

# Supplementary Materials: Biostimulatory Action of Vegetal Protein Hydrolysate and the Configuration of Fruit Physicochemical Characteristics in Grafted Watermelon

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**Table S1.** Timetable of the experiment.

Date	2020/5/5	2020/6/6	2020/6/16	2020/6/26	2020/7/6	2020/7/16	2020/7/26
Action	Plants transplantation	Crop fruit setting	Harvest 10dpa	Harvest 20dpa	Harvest 30dpa	Harvest 40dpa	Harvest 50dpa

**Table S2.** Mean comparisons for pulp firmness, fruit rind, flesh CIELAB color components and lycopene content of watermelon cv. Obla harvested at 10, 20, 30, 40 and 50 days post-anthesis with (PH) or without (Control) protein hydrolysate biostimulant application.

Source of variance	Firmness (kg-force)	Rind (mm)	L* (0–100)	C* $\sqrt{(a^{*2} + b^{*2})}$	h° (0–360°)	a* (0–60)	Lycopene ( $\mu\text{g g}^{-1}$ f.w.)
Control 10	5.07 ± 0.2 a	5.06 ± 0.54 b	76.16 ± 0.58 a	8.94 ± 0.47 d	103.12 ± 0.34 a	−2.02 ± 0.12 d	0.23 ± 0.12 e
20	4.84 ± 0.18 a	10.59 ± 0.78 a	54.74 ± 0.8 b	19.93 ± 1.00 c	35.07 ± 1.39 b	16.36 ± 1.03 c	22.09 ± 2.34 d
30	3.72 ± 0.18 b	10.69 ± 0.51 a	46.69 ± 0.84 c	32.12 ± 0.55 b	32.29 ± 0.45 c	27.11 ± 0.34 b	59.21 ± 0.78 c
40	3.52 ± 0.19 b	10.52 ± 0.42 a	41.96 ± 0.99 d	36.61 ± 1.17 a	31.51 ± 0.70 c	31.12 ± 0.77 a	92.46 ± 1.75 a
50	3.44 ± 0.33 b	10.45 ± 0.77 a	42.11 ± 0.95 d	34.64 ± 0.87 a	32.91 ± 0.38 bc	29.05 ± 0.62 a	79.06 ± 4.21 b
Trainer 10	4.74 ± 0.09 a	4.03 ± 0.03 b	78.67 ± 0.55 a	8.32 ± 0.30 d	103 ± 0.41 a	−1.86 ± 0.07 d	0.3 ± 0.09 e
20	4.6 ± 0.09 a	9.73 ± 0.53 a	54.67 ± 1.12 b	21.17 ± 0.90 c	34.52 ± 1.47 b	17.4 ± 0.94 c	24.77 ± 2.01 d
30	3.58 ± 0.2 b	11.99 ± 0.29 a	45.21 ± 0.92 c	30.60 ± 0.95 b	31.77 ± 0.32 c	26 ± 0.75 b	52.72 ± 1.95 c
40	3.32 ± 0.11 b	10.84 ± 0.66 a	42.86 ± 0.88 d	36.09 ± 0.35 a	32.37 ± 0.66 c	30.45 ± 0.46 a	83.44 ± 3.99 a

50	3.3 ± 0.37	b	11.13 ± 1.3	a	43.17 ± 1.99	d	35.41 ± 1.15	a	33.13 ± 0.36	bc	29.58 ± 1.04	a	73.76 ± 4.27	b
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\*\*\* significant effect at the 0.001 level. Values within columns followed by the same letter are not significantly different according to Tukey-Kramer HSD Test ( $P < 0.05$ ).

**Table S3.** Mean comparisons for fruit content in soluble solids (SSC), glucose, fructose, sucrose, total soluble carbohydrates, sweetness index and titratable acidity (TA) obtained from watermelon cv. Obla harvested at 10, 20, 30, 40 and 50 days post-anthesis with (PH) or without (Control) protein hydrolysate biostimulant application.

