35.22	35.44	35.33	129.88	129.06	129.47	5.73	5.92	5.83
S.Em.±	0.57	0.54	2.95	2.92	2.99	15.64	0.30	0.27	1.51
C.D. @ 0.05	1.65**	1.58**	8.35**	8.45**	8.67**	44.30**	0.87**	0.77**	4.27**
Y									
S.Em.±			1.47			7.82			0.75
C.D. @ 0.05			4.18			22.15			2.13
C.V. (%)	3.75	3.58	3.67	6.43	6.59	6.51	15.63	13.54	14.60

Table 2
Influence of Foliar Application of Micronutrients on Fresh Weight Per Plant, Dry Matter Yield Per Plant and Days to First Picking of Tomato (*Lycopersicon esculentum* Mill.) cv. "Gujarat Tomato 2"

Characters	*Fresh weight of plant (t. ha^{-1})*			*Dry matter content of plant (kg. ha^{-1})*			*Day to first picking*		
Treatments	*Year-I*	*Year-II*	*Pooled*	*Year-I*	*Year-II*	*Pooled*	*Year-I*	*Year-II*	*Pooled*
T_1	19.14	19.16	19.15	5958.17	5983.40	5970.79	90.44	90.68	90.56
T_2	23.09	23.04	23.07	6757.51	6853.84	6805.67	81.38	81.43	81.41
T_3	23.28	23.32	23.30	7301.61	7331.30	7316.45	80.59	80.70	80.64
T_4	21.82	20.80	21.31	6577.28	6596.01	6586.65	86.64	86.60	86.62
T_5	22.06	21.51	21.78	6679.59	6793.84	6736.71	83.25	83.55	83.40
T_6	22.56	22.56	22.56	6868.19	6817.08	6842.63	82.52	82.82	82.67
T_7	25.65	25.70	25.67	7670.03	7669.04	7669.53	75.26	75.20	75.23
T_8	24.60	25.18	24.89	7627.25	7604.91	7616.08	73.26	73.89	73.58
S.Em.±	1.28	1.30	6.83	248.18	256.14	1334.47	1.92	1.83	9.92
C.D. @ 0.05	3.72**	3.76**	19.35**	718.94**	742.01**	3780.57**	5.55**	5.30**	28.09**
Y									
S.Em.±			3.41			667.24			4.96
C.D. @ 0.05			9.67			1890.29			14.05
C.V. (%)	12.59	12.82	12.71	8.01	8.23	8.12	5.25	5.00	5.13

Table 3
Influence of Foliar Application of Micronutrients on Days to Last Picking, No. of Fruit Per Plant and Fruit Length of Tomato (*Lycopersicon esculentum* Mill.) cv. "Gujarat Tomato 2"

Characters	*Day to last picking*			*No. of fruit plant^{-1}*			*Fruit length (cm)*		
Treatments	*Year-I*	*Year-II*	*Pooled*	*Year-I*	*Year-II*	*Pooled*	*Year-I*	*Year-II*	*Pooled*
T_1	143.57	143.38	143.47	22.44	22.45	22.44	4.07	4.07	4.07
T_2	156.46	156.84	156.65	31.01	31.18	31.10	5.05	5.01	5.03
T_3	162.50	162.57	162.53	31.06	31.16	31.11	5.17	5.22	5.20
T_4	146.99	146.54	146.77	25.63	25.63	25.63	4.39	4.35	4.37
T_5	151.86	151.86	151.86	26.25	26.18	26.22	4.64	4.50	4.57
T_6	154.24	154.44	154.34	29.64	29.31	29.48	4.89	4.80	4.84
T_7	166.68	166.01	166.34	34.26	34.43	34.34	5.52	5.47	5.50
T_8	165.44	165.39	165.42	33.23	33.84	33.53	5.26	5.23	5.24
S.Em.±	3.29	3.77	18.71	1.44	1.47	7.69	0.26	0.25	1.37
C.D. @ 0.05	9.52**	10.92**	53.00**	4.18**	4.25**	21.80**	0.76**	0.74**	3.88**
Y									
S.Em.±			9.35			3.85			0.69
C.D. @ 0.05			26.50			10.90			1.94
C.V. (%)	4.71	5.41	5.07	11.05	11.20	11.12	12.08	11.79	11.94

Table 4
Influence of Foliar Application of Micronutrients on Fruit Diameter, Fruit Volume and Fruit Weight of Tomato (*Lycopersicon esculentum* Mill.) cv. "Gujarat Tomato 2"

