



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

- Installation Date: December 19, 2023
- Last Cutting Date: January 16, 2024

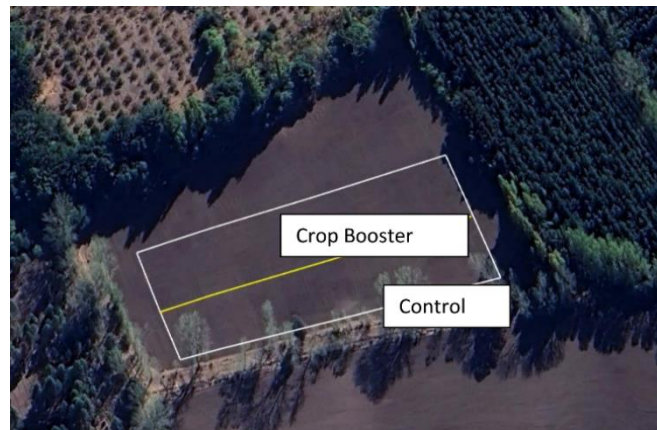
Location

- Farm: Daniel Pavez Matamala, La Higuera Farm →
- Country: Chile
- Treated Area: 1 ha
- Separation zone: none, see map →
- Distance between rows: 1 m



Species

- Crop: Tomatoes in open air
- Varieties:
 - 1) Margarita (Daisy)
 - 2) Colonos (Settlers)
 - 3) BT3
 - 4) Lautaro



Irrigation

- Type: drip irrigation, 50 mm PVC pipe
- Water flow rate: 150 L/min. (40 GPM)
- Schedule: not reported

Trial Details

- The trial was set up by representative Jean Carillo. Partial data has been obtained and organized, and then the raw data was provided to Harvest Harmonics' Science Team by Fernando Rioseco.
- Yield results were not provided by the researcher (see Attachment-A).
- The results, as can be seen in the attached raw data, were inconsistent. Two varieties were winning with KCB and two varieties were losing in total **number** of tomatoes produced.
- The numbers below are the results in number of tomatoes picked from the **Daisy variety** rows, where KCB-irrigated plants produced a **total of 11% higher number of tomatoes** than Control. ***In the last two cuttings, this variety also produced much taller plants – as well as significantly greater number of tomatoes that were also much larger in diameter:***

Date	Parameters	Daisy Variety						GAIN
		WITH CROP BOOSTER			WITHOUT CROP BOOSTER			
		Row 3 Floor 1	Row 3 Floor 2	Sub- Total	Row 3 Floor 3	Row 3 Floor 4	Sub- Total	
19 Dec. 2023	Plant Height (cm)	74	63	137	63	63	126	9%
	Number of fruits			0			0	
	Fruit Diameter			0			0	
27 Dec. 2023	Plant Height (cm)	77	77	154	44	63	107	44%
	Number of fruits	9	11	20	13	9	22	-9%
	Fruit Diameter	18	20	38	19	20	39	-3%
2 Jan. 2024	Plant Height (cm)	95	77	172	49	75	124	39%
	Number of fruits	19	11	30	14	17	31	-3%
	Fruit Diameter	24	21	45	21	23	44	2%
9 Jan. 2024	Plant Height (cm)	96	84	180	40	80	120	50%
	Number of fruits	21	28	49	16	22	38	29%
	Fruit Diameter	28	28	56	26	25.5	51.5	9%
16 Jan. 2024	Plant Height (cm)	93	87	180	40	80	120	50%
	Number of fruits	21	29	50	17	26	43	16%
	Fruit Diameter	31	30	61	27	26	53	15%
	TOTAL Number of fruits per Row	70	79		60	74		11%

- The numbers below are the results in number of tomatoes picked from the **Colonos (Settlers) variety** rows, where KCB-irrigated plants produced a **total of 14% higher number of tomatoes** than Control; however, fruit size was smaller in all cuttings:

Date	Parameters	Settlers Variety						GAIN
		WITH CROP BOOSTER			WITHOUT CROP BOOSTER			
		Row 10 Floor 1	Row 10 Floor 2	Sub-Total	Row 10 Floor 3	Row 10 Floor 4	Sub-Total	
19 Dec. 2023	Plant Height (cm)	58	60	118	56	52	108	9%
	Number of fruits			0			0	
	Fruit Diameter			0			0	
27 Dec. 2023	Plant Height (cm)	63	67	130	62	52	114	14%
	Number of fruits	13	13	26	17	11	28	-7%
	Fruit Diameter	18	20	38	24	20	44	-14%
2 Jan. 2024	Plant Height (cm)	73	65	138	66	55	121	14%
	Number of fruits	19	18	37	18	18	36	3%
	Fruit Diameter	24	21	45	27	23	50	-10%
9 Jan. 2024	Plant Height (cm)	74	70	144	74	66	140	3%
	Number of fruits	30	32	62	24	26	50	24%
	Fruit Diameter	23	23	46	30	26	56	-18%
16 Jan. 2024	Plant Height (cm)	72	59	131	73	63	136	-4%
	Number of fruits	35	34	69	25	31	56	23%
	Fruit Diameter	25	24.5	49.5	30	27	57	-13%
	TOTAL Number of fruits per Row	97	97		84	86		14%

