

EVALUATING

SEA-CROP®

by AMBROSIA TECHNOLOGY LLC

At Experimental GREENHOUSE
On ZUCCHINI

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AMBROSIA TECHNOLOGY, LLC
RAYMOND, WA 98577

SEA-CROP in Zucchini Grown in Soilless Experimental Design

❖Zucchini crop grown under greenhouse

- Cultivar of Zucchini: *Apus*(dark green)
- Substrate used: Bags of Coco Peat
- Date of planting: 13 December 2007
- Planting density: 1 plant per bag

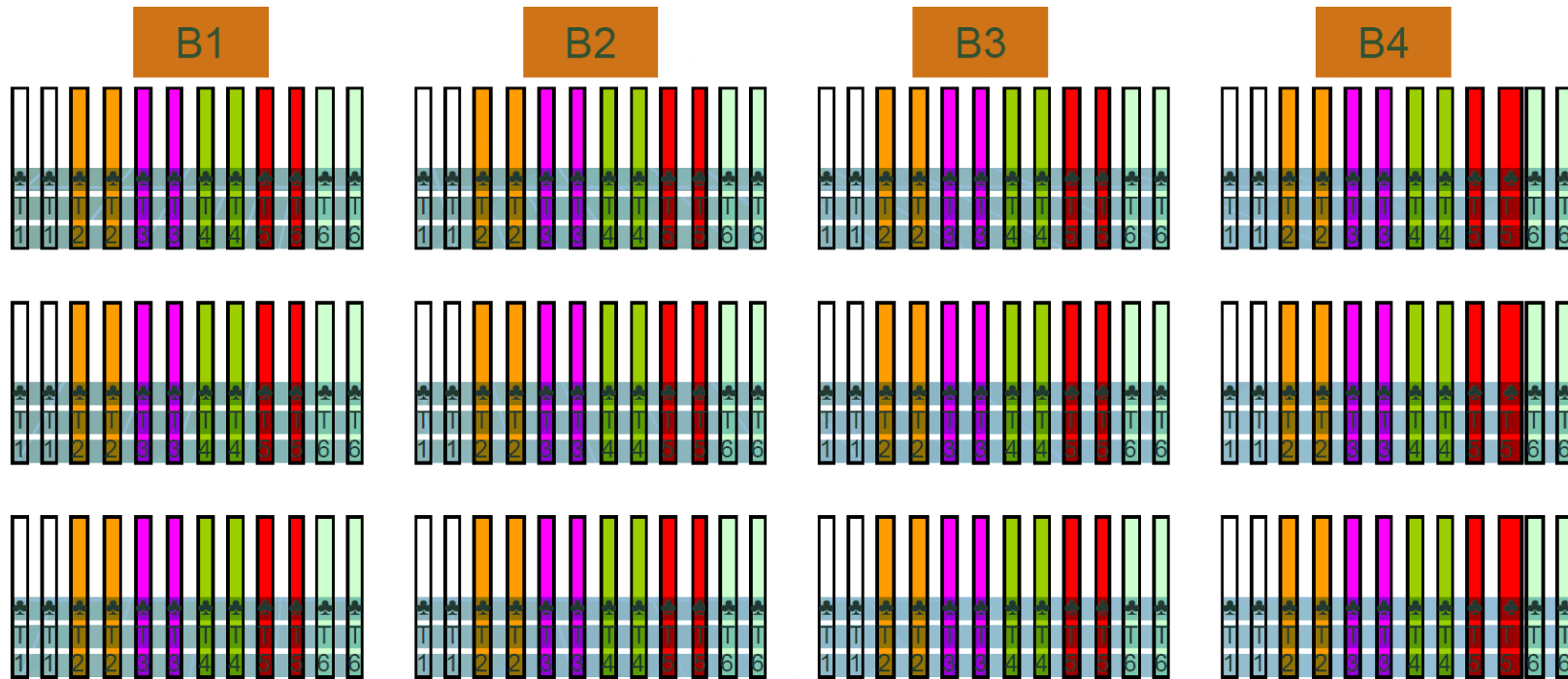
❖Treatments evaluated

- T1: Negative control
- T2: SEA-CROP applied once as Drench (0.15%)
- T3: SEA-CROP applied once as Drench (0.30%)
- T4: SEA-CROP applied twice as Drench (0.30%) (6 weeks apart)
- T5: SEA-CROP applied once as Foliar (1%)
- T6: SEA-CROP applied twice as Foliar (1%) (6 weeks apart)

❖Experimental Design

- CRBD
- 4 Replicates per treatment
- 1 Replicate = 5 plants

SEA-CROP in Zucchini Grown in Soilless Experimental Design



Treatments evaluated

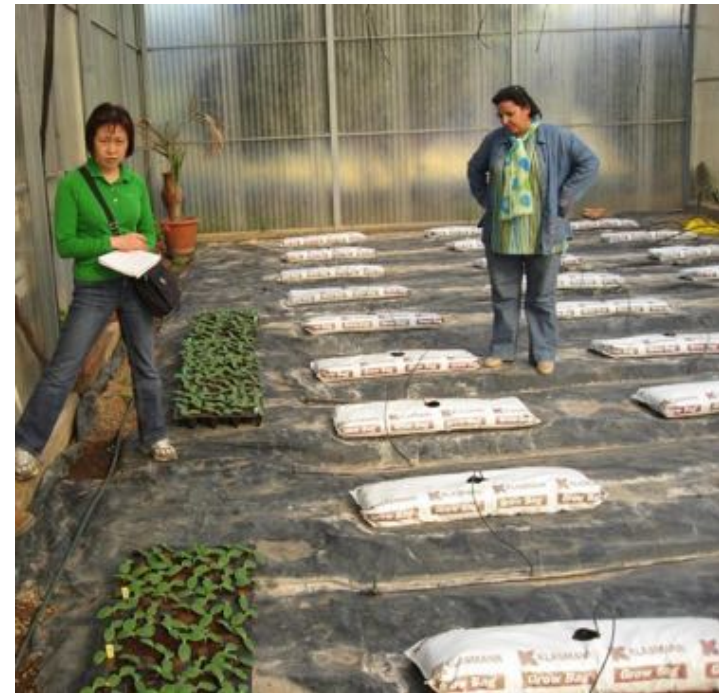
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Planting the Crop

