

**Table S1.** Effect of different thinning treatments (T<sub>1</sub>: 10 mg L<sup>-1</sup> NAA; T<sub>2</sub>: 20 mg L<sup>-1</sup> NAA; T<sub>3</sub>: 100 mg L<sup>-1</sup> BA; T<sub>4</sub>: 200 mg L<sup>-1</sup> BA; T<sub>5</sub>: 100 mg L<sup>-1</sup> Metamitron; T<sub>6</sub>: 200 mg L<sup>-1</sup> Metamitron; T<sub>7</sub>: crop load of 4 fruits cm<sup>-2</sup> TC SA; T<sub>8</sub>: crop load of 6 fruits cm<sup>-2</sup> TC SA; T<sub>9</sub>: crop load of 8 fruits cm<sup>-2</sup> TC SA and T<sub>10</sub>: control - no thinning) and cultivars (C<sub>1</sub>: ‘Jeromine’; C<sub>2</sub>: ‘Redlum Gala’; C<sub>3</sub>: ‘Super Chief’) on number of fruits and yield in apple under high density plantation

Treatments	No. of fruits (after thinning)				Yield (kg/tree)			
	C <sub>1</sub>	C <sub>2</sub>	C <sub>3</sub>	Mean	C <sub>1</sub>	C <sub>2</sub>	C <sub>3</sub>	Mean
T <sub>1</sub>	83.75±4.75 <sup>J</sup>	54.55±0.69 <sup>OP</sup>	57.18±1.04 <sup>NO</sup>	65.16± 4.87 <sup>f</sup>	12.69±0.7 <sup>B</sup>	7.98±0.10 <sup>K</sup>	8.26±0.15 <sup>K</sup>	9.64±0.79 <sup>e</sup>
T <sub>2</sub>	61.41±1.55 <sup>MN</sup>	53.41±3.49 <sup>OP</sup>	57.12±1.41 <sup>NO</sup>	57.31± 1.65 <sup>g</sup>	9.42±0.24 <sup>J</sup>	7.85±0.51 <sup>K</sup>	8.42±0.20 <sup>K</sup>	8.56±0.29 <sup>f</sup>
T <sub>3</sub>	99.62±0.92 <sup>CDE</sup>	84.03±1.22 <sup>J</sup>	93.44±0.79 <sup>FG</sup>	92.36±2.32 <sup>cd</sup>	12.52±0.12 <sup>BC</sup>	10.33±0.11 <sup>F<sup>GH</sup>I</sup>	11.09±0.11 <sup>E</sup>	11.32±0.33 <sup>b</sup>
T <sub>4</sub>	99.15±0.74 <sup>CDE</sup>	83.11±1.03 <sup>J</sup>	90.60±0.58 <sup>GH</sup>	90.95 ±2.34 <sup>de</sup>	12.65±0.08 <sup>B</sup>	10.30±0.10 <sup>F<sup>GH</sup>I</sup>	10.94±0.08 <sup>EF</sup>	11.30±0.35 <sup>b</sup>
T <sub>5</sub>	106.00±1.20 <sup>B</sup>	90.12±1.47 <sup>GH</sup>	96.63±0.73 <sup>DEF</sup>	97.58± 2.35 <sup>b</sup>	12.63±0.13 <sup>B</sup>	9.93±0.22 <sup>G<sup>H</sup>I</sup> J	10.68±0.19 <sup>EF</sup>	11.08±0.41 <sup>bc</sup>
T <sub>6</sub>	103.48±0.96 <sup>BC</sup>	88.51±3.33 <sup>HI</sup>	95.28±1.58 <sup>EF</sup>	95.76± 2.30 <sup>bc</sup>	11.96±0.10 <sup>CD</sup>	9.96±0.09 <sup>G<sup>H</sup>I</sup> J	10.55±0.10 <sup>EF<sup>G</sup></sup>	10.82±0.30 <sup>bcd</sup>
T <sub>7</sub>	50.95±1.07 <sup>P</sup>	42.78±3.04 <sup>Q</sup>	44.94±1.43 <sup>Q</sup>	46.22± 1.42 <sup>h</sup>	7.95±0.18 <sup>K</sup>	6.70±0.30 <sup>L</sup>	6.79±0.25 <sup>L</sup>	7.15±0.24 <sup>g</sup>
T <sub>8</sub>	68.97±1.69 <sup>K</sup>	63.96±0.98 <sup>LM</sup>	67.96±1.29 <sup>KL</sup>	66.96± 0.99 <sup>f</sup>	10.73±0.24 <sup>EF</sup>	9.72±0.12 <sup>I<sup>J</sup></sup>	10.49±0.20 <sup>EF<sup>GH</sup></sup>	10.32±0.18 <sup>d</sup>
T <sub>9</sub>	89.80±2.14 <sup>GH</sup>	84.41±2.13 <sup>I<sup>J</sup></sup>	86.76±1.47 <sup>HI<sup>J</sup></sup>	86.99± 1.14 <sup>e</sup>	13.58±0.36 <sup>A</sup>	12.48±0.17 <sup>B<sup>CD</sup></sup>	12.65±0.38 <sup>B</sup>	12.90±0.22 <sup>a</sup>
T <sub>10</sub>	118.95±0.73 <sup>A</sup>	98.28±1.93 <sup>DE</sup>	100.45±2.06 <sup>CD</sup>	105.89± 3.35 <sup>a</sup>	11.85±0.03 <sup>D</sup>	9.79±0.20 <sup>I<sup>J</sup></sup>	9.87±0.18 <sup>HI<sup>J</sup></sup>	10.50±0.35 <sup>cd</sup>
Mean	88.20± 3.86 <sup>A</sup>	74.32± 3.31 <sup>C</sup>	79.04± 3.58 <sup>B</sup>		11.59±0.31 <sup>A</sup>	9.51±0.29 <sup>C</sup>	9.97±0.30 <sup>B</sup>	
Significance								
T		***				***		
C		***				***		
T × C		***				***		