- The numbers below are the results for tomatoes picked from the **BT3 variety** rows, where KCB-irrigated plants produced mostly negative results:

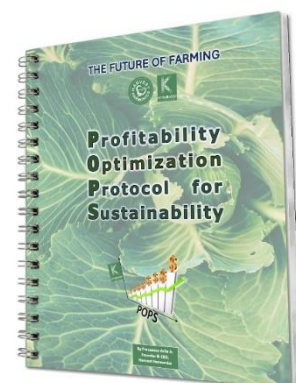
Date	Parameters	BT3 Variety						GAIN
		WITH CROP BOOSTER			WITHOUT CROP BOOSTER			
		Row 17 Floor 1	Row 17 Floor 2	Sub-Total	Row 17 Floor 3	Row 17 Floor 4	Sub-Total	
19 Dec. 2023	Plant Height (cm)	73	65	138	60	70	130	6%
	Number of fruits			0			0	
	Fruit Diameter			0			0	
27 Dec. 2023	Plant Height (cm)	78	80	158	73	84	157	1%
	Number of fruits	8	9	17	12	8	20	-15%
	Fruit Diameter	14	21	35	18	18	36	-3%
2 Jan. 2024	Plant Height (cm)	83	65	148	77	66	143	3%
	Number of fruits	17	14	31	18	15	33	-6%
	Fruit Diameter	20	21	41	21	24	45	-9%
9 Jan. 2024	Plant Height (cm)	98	106	204	86	100	186	10%
	Number of fruits	23	21	44	27	30	57	-23%
	Fruit Diameter	26.5	23.5	50	24	27.5	51.5	-3%
16 Jan. 2024	Plant Height (cm)	92	108	200	90	112	202	-1%
	Number of fruits	23	23	46	30	45	75	-39%
	Fruit Diameter	28	26.5	54.5	26	27.5	53.5	2%
	TOTAL Number of fruits per Row	71	67		87	98		-25%

- The results below are for tomatoes picked from the **Lautaro variety** rows, where results were inconsistent and ended up in insignificant overall difference between KCB and Control:

Date	Parameters	Lautaro Variety						GAIN
		WITH CROP BOOSTER			WITHOUT CROP BOOSTER			
		Row 26 Floor 1	Row 26 Floor 2	Sub-Total	Row 26 Floor 3	Row 26 Floor 4	Sub-Total	
19 Dec. 2023	Plant Height (cm)	73	70	143	65	64	129	11%
	Number of fruits			0			0	
	Fruit Diameter			0			0	
27 Dec. 2023	Plant Height (cm)	75	77	152	84	72	156	-3%
	Number of fruits	9	16	25	8	11	19	32%
	Fruit Diameter	24	25	49	21	18	39	26%
2 Jan. 2024	Plant Height (cm)	86	70	156	84	83	167	-7%
	Number of fruits	18	17	35	14	17	31	13%
	Fruit Diameter	28	19	47	25	22	47	0%
9 Jan. 2024	Plant Height (cm)	83	84	167	86	80	166	1%
	Number of fruits	20	17	37	22	21	43	-14%
	Fruit Diameter	31.5	24.5	56	27	24	51	10%
16 Jan. 2024	Plant Height (cm)	84	82	166	84	83	167	-1%
	Number of fruits	18	23	41	21	21	42	-2%
	Fruit Diameter	32	27	59	27	27.2	54.2	9%
	TOTAL Number of fruits per Row	65	73		65	70		2%

Conclusions & Recommendations

- There is not enough data on the growing conditions and yields to fully analyze the results. However, since significantly positive results were obtained in the Daisy (Margarita) variety in similar soil, we recommend repeating this quad-variety trial with tighter control and proper trialing protocols.
- 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 tomatoes in Chile. The complete protocol is available upon demand from science@harvestharmonics.com



Attachment-A: Yield Data

As provided.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Date	Fruit No.	Row 3 Floor 1	Row 3 Floor 2	Row 3 Floor 3	Row 3 Floor 4	Row 10 Floor 1	Row 10 Floor 2	Row 10 Floor 3	Row 10 Floor 4	Row 17 Floor 1	Row 17 Floor 2	Row 17 Floor 3	Row 17 Floor 4	Row 26 Floor 1	Row 26 Floor 2	Row 26 Floor 3	Row 26 Floor 4
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