

BIOAKTIV

use in tomato production in South Africa

ZZ2 is a world leader in tomato production



Moekets, Südafrika



ZZ2® & BIOAKTIV



ZZ2 is a farming conglomerate operating in Mooketsi, Politsi, Polokwane and Musina in the Limpopo Province, Ceres and Riebeeck-Wes in the Western Cape and Langkloof in the Eastern Cape of South Africa.

ZZ2 produces tomatoes, onions, avocados, apples, pears and beef. Tomatoes are the main crop with in the region of 160 000 tonnes being produced annually. ZZ2 is a world leader in tomato production and large scale biological farming practices. Natuurboerdery® is the name given by ZZ2 to this agricultural approach.

ZZ2 is a well known brand all over South Africa and has a proud heritage in agriculture. Its produce is sold nationally and also abroad, chiefly in Canada, Russia and Europe.



In October 2008, a meeting was held at ZZ2's headquarters with representatives of BioAktiv to discuss trials in which BioAktiv for plants was used in an effort to boost the tomato harvest. Following the trials' successful outcome, ZZ2 now uses BioAktiv continuously throughout its production.





Natuurboerdery® Use of BioAktiv for plants by tomatoes

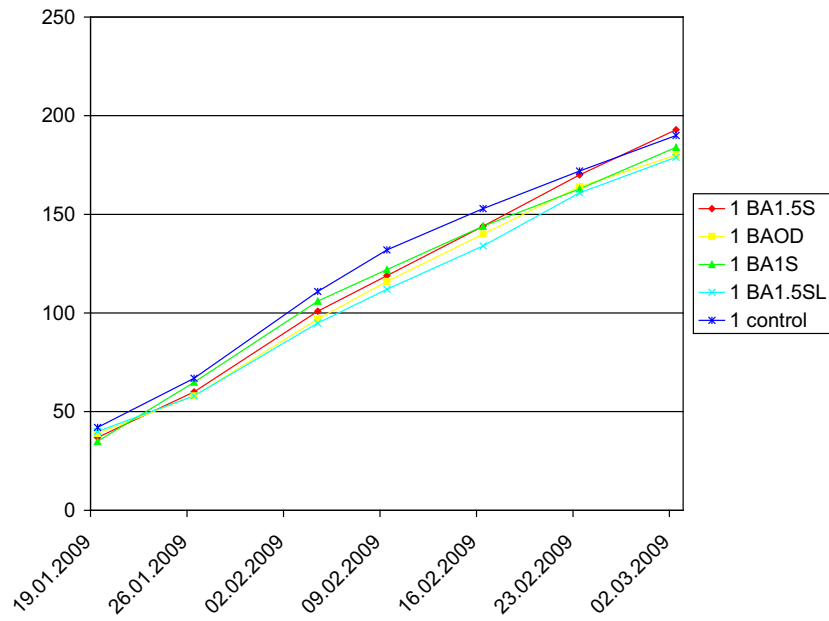
Conducted by Bertus Venter 2009

Melba – Trail Layout

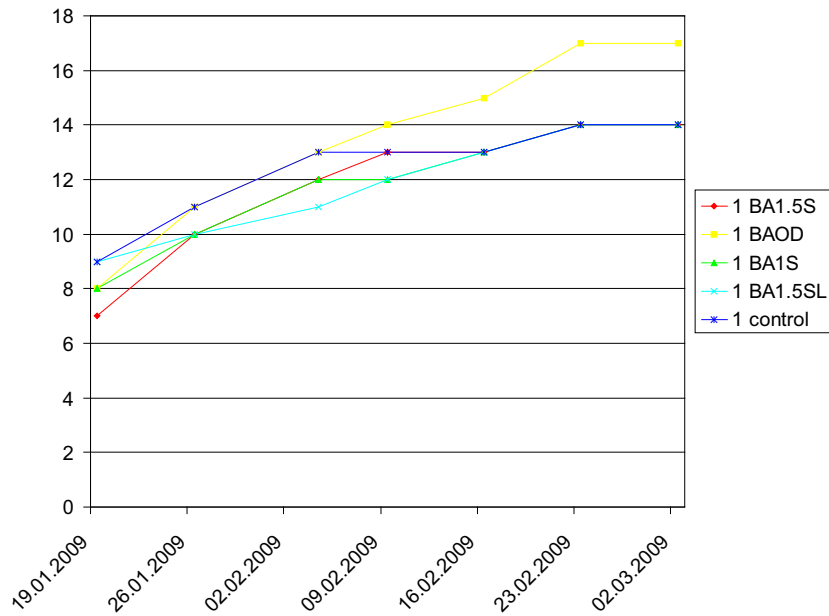