Data represent the mean of 5 replicates ± standard error (SE). Lowercase superscripts letters in the column of the mean, uppercase superscripts letters on the line of mean and italics uppercase superscripts letters in the column and line of mean specifies statistically significant difference between the means (p≤0.05, Duncan Multiple Range Test). \* = p≤0.05; \*\* = p≤0.01; \*\*\* = p≤0.001. NS = non-significant.

**Table S2.** Effect of different thinning treatments (T<sub>1</sub>: 10 mg L<sup>-1</sup> NAA; T<sub>2</sub>: 20 mg L<sup>-1</sup> NAA; T<sub>3</sub>: 100 mg L<sup>-1</sup> BA; T<sub>4</sub>: 200 mg L<sup>-1</sup> BA; T<sub>5</sub>: 100 mg L<sup>-1</sup> Metamitron; T<sub>6</sub>: 200 mg L<sup>-1</sup> Metamitron; T<sub>7</sub>: crop load of 4 fruits cm<sup>-2</sup> TC SA; T<sub>8</sub>: crop load of 6 fruits cm<sup>-2</sup> TC SA; T<sub>9</sub>: crop load of 8 fruits cm<sup>-2</sup> TC SA and T<sub>10</sub>: control - no thinning) and cultivars (C<sub>1</sub>: ‘Jeromine’; C<sub>2</sub>: ‘Redlum Gala’; C<sub>3</sub>: ‘Super Chief’) on yield efficiency and leaf area in apple under high density plantation

