

**Supplementary Table S1.** Vegetative phenotypes of WT and Fld-expressing transgenic tomato lines.

Data are means  $\pm$  SEM of n plants as indicated in parentheses. Statistically significant differences between Fld-expressing and WT plants are shown in bold and were determined using one-way ANOVA and Tukey's Multiple Comparison Test ( $P < 0.05$ ).

Line	Average leaves per sympodial shoot <sup>a</sup>	Internode length <sup>b</sup> (cm)	Rachis length (cm)	Stem diameter <sup>c</sup> (cm)	FW aerial part <sup>d</sup> (g per plant)	DW aerial part <sup>d</sup> (g per plant)	Aerial part H <sub>2</sub> O content <sup>e</sup> (%)
WT	3.0 $\pm$ 0.3 (12)	2.6 $\pm$ 0.1 (12)	17.9 $\pm$ 0.3 (8)	1.15 $\pm$ 0.03 (12)	153 $\pm$ 5 (18)	23.9 $\pm$ 3.2 (6)	84.2 $\pm$ 1.6 (6)
<i>Slpfld8-1</i>	2.9 $\pm$ 0.1 (12)	<b>1.8 <math>\pm</math> 0.1</b> (12)	<b>10.9 <math>\pm</math> 0.3</b> (10)	1.06 $\pm$ 0.04 (12)	<b>118 <math>\pm</math> 6</b> (19)	16.5 $\pm$ 1.1 (6)	83.7 $\pm$ 0.8 (6)
<i>Slpfld60-4</i>	2.8 $\pm$ 0.2 (12)	<b>1.8 <math>\pm</math> 0.1</b> (12)	<b>10.3 <math>\pm</math> 0.6</b> (9)	1.18 $\pm$ 0.03 (12)	<b>119 <math>\pm</math> 5</b> (20)	<b>15.0 <math>\pm</math> 0.9</b> (6)	84.5 $\pm$ 0.6 (6)
<i>Slcfld10-5</i>	2.7 $\pm$ 0.2 (12)	2.3 $\pm$ 0.1 (12)	14.9 $\pm$ 1.0 (4)	1.20 $\pm$ 0.03 (12)	159 $\pm$ 13 (11)	18.9 $\pm$ 1.9 (6)	83.2 $\pm$ 1.3 (6)

<sup>a</sup> Number of leaves between 5 consecutive sympodia.

<sup>b</sup> Mean internode length between cotyledons and the first fully expanded leaf.

<sup>c</sup> Stem diameter corresponds to that of the fifth internode.

<sup>d</sup> Weight of aerial part (leaves+stem) corresponds to plants after fruit harvest.

<sup>e</sup> Water content calculated as ((FW - DW)/FW) x 100.

**Supplementary Table S2.** Reproductive phenotypes of WT and Fld-expressing transgenic tomato lines.

Data are means  $\pm$  SEM of n plants as indicated in parentheses. Statistically significant differences between Fld-expressing and WT plants are shown in bold and were determined using one-way ANOVA and Tukey's Multiple Comparison Test ( $P < 0.05$ ).

Line	Inflorescences per plant <sup>a</sup>	Flowers per inflorescence	Fruits per plant	Fruit production (g per plant)	Days to color break <sup>b</sup>	Days to fruit ripening <sup>b</sup>	Fruit FW (g per fruit) <sup>c</sup>	Pericarp DW (g per fruit) <sup>d</sup>	Pericarp H <sub>2</sub> O content <sup>e</sup> (%)
WT	13.7 $\pm$ 1.7 (6)	5.9 $\pm$ 0.1 (12)	5.2 $\pm$ 0.4 (18)	149 $\pm$ 15 (18)	55.5 $\pm$ 1.0 (12)	63.8 $\pm$ 1.1 (12)	34 $\pm$ 3 (18)	2.65 $\pm$ 0.11 (11)	93.2 $\pm$ 0.3 (11)
<i>Slpfld8-1</i>	12.5 $\pm$ 0.7 (6)	<b>8.9 <math>\pm</math> 0.3</b> (12)	<b>8.0 <math>\pm</math> 0.5</b> (20)	173 $\pm$ 15 (20)	<b>51.0 <math>\pm</math> 1.0</b> (12)	<b>61.4 <math>\pm</math> 0.8</b> (12)	<b>25 <math>\pm</math> 1</b> (20)	2.01 $\pm$ 0.12 (11)	92.4 $\pm$ 0.5 (11)
<i>Slpfld60-4</i>	15.3 $\pm$ 0.8 (6)	<b>8.8 <math>\pm</math> 0.3</b> (12)	<b>8.6 <math>\pm</math> 0.7</b> (20)	190 $\pm$ 16 (20)	<b>50.2 <math>\pm</math> 0.8</b> (12)	<b>58.7 <math>\pm</math> 0.8</b> (12)	<b>26 <math>\pm</math> 2</b> (20)	2.05 $\pm$ 0.14 (11)	92.9 $\pm$ 0.4 (12)
<i>Slcfld10-5</i>	13.7 $\pm$ 1.4 (6)	6.3 $\pm$ 0.3 (12)	5.6 $\pm$ 0.6 (14)	155 $\pm$ 14 (15)	57.5 $\pm$ 0.8 (12)	68.9 $\pm$ 1.0 (12)	35 $\pm$ 3 (14)	2.31 $\pm$ 0.16 (11)	93.3 $\pm$ 0.3 (11)

<sup>a</sup> Total number of inflorescences (primary and secondary).

<sup>b</sup> Days to color break and ripening are counted from the anthesis of individual flowers ( $n > 50$ ).