BAO.5S:	BioAktiv 2 (BA2, 0,5 kg every two weeks)
BA1S:	BioAktiv 1 (BA1, 1 kg every four weeks)
BAOD:	BioAktiv 5 (BA3, 5 kg every two weeks)
BAO.5SL:	BioAktiv 4 (BA7, alternate on two weekly basis, spray BioAktiv 500g, drip BioAktiv 500g)
Kontrolle:	ZZ2 standard program

Plant properties										
			19.Jan	26.Jan	4. Feb	9.Feb	16. Feb	23. Feb	2. März	2. März
1	BAO.5S	BAO.5S	37	60	101	119	144	170	193	Plant height
1	BOAD	BOAD	39	58	97	116	140	164	180	
1	BA1S	BA1S	35	65	106	122	144	163	184	
1	BAO.5SL	BA1.5SL	40	58	95	112	134	161	179	
1	Kontrolle	Kontrolle	42	67	111	132	153	172	190	
1	BAO.5S	BAO.5S	7	10	12	13	13	14	14	steam diameter
1	BOAD	BOAD	8	11	13	14	15	17	17	
1	BA1S	BA1S	8	10	12	12	13	14	14	
1	BAO.5SL	BA1.5SL	9	10	11	12	13	14	14	
1	Kontrolle	Kontrolle	9	11	13	13	13	14	14	
1	BAO.5S	BAO.5S	3	10	15	15	18	20	27	Nr. of flowers
1	BOAD	BOAD	3	8	16	26	22	29	41	
1	BA1S	BA1S	1	7	1	13	17	27	38	
1	BAO.5SL	BA1.5SL	5	5	7	12	20	29	39	
1	Kontrolle	Kontrolle	5	9	15	18	29	38	43	
1	BAO.5S	BAO.5S	0	2	4	5	8	10	15	No. of Cluster
1	BOAD	BOAD	1	2	4	6	9	12	16	
1	BA1S	BA1S	0	2	4	5	9	12	17	
1	BAO.5SL	BA1.5SL	1	1	3	5	7	10	14	
1	Kontrolle	Kontrolle	1	2	4	6	10	14	18	
1	BAO.5S	BAO.5S	0	1	8	11	16	26	34	No. of Fruits
1	BOAD	BOAD	0	0	6	11	23	36	44	
1	BA1S	BA1S	0	0	5	7	12	29	34	
1	BAO.5SL	BA1.5SL	0	0	2	4	8	20	26	
1	Kontrolle	Kontrolle	0	1	8	13	19	30	40	