Characters	*Fruit diameter (cm)*			*Fruit volume (cm^3)*			*Fruit weight (gm)*		
Treatments	*Year-I*	*Year-II*	*Pooled*	*Year-I*	*Year-II*	*Pooled*	*Year-I*	*Year-II*	*Pooled*
T_1	3.39	3.45	3.42	50.38	49.87	50.13	33.20	33.00	33.10
T_2	4.03	4.08	4.05	61.75	61.71	61.73	41.00	41.20	41.10
T_3	4.24	4.22	4.23	62.76	62.72	62.74	44.20	44.60	44.40
T_4	3.67	3.79	3.73	55.32	55.28	55.30	36.20	36.00	36.10
T_5	3.75	3.82	3.79	56.32	56.28	56.30	38.80	38.60	38.70
T_6	4.02	4.02	4.02	58.25	58.21	58.23	33.00	33.40	33.20
T_7	4.64	4.57	4.60	67.53	65.94	66.74	49.20	49.00	49.10
T_8	4.41	4.40	4.41	64.04	64.00	64.02	43.20	43.40	43.30
S.Em.±	0.19	0.16	0.92	3.00	3.08	16.08	1.27	1.23	6.61
C.D. @ 0.05	0.55**	0.46**	2.60**	8.70**	8.91**	45.57**	3.68**	3.56**	18.73**
Y									
S.Em.±			0.46			8.04			3.31
C.D. @ 0.05			1.30			22.78			9.37
C.V. (%)	10.50	8.69	9.63	11.27	11.61	11.44	7.13	6.88	7.01

Table 5
Influence of Foliar Application of Micronutrients on No. of Locus Per Fruit, Pericarp Thickness and Fruit Yield of Tomato (*Lycopersicon esculentum* Mill.) cv. "Gujarat Tomato 2"

Characters	*No. of locus $fruit^{-1}$*			*Pericarp thickness (mm)*			*Fruit yield plant (kg)*		
Treatments	*Year-I*	*Year-II*	*Pooled*	*Year-I*	*Year-II*	*Pooled*	*Year-I*	*Year-II*	*Pooled*
T_1	2.26	2.27	2.27	5.00	5.00	5.00	0.74	0.74	0.74
T_2	2.61	2.71	2.66	5.75	5.73	5.74	1.27	1.28	1.28
T_3	2.60	2.65	2.63	5.77	5.76	5.76	1.37	1.39	1.38
T_4	2.30	2.31	2.30	5.00	5.01	5.01	0.92	0.92	0.92
T_5	2.37	2.31	2.34	5.21	5.19	5.20	1.02	1.01	1.02
T_6	2.34	2.32	2.33	5.47	5.49	5.48	0.98	0.98	0.98
T_7	3.03	3.01	3.02	6.23	6.27	6.25	1.68	1.69	1.69
T_8	2.58	2.65	2.61	6.02	6.09	6.06	1.43	1.47	1.45
S.Em.±	0.09	0.11	0.54	0.18	0.18	0.94	0.07	0.08	0.40
C.D. @ 0.05	0.25**	0.33**	1.52**	0.52**	0.51**	2.66**	0.21**	0.23**	1.12**
Y									
S.Em.±			0.27			0.47			0.20
C.D. @ 0.05			0.76			1.33			0.56
C.V. (%)	7.83	10.03	9.00	7.24	7.04	7.14	13.60	14.72	14.17

Table 6
Influence of Foliar Application of Micronutrients on Fruit Yield Per plot and Hectare of Tomato (*Lycopersicon esculentum* Mill.) cv. "Gujarat Tomato 2"