<sup>c</sup> Calculated using all the red ripe fruits from each plant ( $n > 4$ ).

<sup>d</sup> Calculated using all the red ripe fruits from each plant ( $n > 4$ ) after removal of pulp and seeds.

<sup>e</sup> Water content calculated as ((FW - DW)/FW) x 100.

**Supplementary Table S3.** Metabolite levels in ripe red fruits of WT, *Slpfl*d and *Slcfl*d plants. Extracts were prepared from the first two ripe red fruit from at least 3 different plants of every line, and metabolite contents were determined as described in Materials and Methods. Values for each compound are expressed in  $\mu\text{mol g}^{-1}$  FW and are presented as means  $\pm$  SEM. Evaluation of the statistical significance of differences for metabolite contents was performed using ANOVA followed by Fisher's multiple comparison tests. Means with the same letter are not significantly different from each other at  $P < 0.05$ .

Metabolite level ( $\mu\text{mol g}^{-1}$ FW)	WT	<i>Slpfl</i> d8-1	<i>Slpfl</i> d60-4	<i>Slcfl</i> d10-5
Sucrose	$3.68 \pm 1.0^b$	$1.67 \pm 0.3^{ab}$	$1.06 \pm 0.3^a$	$2.77 \pm 0.7^b$
Fructose	$412.02 \pm 15.5^a$	$645.11 \pm 37.3^c$	$623.59 \pm 82.7^{bc}$	$453.61 \pm 85.5^{ab}$
Glucose	$521.46 \pm 23.5^a$	$813.22 \pm 48.6^b$	$693.83 \pm 87.4^{ab}$	$552.80 \pm 117.2^a$
Galactose	$19.71 \pm 2.0^a$	$24.03 \pm 6.8^a$	$22.67 \pm 6.2^a$	$17.37 \pm 3.2^a$
Xylose	$3.39 \pm 2.0^a$	$3.88 \pm 0.9^a$	$4.37 \pm 2.1^a$	$5.34 \pm 2.3^a$
Mannose	$18.58 \pm 0.7^a$	$23.25 \pm 3.3^a$	$20.67 \pm 3.3^a$	$16.74 \pm 1.7^a$
Citrate	$55.47 \pm 1.7^a$	$116.09 \pm 5.7^b$	$100.24 \pm 28.8^{ab}$	$54.51 \pm 10.2^a$
Malate	$57.89 \pm 3.8^a$	$116.62 \pm 21.8^b$	$99.62 \pm 21.7^{ab}$	$79.79 \pm 19.9^{ab}$
Fumarate	$2.30 \pm 0.5^a$	$3.75 \pm 0.6^a$	$2.19 \pm 0.2^a$	$2.39 \pm 0.5^a$
Succinate	$8.41 \pm 0.2^{ab}$	$16.64 \pm 3.7^b$	$15.21 \pm 4.4^{ab}$	$7.76 \pm 1.7^a$
Pyruvate	$16.66 \pm 0.3^a$	$35.78 \pm 6.8^b$	$31.24 \pm 8.9^{ab}$	$16.78 \pm 2.6^a$
$\alpha$ -ketoglutarate	$13.46 \pm 1.7^a$	$15.20 \pm 0.8^a$	$20.49 \pm 9.5^a$	$14.65 \pm 3.1^a$
$\gamma$ -aminobutyrate	$15.03 \pm 2.1^a$	$36.96 \pm 0.8^b$	$27.34 \pm 7.9^{ab}$	$21.04 \pm 5.9^{ab}$
Alanine	$1.11 \pm 0.0^a$	$1.59 \pm 0.2^a$	$1.48 \pm 0.4^a$	$1.03 \pm 0.0^a$
Asparagine	$5.10 \pm 0.18^a$	$4.95 \pm 0.8^a$	$4.99 \pm 1.8^a$	$7.90 \pm 3.9^a$
Aspartate	$18.09 \pm 5.4^a$	$27.21 \pm 12.2^a$	$35.58 \pm 26.7^a$	$13.49 \pm 2.6^a$
Glutamate	$22.15 \pm 0.6^a$	$29.69 \pm 2.9^a$	$37.43 \pm 17.6^a$	$24.65 \pm 4.7^a$
Glutamine	$23.31 \pm 0.7^a$	$24.31 \pm 1.0^a$	$28.82 \pm 12.4^a$	$19.38 \pm 3.0^a$
Isoleucine	$0.80 \pm 0.1^a$	$0.99 \pm 0.1^a$	$1.05 \pm 0.3^a$	$0.72 \pm 0.1^a$
Tyrosine	$9.46 \pm 1.0^a$	$9.08 \pm 0.1^a$	$8.42 \pm 2.2^a$	$7.08 \pm 1.4^a$
Phenylalanine	$1.67 \pm 0.2^a$	$2.99 \pm 0.6^a$	$2.49 \pm 0.7^a$	$2.48 \pm 1.2^a$
Threonine	$1.27 \pm 0.1^a$	$1.44 \pm 0.1^a$	$1.49 \pm 0.4^a$	$1.53 \pm 0.3^a$
Tryptophan	$0.60 \pm 0.1^a$	$0.73 \pm 0.1^a$	$0.71 \pm 0.3^a$	$0.46 \pm 0.1^a$
Valine	$0.56 \pm 0.0^a$	$0.62 \pm 0.1^a$	$0.67 \pm 0.2^a$	$0.54 \pm 0.1^a$
<i>Trans</i> -cinnamate	$5.78 \pm 0.8^a$	$17.35 \pm 2.5^b$	$6.24 \pm 1.7^a$	$5.90 \pm 0.4^a$