

**Supplementary Table1.** Plant height dynamics in tomato as influenced by iodine treatments across different intervals (2022–2023 and 2023–2024)

Sl. No.	Treatment	Method of application	Plant height (cm)							
			30 days after transplanting		60 days after transplanting		90 days after transplanting		120 days after transplanting	
			2022–23	2023–24	2022–23	2023–24	2022–23	2023–24	2022–23	2023–24
T <sub>1</sub>	Control		21.37±1.23 <sup>b</sup>	22.36±1.58 <sup>c</sup>	47.65 ± 1.12 <sup>a</sup>	47.26 ± 1.51 <sup>a</sup>	72.90 ± 1.18 <sup>b</sup>	72.26 ± 0.62 <sup>c</sup>	82.46 ± 3.61 <sup>c</sup>	87.54 ± 1.13 <sup>c</sup>
T <sub>2</sub>	KI	Soil application	23.37±0.91 <sup>ab</sup>	23.96±0.85 <sup>c</sup>	47.84 ± 1.82 <sup>a</sup>	47.49 ± 1.30 <sup>a</sup>	73.23 ± 0.73 <sup>b</sup>	71.51 ± 0.45 <sup>c</sup>	91.00 ± 0.81 <sup>b</sup>	89.90 ± 2.75 <sup>bc</sup>
T <sub>3</sub>	KIO <sub>3</sub>	Soil application	24.73±2.14 <sup>a</sup>	24.02±0.80 <sup>c</sup>	49.57 ± 2.07 <sup>a</sup>	48.39 ± 1.36 <sup>a</sup>	73.72 ± 0.89 <sup>b</sup>	73.76 ± 0.99 <sup>bc</sup>	91.16 ± 2.35 <sup>b</sup>	90.71 ± 2.15 <sup>bc</sup>
T <sub>4</sub>	KI	Foliar application	29.27±0.91 <sup>a</sup>	30.64±1.12 <sup>a</sup>	51.52 ± 1.97 <sup>a</sup>	51.18 ± 2.30 <sup>a</sup>	76.75 ± 0.70 <sup>ab</sup>	76.24 ± 2.01 <sup>b</sup>	102.60 ± 2.91 <sup>a</sup>	105.79 ± 2.24 <sup>a</sup>
T <sub>5</sub>	KIO <sub>3</sub>	Foliar application	29.63±1.25 <sup>a</sup>	30.60±0.25 <sup>a</sup>	51.11 ± 1.72 <sup>a</sup>	50.80 ± 1.69 <sup>a</sup>	75.82 ± 4.84 <sup>b</sup>	74.62 ± 0.62 <sup>bc</sup>	102.59 ± 2.36 <sup>a</sup>	105.77 ± 3.57 <sup>a</sup>
T <sub>6</sub>	KI	Seed priming	27.03±0.79 <sup>a</sup>	24.66±0.72 <sup>bc</sup>	48.70 ± 2.25 <sup>a</sup>	48.19 ± 1.27 <sup>a</sup>	74.93 ± 1.81 <sup>b</sup>	74.90 ± 0.43 <sup>bc</sup>	89.15 ± 0.99 <sup>bc</sup>	87.71 ± 2.15 <sup>c</sup>
T <sub>7</sub>	KIO <sub>3</sub>	Seed priming	26.00±2.11 <sup>a</sup>	24.58±1.07 <sup>bc</sup>	47.84 ± 0.97 <sup>a</sup>	47.80 ± 2.33 <sup>a</sup>	73.95 ± 1.29 <sup>b</sup>	74.05 ± 1.08 <sup>bc</sup>	89.15 ± 1.72 <sup>bc</sup>	87.30 ± 3.65 <sup>c</sup>
T <sub>8</sub>	KI	SP+SA+FA	30.43±1.41 <sup>a</sup>	30.72±0.84 <sup>a</sup>	51.53 ± 4.19 <sup>a</sup>	48.30 ± 2.33 <sup>a</sup>	81.82 ± 1.74 <sup>ab</sup>	81.33 ± 1.35 <sup>a</sup>	106.20 ± 4.31 <sup>a</sup>	104.06 ± 2.34 <sup>a</sup>
T <sub>9</sub>	KIO <sub>3</sub>	SP+SA+FA	28.23±2.38 <sup>a</sup>	27.30±0.95 <sup>b</sup>	48.21 ± 0.64 <sup>a</sup>	49.67 ± 2.10 <sup>a</sup>	78.50 ± 0.60 <sup>ab</sup>	76.36 ± 2.19 <sup>b</sup>	100.51 ± 2.22 <sup>a</sup>	98.03 ± 3.84 <sup>ab</sup>
LSD ( $p \leq 0.05$ )			5.07	2.90	6.17	4.42	5.89	3.52	8.04	8.40
CV (%)			4.89	5.10	7.22	5.24	4.49	2.71	4.20	4.56

SA: Soil application; SP: Seed priming; FA: Foliar application.