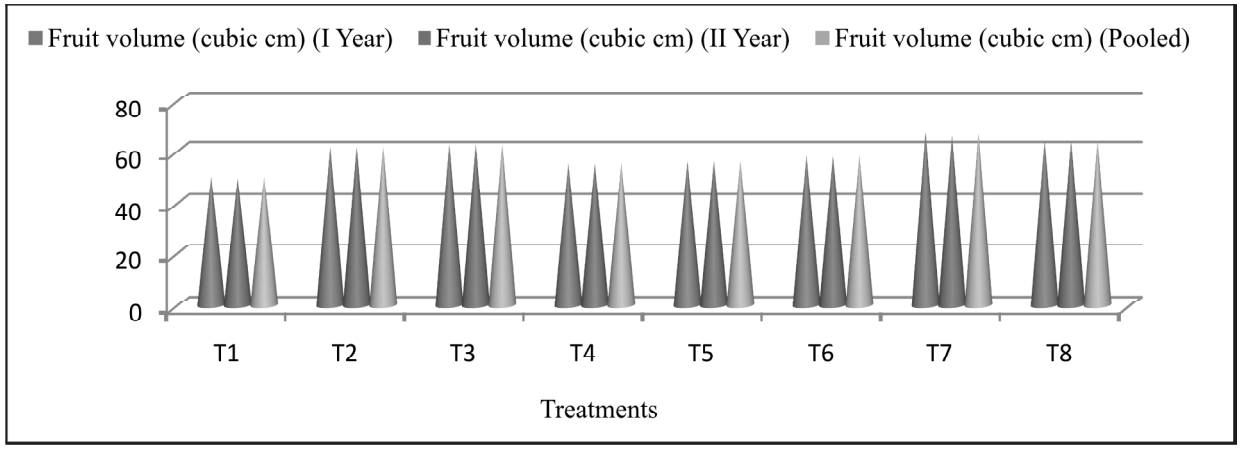
Characters	*Fruit yield $plot^{-1}$ (kg)*			*Fruit yield ha^{-1} (tonne)*		
Treatments	*Year-I*	*Year-II*	*Pooled*	*Year-I*	*Year-II*	*Pooled*
T_1	31.11	31.05	31.08	20.58	20.54	20.56
T_2	53.40	53.90	53.65	35.32	35.65	35.49
T_3	57.70	58.56	58.13	38.16	38.73	38.45
T_4	38.84	38.64	38.74	25.69	25.56	25.62
T_5	43.01	42.61	42.81	28.45	28.18	28.32
T_6	41.06	41.04	41.05	27.16	27.14	27.15
T_7	70.72	70.86	70.79	46.78	46.87	46.82
T_8	60.17	61.77	60.97	39.80	40.85	40.32
S.Em.±	3.01	3.28	16.65	1.99	2.17	11.01
C.D. @ 0.05	8.72**	9.50**	47.18**	5.77**	6.28**	31.21**
Y						
S.Em.±			8.33			5.51
C.D. @ 0.05			23.59			15.60
C.V. (%)	13.60	14.72	14.17	13.60	14.72	14.17

Table 7
Economics of Different Treatments

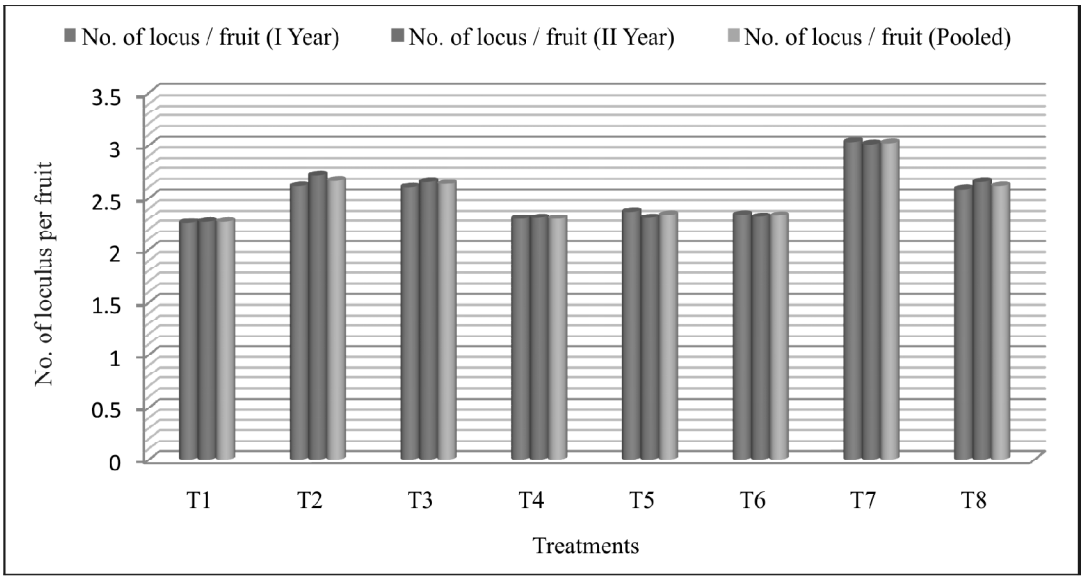
Characters	*Marketable fruit yield, kg ha^{-1}*			*Total cost of cultivation, ₹*			*Gross returns, ₹*			*Net returns, ₹.*			*C: B ratio*		
Treat. No.	*Year-I*	*Year-II*	*Pooled*	*Year-I*	*Year-II*	*Pooled*	*Year-I*	*Year-II*	*Pooled*	*Year-I*	*Year-II*	*Pooled*	*Year-I*	*Year-II*	*Pooled*
T_1	18,846	18,790	18,818	48,947	49,247	49,097	94,230	93,951	94,090	45,283	44,704	44,993	1:0.93	1:0.91	1:0.92
T_2	32,742	32,926	32,834	58,084	55,412	56,748	1,63,713	1,64,634	164,173	1,05,629	1,09,222	107,425	1:1.82	1:1.97	1:1.90
T_3	37,058	37,082	37,070	57,027	57,327	57,177	1,85,291	1,85,410	185,350	1,28,264	1,28,083	128,173	1:2.25	1:2.23	1:2.24
T_4	23,148	23,173	23,160	51,627	51,927	51,777	1,15,740	1,15,867	115,803	64,113	63,940	64,026	1:1.24	1:1.23	1:1.24
T_5	26,068	26,156	26,112	52,427	52,727	52,577	1,30,344	1,30,781	130,562	77,917	78,054	77,985	1:1.49	1:1.48	1:1.49
T_6	24,550	24,656	24,603	52,227	52,527	52,377	1,22,753	1,23,284	123,018	70,526	70,757	70,641	1:1.35	1:1.35	1:1.35
T_7	45,616	45,675	45,646	61,327	61,627	61,477	2,28,084	2,28,379	228,231	1,66,757	1,66,752	166,754	1:2.72	1:2.71	1:2.72
T_8	39,504	39,572	39,538	58,227	58,527	58,377	1,97,520	1,97,864	197,692	1,39,293	1,39,337	139,315	1:2.39	1:2.38	1:2.39