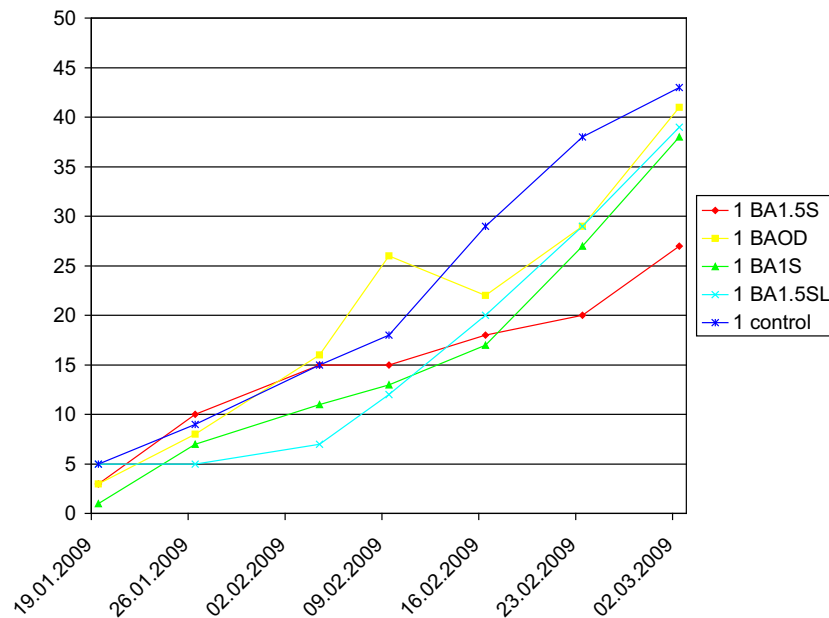
Plant height



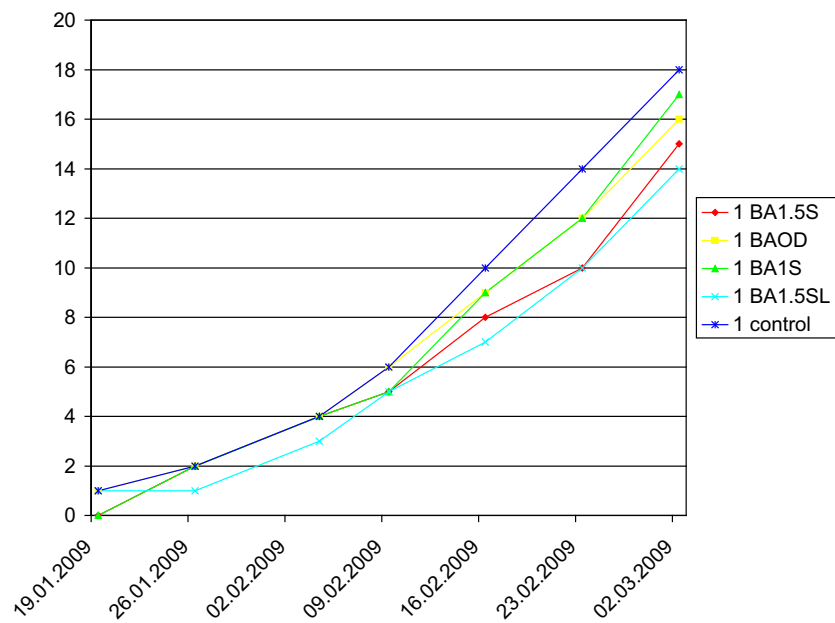
Stem diameter



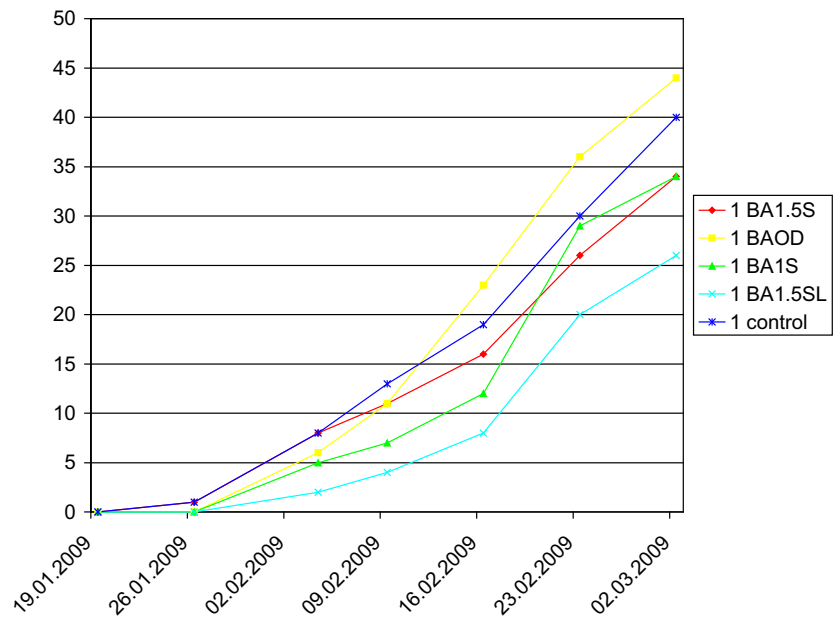
No. of Flower



No. of Cluster



No. of Fruit

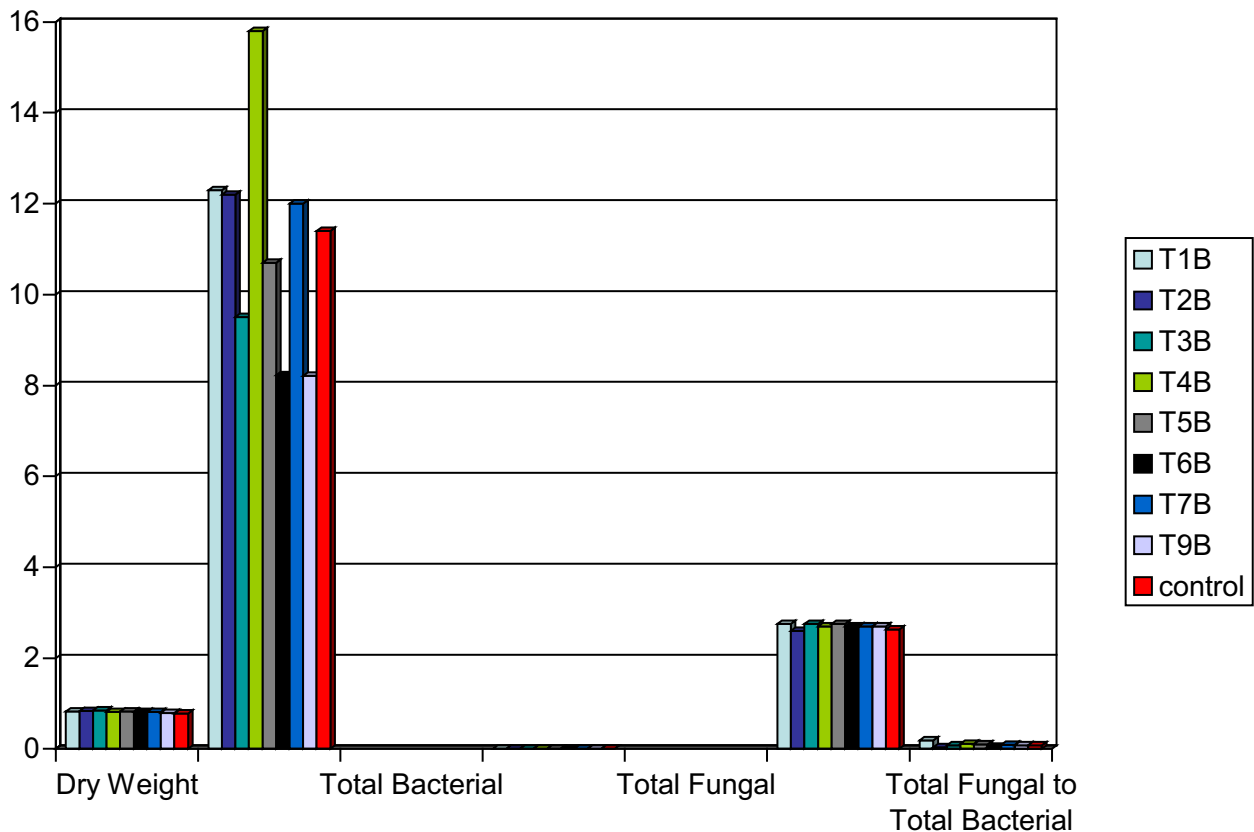


Conclusion

- When looking at the results of all various measurements taken, BioAktiv has an effect on the tomato, whether in growth or yield.
- The trial where a large dosage were applied, there are truly visible results.