Treatments	Yield efficiency [Yield(kg/tree)/cm <sup>2</sup> TC SA]				Leaf area (cm <sup>2</sup> )			
	C <sub>1</sub>	C <sub>2</sub>	C <sub>3</sub>	Mean	C <sub>1</sub>	C <sub>2</sub>	C <sub>3</sub>	Mean
T <sub>1</sub>	1.20±0.07 <sup>B</sup>	0.75±0.01 <sup>J</sup>	0.78±0.02 <sup>J</sup>	0.91±0.07 <sup>e</sup>	34.09±0.35 <sup>BCDE</sup>	29.56±0.76 <sup>KLM</sup>	32.23±1.33 <sup>EF GH</sup>	31.96±0.77 <sup>b</sup>
T <sub>2</sub>	0.89±0.02 <sup>I</sup>	0.74±0.05 <sup>J</sup>	0.79±0.02 <sup>J</sup>	0.80±0.03 <sup>f</sup>	35.16±0.89 <sup>BC</sup>	30.54±1.04 <sup>HIJK</sup>	33.23±0.80 <sup>DEFG</sup>	32.98±0.81 <sup>b</sup>
T <sub>3</sub>	1.18±0.01 <sup>BC</sup>	0.97±0.01 <sup>EF GH</sup>	1.04±0.01 <sup>D</sup>	1.06±0.03 <sup>b</sup>	33.13±1.19 <sup>DEFG</sup>	28.37±0.89 <sup>LMN</sup>	30.14±0.62 <sup>IJKL</sup>	30.55±0.83 <sup>c</sup>
T <sub>4</sub>	1.19±0.01 <sup>B</sup>	0.97±0.01 <sup>EF GH</sup>	1.03±0.01 <sup>DE</sup>	1.06±0.03 <sup>b</sup>	34.20±1.11 <sup>BCD</sup>	29.11±0.29 <sup>KLMN</sup>	32.57±0.28 <sup>DEFG</sup>	31.96±0.83 <sup>b</sup>
T <sub>5</sub>	1.19±0.01 <sup>B</sup>	0.94±0.02 <sup>FGHI</sup>	1.00±0.02 <sup>DE</sup>	1.05±0.04 <sup>bc</sup>	31.91±0.21 <sup>FGHI</sup>	27.62±0.29 <sup>NO</sup>	29.31±0.51 <sup>KLMN</sup>	29.61±0.65 <sup>c</sup>
T <sub>6</sub>	1.12±0.01 <sup>C</sup>	0.94±0.01 <sup>FGHI</sup>	0.99±0.01 <sup>DEFG</sup>	1.02±0.02 <sup>bcd</sup>	34.06±0.10 <sup>BCDE</sup>	30.22±0.61 <sup>IJKL</sup>	33.63±0.81 <sup>CDEF</sup>	32.64±0.67 <sup>b</sup>
T <sub>7</sub>	0.75±0.02 <sup>J</sup>	0.63±0.03 <sup>K</sup>	0.64±0.03 <sup>K</sup>	0.67±0.02 <sup>g</sup>	37.60±0.89 <sup>A</sup>	33.14±0.03 <sup>DEFG</sup>	35.58±0.74 <sup>B</sup>	35.44±0.73 <sup>a</sup>
T <sub>8</sub>	1.01±0.02 <sup>DE</sup>	0.91±0.01 <sup>HI</sup>	0.99±0.02 <sup>DEFG</sup>	0.97±0.01 <sup>d</sup>	35.63±0.25 <sup>B</sup>	30.03±0.64 <sup>IJKL</sup>	32.71±0.84 <sup>DEFG</sup>	32.79±0.87 <sup>b</sup>
T <sub>9</sub>	1.28±0.03 <sup>A</sup>	1.17±0.02 <sup>BC</sup>	1.19±0.02 <sup>B</sup>	1.22±0.02 <sup>a</sup>	31.50±0.35 <sup>GHIJ</sup>	27.97±0.60 <sup>MNO</sup>	29.85±0.50 <sup>JKLM</sup>	29.77±0.57 <sup>c</sup>
T <sub>10</sub>	1.12±0.01 <sup>C</sup>	0.92±0.02 <sup>HI</sup>	0.93±0.02 <sup>GHI</sup>	0.99±0.03 <sup>cd</sup>	29.41±0.29 <sup>KLMN</sup>	26.32±0.02 <sup>O</sup>	27.50±0.44 <sup>NO</sup>	27.74±0.55 <sup>d</sup>
Mean	1.09±0.03 <sup>A</sup>	0.89±0.03 <sup>C</sup>	0.94±0.03 <sup>B</sup>		33.67±0.81 <sup>A</sup>	29.29±0.69 <sup>C</sup>	31.68±0.85 <sup>B</sup>	
Significance								
T		***				***		
C		***				***		
T × C		***				NS		

Data represent the mean of 5 replicates ± standard error (SE). Lowercase superscripts letters in the column of the mean, uppercase superscripts letters on the line of mean and italics uppercase superscripts letters in the column and line of mean specifies statistically significant difference between the means (p≤0.05, Duncan Multiple Range Test). \* = p≤0.05; \*\* = p≤0.01; \*\*\* = p≤0.001. NS = non-significant.