Table 8
Cost of Inputs

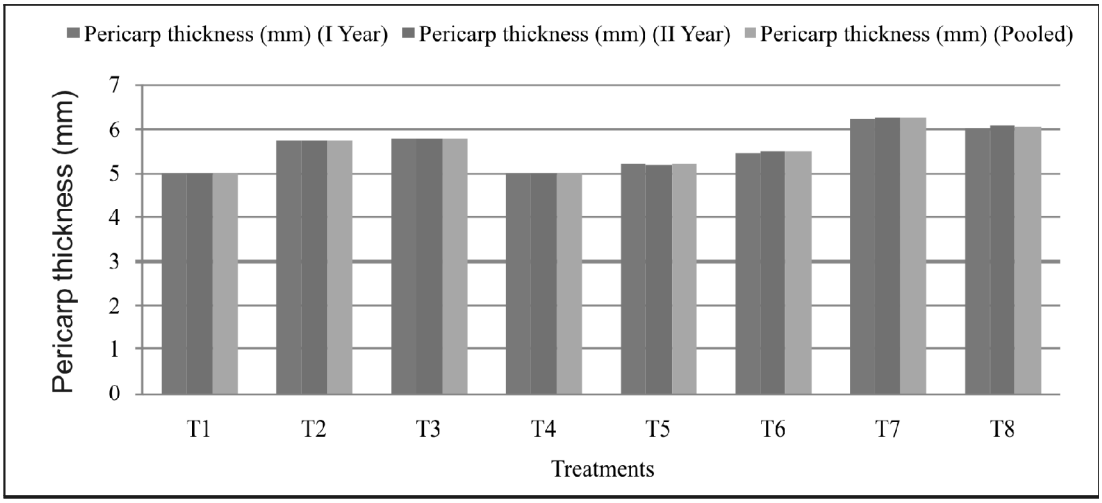
Sr. No	*Inputs*	*Cost (₹)*	*Sr. No*	*Inputs*	*Cost (₹)*
1	Sale price of 1 kg. fruit of tomato	5	10	Cost of 1kg seed of "Gujarat Tomato-2"	1800
2	Cost of 1 tonne of FYM	750	11	Boric acid (1kg)	696
3	Cost of 1 kg N as Urea	12.08	12	Zinc sulphate (1kg)	960
4	Cost of 1 kg P_2O_5 as SSP	18.75	13	Copper sulphate (1kg)	1062
5	Cost of 1 kg K_2O as MOP	10.51	14	Ferrous sulphate(1kg)	320
6	Labour cost head^{-1}	120	15	Manganese sulphate (1kg)	896
7	Ploughing hr^{-1}	200	16	Multiplex (Commercial formulation 1litre)	300
8	Harrowing hr^{-1}	150	15	Manganese sulphate (1kg)	896
9	Planking hr^{-1}	100			