**Supplementary Table 2.** Modulation of canopy structure and flowering by iodine treatments in tomato (2022–2023 and 2023–2024)

Sl. No.	Treatment	Method of application	Canopy width (cm)		Number of branches per plant		Days to 50% flowering	
			2022–23	2023–24	2022–23	2023–24	2022–23	2023–24
T <sub>1</sub>	Control		36.95±1.54 <sup>b</sup>	36.10±0.37 <sup>b</sup>	8.00±0.58 <sup>b</sup>	6.67±1.20 <sup>b</sup>	79.67 ± 0.96 <sup>a</sup>	80.61 ± 2.77 <sup>a</sup>
T <sub>2</sub>	KI	Soil application	39.67±2.51 <sup>ab</sup>	39.90±2.89 <sup>ab</sup>	10.67±0.88 <sup>ab</sup>	10.33±1.86 <sup>ab</sup>	75.65 ± 2.21 <sup>ab</sup>	75.75 ± 1.53 <sup>ab</sup>
T <sub>3</sub>	KIO <sub>3</sub>	Soil application	39.77±2.82 <sup>ab</sup>	40.16±1.85 <sup>ab</sup>	12.00±2.00 <sup>ab</sup>	12.33±0.88 <sup>a</sup>	75.51 ± 0.73 <sup>ab</sup>	75.57 ± 3.61 <sup>ab</sup>
T <sub>4</sub>	KI	Foliar application	45.33±4.63 <sup>a</sup>	45.29±3.25 <sup>a</sup>	12.00±0.58 <sup>ab</sup>	11.00±1.00 <sup>a</sup>	70.82 ± 1.93 <sup>cd</sup>	70.04 ± 2.42 <sup>bc</sup>
T <sub>5</sub>	KIO <sub>3</sub>	Foliar application	45.06±1.67 <sup>ab</sup>	44.62±1.23 <sup>a</sup>	13.00±2.00 <sup>a</sup>	11.33±1.20 <sup>a</sup>	71.55 ± 1.56 <sup>bcd</sup>	70.06 ± 3.11 <sup>bc</sup>
T <sub>6</sub>	KI	Seed priming	40.13±1.97 <sup>ab</sup>	40.91±1.80 <sup>ab</sup>	11.67±1.86 <sup>ab</sup>	10.33±0.33 <sup>ab</sup>	74.49 ± 2.77 <sup>bc</sup>	74.37 ± 2.00 <sup>bc</sup>
T <sub>7</sub>	KIO <sub>3</sub>	Seed priming	40.01±3.29 <sup>ab</sup>	40.31±2.00 <sup>ab</sup>	12.33±0.88 <sup>ab</sup>	9.67±0.88 <sup>ab</sup>	75.10 ± 0.93 <sup>bc</sup>	75.00 ± 3.35 <sup>bab</sup>
T <sub>8</sub>	KI	SP+SA+FA	45.92±2.33 <sup>a</sup>	45.35±2.66 <sup>a</sup>	13.67±0.67 <sup>a</sup>	10.67±2.19 <sup>ab</sup>	69.84 ± 1.75 <sup>d</sup>	69.88 ± 2.73 <sup>c</sup>
T <sub>9</sub>	KIO <sub>3</sub>	SP+SA+FA	42.50±2.50 <sup>ab</sup>	42.72±4.37 <sup>ab</sup>	11.67±2.33 <sup>ab</sup>	10.67±0.88 <sup>ab</sup>	73.51 ± 2.11 <sup>bcd</sup>	72.55 ± 0.38 <sup>bc</sup>
LSD ( $p \leq 0.05$ )			8.24	6.89	4.35	4.02	4.54	7.41
CV (%)			7.92	7.44	13.01	15.56	3.54	5.80

SA: Soil application; SP: Seed priming; FA: Foliar application.

**Supplementary Table 3.** Influence of iodine-based applications on tomato yield performance (2022–2023 and 2023–2024)

Sl. No.	Treatment	Method of application	Total yield (qha <sup>-1</sup> )		Marketable yield (qha <sup>-1</sup> )	
			2022–23	2023–24	2022–23	2023–24
T <sub>1</sub>	Control		530.12±4.21 <sup>cd</sup>	525.30±7.99 <sup>d</sup>	439.55±3.58 <sup>d</sup>	430.54±6.95 <sup>d</sup>
T <sub>2</sub>	KI	Soil application	523.17±10.24 <sup>d</sup>	526.84±7.47 <sup>d</sup>	454.69±8.71 <sup>cd</sup>	458.35±6.50 <sup>bc</sup>
T <sub>3</sub>	KIO <sub>3</sub>	Soil application	536.01±5.77 <sup>bcd</sup>	530.91±14.72 <sup>cd</sup>	460.97±4.97 <sup>bcd</sup>	461.89±12.80 <sup>bc</sup>
T <sub>4</sub>	KI	Foliar application	558.28±11.02 <sup>ab</sup>	559.67±6.77 <sup>abc</sup>	480.12±9.48 <sup>ab</sup>	470.13±5.68 <sup>abc</sup>
T <sub>5</sub>	KIO <sub>3</sub>	Foliar application	557.21±11.66 <sup>ab</sup>	557.86±10.91 <sup>abc</sup>	479.20±10.03 <sup>ab</sup>	468.60±9.16 <sup>abc</sup>
T <sub>6</sub>	KI	Seed priming	555.83±7.14 <sup>abc</sup>	538.27±14.73 <sup>bcd</sup>	489.13±6.28 <sup>a</sup>	452.15±12.38 <sup>cd</sup>
T <sub>7</sub>	KIO <sub>3</sub>	Seed priming	547.04±7.13 <sup>abcd</sup>	533.21±13.79 <sup>cd</sup>	481.39±6.27 <sup>ab</sup>	458.56±11.86 <sup>bc</sup>
T <sub>8</sub>	KI	SP+SA+FA	563.01±5.99 <sup>a</sup>	574.58±1.29 <sup>abc</sup>	477.49±5.27 <sup>ab</sup>	481.02±1.11 <sup>ab</sup>
T <sub>9</sub>	KIO <sub>3</sub>	SP+SA+FA	561.01±9.19 <sup>ab</sup>	568.06±5.11 <sup>ab</sup>	465.64±7.62 <sup>bc</sup>	488.53±4.39 <sup>a</sup>
LSD ( $p \leq 0.05$ )			25.85	30.99	22.2	26.47
CV (%)			6.22	6.98	8.39	7.53

SA: Soil application; SP: Seed priming; FA: Foliar application.