SFI results

Sample	Dry Weight	Active Bacterial	Total Bacterial	Active Fungal	Total Fungal	Hypal Diameter	Total fungal to Total Bacterial
T1B	0.83	12.3	609	0.00	114	2.75	0.19
T2B	0.84	12.2	897	0.00	38.1	2.60	0.04
T3B	0.85	9.51	881	0.00	72.7	2.75	0.08
T4B	0.82	15.8	777	0.00	81.9	2.70	0.11
T5B	0.83	10.7	765	0.00	78.1	2.75	0.10
T6B	0.81	8.22	956	0.00	46.2	2.70	0.05
T7B	0.81	12.0	827	0.00	73.9	2.70	0.09
T8B	0.79	8.21	978	0.00	81.3	2.70	0.08
control	0.79	11.4	986	0.00	76.0	2.63	0.08



Conclusion

- There is variance in all the results, but no pattern can be drawn from it.
- Total Bacteria and total Fungi was taken out of the graph to get the scale in a readable size.
- Visually in the soil, the compost and manure were completely broken down in the soil, which could be the result of BioAktiv improving microflora in the soil to an extent where microbes were able to break down organic matter faster in the soil.

Frits – Trial Layout

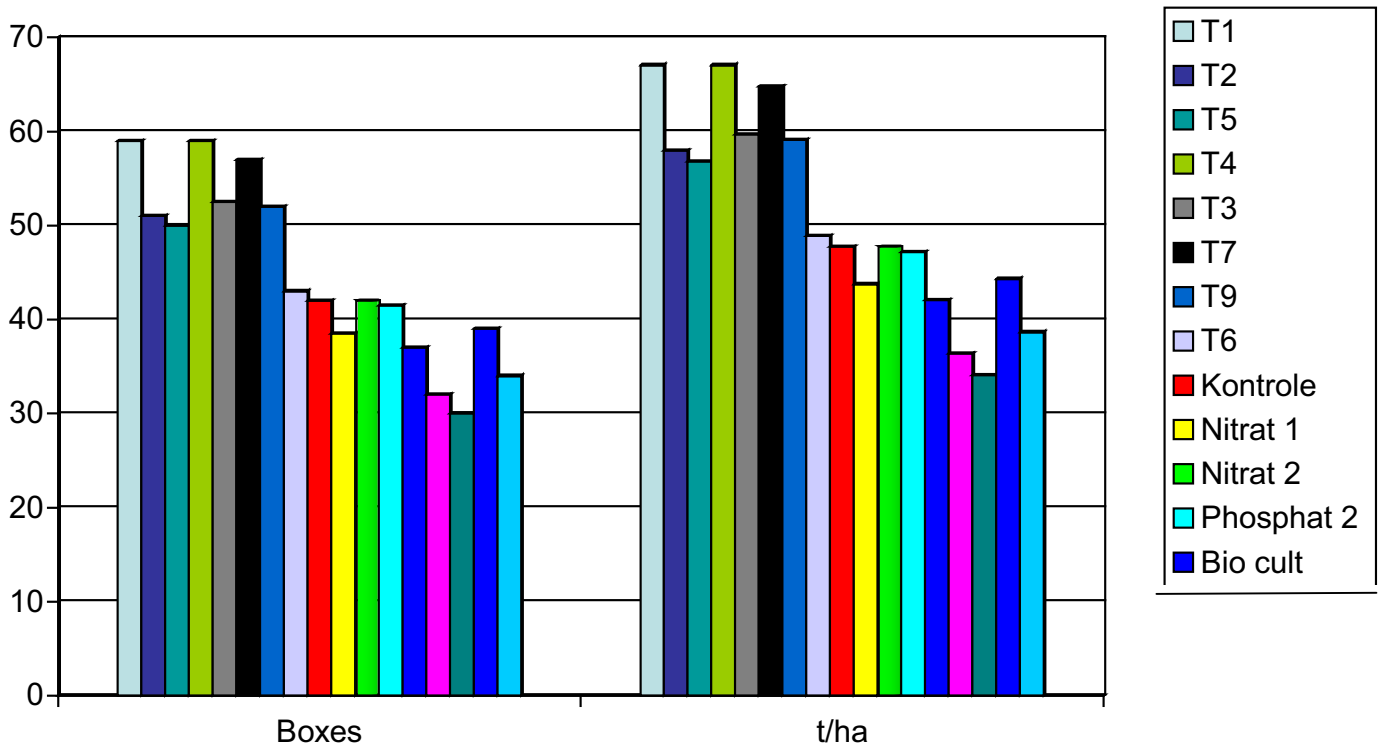
- T1: BioAktiv 1 (BA1, 1 kg every four weeks)
- T2: BioAktiv 2 (BA2, 0,5 kg every two weeks)
- T3: BioAktiv 3 (BA3, 0,25 kg weekly)
- T4: BioAktiv 2 + EM^{*} (BA4)
- T5: control 1 (BA5, EM + Biolan according to protocol)
- T6: control 2 (BA6, Biolan only, no EM extend)
- T7: BioAktiv 4 (BA7, alternate on two weekly basis, spray BioAktiv 500 g, drip BioAktiv 500 g)
- T8: BioAktiv 2 (BA2, 0,5 kg every two weeks, without any fertilizer)
- T9: BioAktiv 2 (BA2, 0,5 kg every two weeks, plus compost tea)
- T10: compost tea only