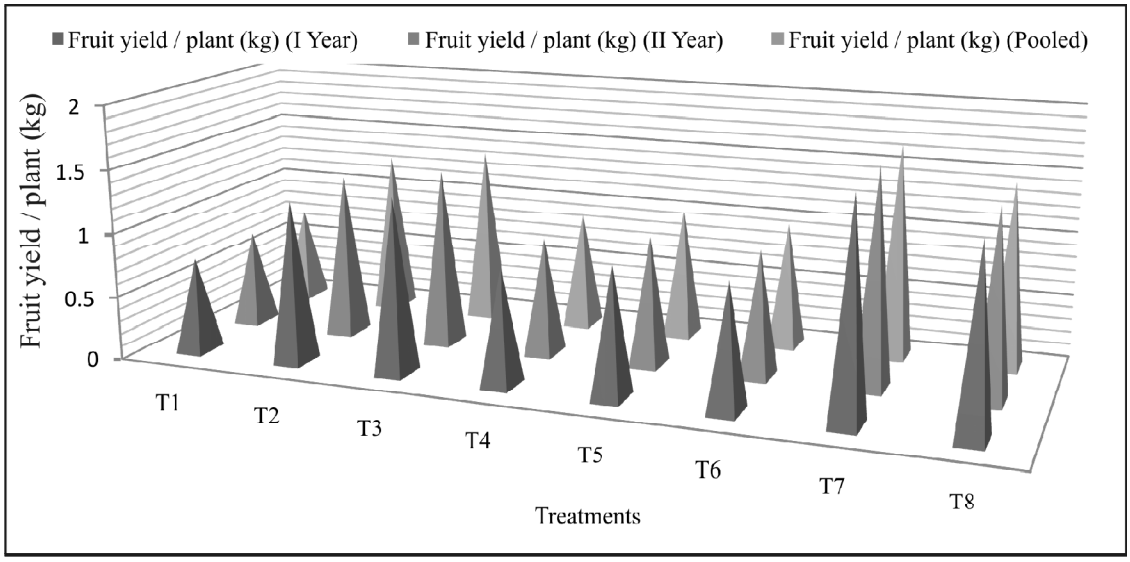
Graph 1:- Influence of foliar application of micronutrients on fruit volume (cm³) of tomato (*Lycopersicon esculentum* Mill.) cv. "Gujarat Tomato 2"



Graph 2- Influence of foliar application of micronutrients on no. of loculus per fruit of tomato (*Lycopersicon esculentum* Mill.) cv. "Gujarat Tomato 2"



Graph 3:- Influence of foliar application of micronutrients on no. pericarp tickness (mm) fruit of tomato (*Lycopersicon esculentum* Mill.) cv. "GT-2"



Graph 4:- Influence of foliar application of micronutrients on fruit yield per plant of tomato (*Lycopersicon esculentum* Mill.) cv. "Gujarat Tomato 2"

Plate 1: No. of fruits of tomato cv. Gujarat Tomato 2

activity which led to an increase in various plant metabolites responsible for actively cell division and elongation results improvement in growth characters (Hatwar *et al.*, 2003). The regular and continues availability of micronutrients for longer period helped to synthesis and deposition of photo-assimilates. Size of fruits and yield of plant is the cumulative effect of various attributes as affected by micro nutrients through higher rate of cell division and enlargement, photosynthesis and increase in enzymatic activities. Increased yield due to micronutrients application may be attributed to enhanced photosynthetic activity, resulting into the increased production and accumulation of carbohydrate and favorable effect on vegetative growth and retention of flower and fruits which might have increased number of fruits per plant besides improvement in the fruit size. The increase in dry matter production of fruits may be attributed to greater accumulation of photosynthates by vegetative parts and its subsequent translocation to the sink. Also role of boron which enhance the movement of sugar complex from the leaves to the fruit and ultimately increased the fruit yield according to results given by Pandita *et al.* (1976) and Singh *et al.* (2003).

CONCLUSION

From the forgoing discussion, it can be concluded that foliar spray of T_7 (T_1 + mixture of all micronutrients) effective which much more effective over control for both years and pooled study at the end of experimentation. It can be concluded that the growth and yield attributes of tomato cv. GT-2 showed positive results for spraying of T_7 treatment (T_1 + mixture of all micronutrients thrice times foliar spray at 10 days interval starting from 40 days after transplanting seedlings in the main field) then followed by T_8 (T_1 + multiplex 4 ml/lit. of simple water) treatment.

ACKNOWLEDGEMENTS

The authors are grateful to Directors of ASPEE, Agricultural Research and Development Foundation, Mumbai for providing facilities for conducting the research work.

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