Source of variance	SSC (%)		Fructose (µg ml <sup>-1</sup> )		Glucose (µg ml <sup>-1</sup> )		Sucrose (µg ml <sup>-1</sup> )		Total Sugars (µg ml <sup>-1</sup> )		Sweetness Index		TA (%) )		
Control	10	5.06 ± 0.25	c	19.17 ± 1.23	d	17.14 ± 1.23	d	0.01 ± 0.01	d	36.31 ± 2.44	c	417.57 ± 27.44	d	0.19 ± 0.01	b
	20	9.89 ± 0.31	b	39.96 ± 0.86	a	34.27 ± 0.91	a	4.91 ± 1.11	d	79.15 ± 2.61	b	909.85 ± 28.35	c	0.20 ± 0.01	a
	30	12.54 ± 0.19	a	38.55 ± 0.87	a	29.61 ± 1.27	b	33.64 ± 2.5	c	101.8 ± 1.34	a	1143.38 ± 10.43	a	0.15 ± 0.01	bc
	40	13.07 ± 0.33	a	29.42 ± 0.79	b	23.25 ± 1.29	c	53.36 ± 2.66	b	106.03 ± 1.45	a	1153.86 ± 14.84	a	0.13 ± 0.01	c
	50	12.21 ± 0.16	a	23.99 ± 0.58	c	18.13 ± 0.80	d	56.33 ± 2.01	a	98.45 ± 1.74	a	1063.45 ± 17.75	b	0.15 ± 0.01	bc
Trainer	10	4.84 ± 0.24	c	17.15 ± 1.32	d	15.42 ± 1.26	d	0.01 ± 0.01	d	32.58 ± 2.58	c	374.35 ± 29.28	d	0.16 ± 0.01	b
	20	10.09 ± 0.27	b	40.88 ± 0.79	a	35.89 ± 0.89	a	4.41 ± 0.86	d	81.18 ± 2.01	b	930.22 ± 21.80	c	0.20 ± 0.01	a
	30	12.20 ± 0.30	a	42.13 ± 1.34	a	33.08 ± 0.84	b	24.41 ± 2.58	c	99.63 ± 2.27	a	1131.01 ± 22.92	a	0.18 ± 0.01	b
	40	12.79 ± 0.18	a	30.10 ± 0.70	b	23.76 ± 0.41	c	49.78 ± 2.02	b	103.65 ± 1.57	a	1132.37 ± 14.27	a	0.14 ± 0.01	c
	50	12.72 ± 0.12	a	23.14 ± 1.32	c	16.79 ± 1.00	d	59.24 ± 2.86	a	99.17 ± 0.64	a	1070.25 ± 2.30	b	0.15 ± 0.01	bc
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\*\*\* significant effect at the 0.001 level. Values within columns followed by the same letter are not significantly different according to Tukey-Kramer HSD Test ( $P < 0.05$ ).

**Table S4.** Mean comparisons for fruit content in K, Mg, Ca, P and dry matter (DM) obtained from watermelon cv. Obla harvested at 10, 20, 30, 40 and 50 days post-anthesis with (PH) or without (Control) protein hydrolysate biostimulant application.

Source of variance	K (g/kg d.m.)		Mg (g/kg d.m.)		Ca (g/kg d.m.)		P (g/kg d.m.)		DM (%)	
Control 10	18.05 ± 1.91	a	1.17 ± 0.11	b	1.46 ± 0.08	a	0.95 ± 0.07	b	5.11 ± 0.35	c
20	14.90 ± 0.57	b	1.56 ± 0.06	a	1.04 ± 0.07	b	1.85 ± 0.11	a	9.36 ± 0.29	b
30	13.23 ± 0.43	c	1.54 ± 0.02	a	0.69 ± 0.05	bc	1.84 ± 0.08	a	12.2 ± 0.15	a

40	13.96 ± 0.73	bc	1.52 ± 0.05	a	0.57 ± 0.05	c	1.88 ± 0.13	a	12.59 ± 0.17	a
50	13.94 ± 0.65	bc	1.62 ± 0.07	a	0.63 ± 0.08	c	1.91 ± 0.10	a	11.94 ± 0.29	a
Trainer 10	22.23 ± 0.75	a	1.38 ± 0.11	b	2.02 ± 0.25	a	1.11 ± 0.10	b	7.91 ± 3.28	c
20	15.04 ± 0.33	b	1.49 ± 0.07	a	0.98 ± 0.10	b	1.56 ± 0.09	a	9.73 ± 0.23	b
30	12.18 ± 0.49	c	1.55 ± 0.03	a	0.76 ± 0.07	bc	1.49 ± 0.06	a	12.11 ± 0.39	a
40	14.73 ± 0.30	bc	1.61 ± 0.05	a	0.61 ± 0.04	c	1.99 ± 0.08	a	12.49 ± 0.23	a
50	13.39 ± 0.11	bc	1.60 ± 0.05	a	0.64 ± 0.06	c	1.73 ± 0.07	a	12.45 ± 0.31	a
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