



Tomatoes – Chile – Prodesal Los Angeles – 2023



Overview

- Goal: To test and quantify the possible effects of Kyminasi® Crop Booster™ (KCB) technology on growing tomatoes in Chile.
- Researcher: Fernando Rrene Rioseco Urrutia, Program Coordinator
- Institute: PRODESAL (Spanish: Programa de Desarrollo Local; English: Local Development Program), a Chilean government program focused on rural development and support for small farmers.
- Report Date: 2024

Time

- Planting Date: October 10 to October 15, 2023
- Harvest Date: December – January 2024
- Crop Booster Installation Date: December 24, 2023

Location

- Farmer: Lucila Maureira Cifuentes
- Location: Las Violitas Sector; coordinates -37.468047, -72.436802
- Country: Chile
- Treated Area: 1,700 m²
- Separation zone: to best of knowledge, no separation was set up, see picture →
- Plant distancing within the row: 10 cm
- Distance between rows: 57 cm
- Soil type: Trumao, which is a type of Andosol, a soil order found in central and southern Chile that is formed from young, porous volcanic ash.



Species

- Crop: Tomatoes in open air
- Variety: Malloa (grown in this area for Italian sauce)

Irrigation

- Type: drip irrigation
- Pipe Diameter: 32mm
- Water Flow Rate: 50 L/min (13 GPM)



Trial Details

- The trial was set up by representative Jean Carrillo (upper photo).
- Partial data has been obtained and organized the Rep, then the raw data was provided to Harvest Harmonics’ Science Team by Mr. Fernando Rioseco.



Results

- As can be seen in the table below, plant development and fruit development parameters were mostly positive. At final harvest time, **KCB plants were 21% taller** than Control and produced tomatoes that were **14% longer** (but 8% smaller in diameter).
- Yield weights were not reported. However, it can be seen from the data below that **KCB plants started fruiting earlier**, and in total produced **10% more tomatoes than Control**.



Date	Parameters	KCB				Control				Avg. GAIN
		Row 1 Plant 1	Row 1 Plant 2	Row 2 Plant 1	Row 2 Plant 2	Row 1 Plant 1	Row 1 Plant 2	Row 2 Plant 1	Row 2 Plant 2	
24 Dec 2023	Plant Height (cm)	40	29	35	38	36	33	40	38	-3%
	Number of fruits									
	Fruit Diameter									
	Fruit Length									
3 Jan 2024	Plant Height (cm)	65	43	40	59	39	40	50	49	+16%
	Number of fruits									
	Fruit Diameter									
	Fruit Length									
9 Jan 2024	Plant Height (cm)	74	53	56	60	53	60	60	63	+3%
	Number of fruits	6	2	3	3	0	0	0	0	
	Fruit Diameter	9.5	6.3	6	0	0	0	0	0	
	Fruit Length	7.5	4	4.5	0	0	0	0	0	
16 Jan 2024	Plant Height (cm)	90	63	70	80	68	70	58	75	+12%
	Number of fruits	25	6	3	8	4	16	10	6	+17%
	Fruit Diameter	10.5	8	8	9	6	10	10.5	10.5	-4%
	Fruit Length	9.5	6.5	6	5	4	8	5	7	+13%

Date	Parameters	KCB				Control				Avg. GAIN
		Row 1 Plant 1	Row 1 Plant 2	Row 2 Plant 1	Row 2 Plant 2	Row 1 Plant 1	Row 1 Plant 2	Row 2 Plant 1	Row 2 Plant 2	
23 Jan 2024	Plant Height (cm)	76	73	65	83	80	72	58	87	0%
	Number of fruits	42	21	16	23	23	31	14	19	+17%
	Fruit Diameter	11	12	12	11	10	12.5	13	10.5	0%
	Fruit Length	9	10	7	6	6.5	9	6	6	+16%
1 Feb 2024	Plant Height (cm)	70	65	70	67	63	50	40	63	+26%
	Number of fruits	66	27	37	22	21	54	19	38	+15%
	Fruit Diameter	14	14.2	14	12.5	13.2	11	15	16	-1%
	Fruit Length	10	13	7.5	8	9.5	15	7	9.5	-6%
6 Feb 2024	Plant Height (cm)	71	80	72	50	52	80	47	57	+16%
	Number of fruits	77	33	31	30	33	67	29	39	2%
	Fruit Diameter	14	15	15	13	14	15.5	15	16.5	-7%
	Fruit Length	11	13	8	8	9.5	11	7	9.5	+8%
13 Feb 2024	Plant Height (cm)	52	85	48	32	46	40	51	43	+21%
	Number of fruits	56	31	41	34	28	67	30	36	1%
	Fruit Diameter	13	17	14	14	13	16	16	18	-8%
	Fruit Length	10	14	9	9	8	11	7	11	+14%
Total number of fruits per row		272	120	131	120	109	235	102	138	+10%



Conclusions & Recommendations

- In the absence of yield and soil data, it can only be hypothesized that the absence of separation between KCB and Control had caused a deterioration in difference between the two treatments.
- There is not enough data on the growing conditions to fully analyze the results, e.g., soil moisture, visible indicators such as yellowing leaves, or pest count. Also, yield data is mostly absent from the reports we have received (see Appendix below).
- To quickly optimize this crop for optimal profits, we highly recommend running our POPS program (Profitability Optimization Protocol for Sustainability) to find the optimal “sweet spot” of input reductions and top ROI – in a single season.

This will enable analysis of the sustainability aspects of growing Malloa tomatoes in Chile. The complete protocol is available upon demand from science@harvestharmonics.com