Plant properties

Verabreichung	Menge							kg/ Einh.	Ges. kg	Fläche ha	t/ha
	01/13	01/15	01/19	01/20	01/22	01/27	Gesamt				
T1	15	4	4	7	16	13	59	20	1180	0.017598	67.05
T2	6	5	4	6	16	14	51	20	1020	0.017598	57.96
T5	9	4	5	6	16	10	20	20	1000	0.017598	56.82
T4	15	4	5	5	12	18	59	20	1180	0.017598	67.05
T3	12	3	3.5	6	16	12	52.2	20	1050	0.017598	59.66
T7	16	5	4	4	9	19	57	20	1140	0.017598	64.78
T9	7	5	4	7	17	12	52	20	1040	0.017598	59.10
T6	7	3	3	5	11	14	43	20	860	0.017598	48.87
Kontrolle	7	5	4	6	9	11	42	20	840	0.017598	47.73
Nitrat 1	8	3	2.5	3	12	10	38.5	20	770	0.017598	43.75
Nitrat 2	7	2	4	3	16	10	42	20	840	0.017598	47.73
Phosphat2	9	3	4.5	2	14	9	41.5	20	830	0.017598	47.16
Biokult.	8	2	4	3	11	9	37	20	740	0.017598	42.05
Messenger	0	4	0	3	16	9	32	20	640	0.017598	36.37
Micotech	0	4	3	3	12	8	30	20	600	0.017598	34.09
Pygar super	0	3	5	4	18	9	39	20	780	0.017598	44.32
Phosphat	0	2	4	4	13	11	34	20	680	0.017598	38.64



Results



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Conclusion

- Here can be seen that in all the trails, better yield was obtained.
- The plants also yielded earlier in some of the applications
- Visually, the plants were more even at the tops, and grew more vigorously.
- Fruit size was influenced positively.
- BioAktiv has a positive reaction on yield.

Recomendation

- BioAktiv applied @ 1kg/ha every 4 weeks through irrigation system.
- BioAktiv has a positive reaction on yield and general plant health, and should be used in a program.