Plantlets from Nursery



The Set Up



Preparing the two Greenhouses

November 2007

**Soilless Greenhouse
NEW Coco Peat Bags**



Soil Greenhouse



Zucchini in Soilless 9 January 2008

1 Replicate= 6 Plants



1 Treatment= 24



Zucchini in Soilless 21 January 2008

**Introduction of Bumble Bees for
Pollination**



**One hive of bumble bees every 6
weeks**



Zucchini in Soilless 25 January 2008

Bumble Bee in action



Bumble Bee's Hive



SEA-CROP in Zucchini Grown in SOIL Experimental Design

Zucchini crop grown under greenhouse

- Cultivar of Zucchini: *Apus* (Dark green)
- Date of planting: 28 November 2007
- Planting density: 1 plant per bag

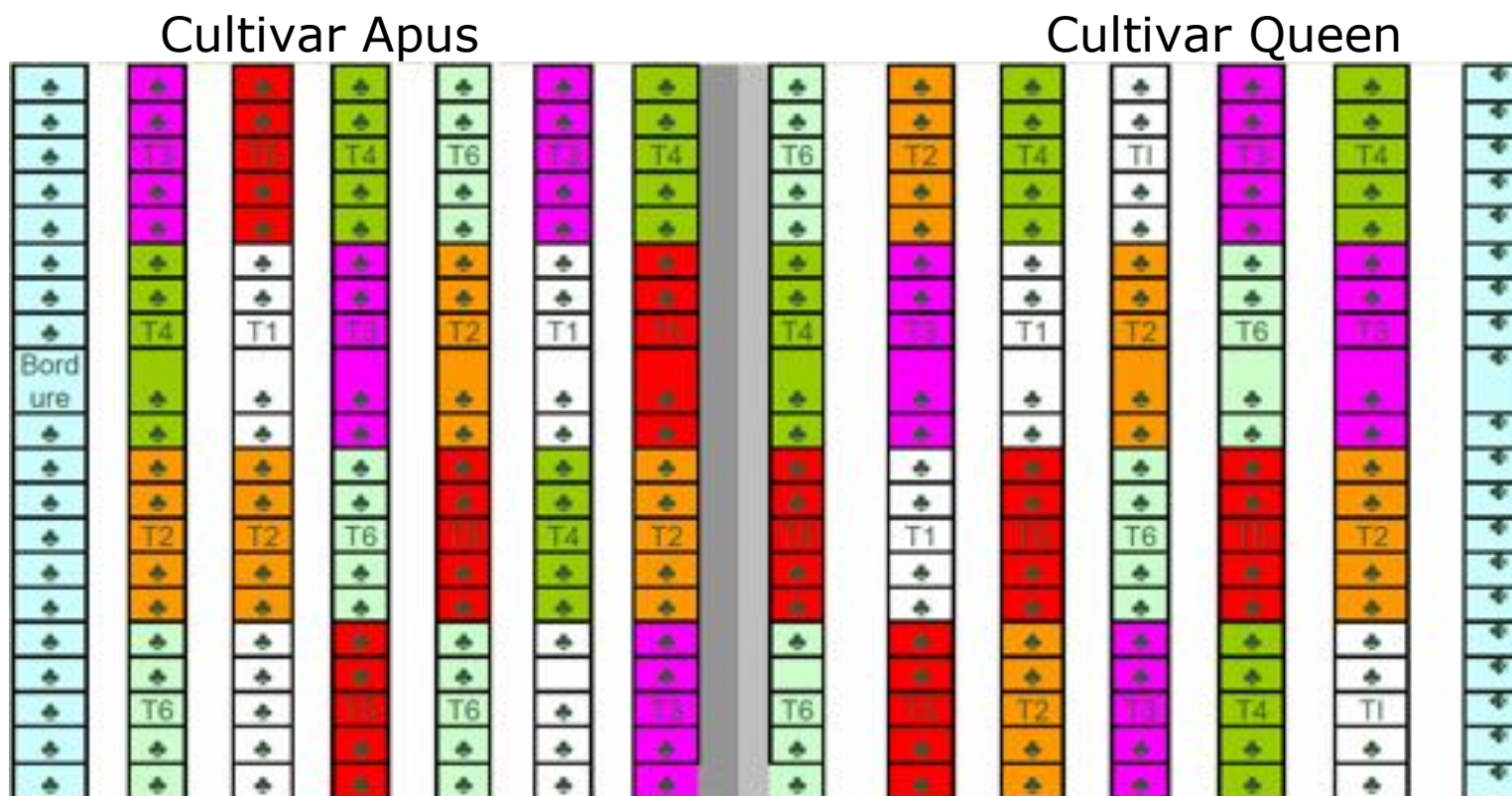
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Experimental Design

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SEA-CROP in Zucchini Grown in SOIL Experimental Design



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SEA-CROP in Zucchini Grown in SOIL Experimental Greenhouse

New Insect Net Installed

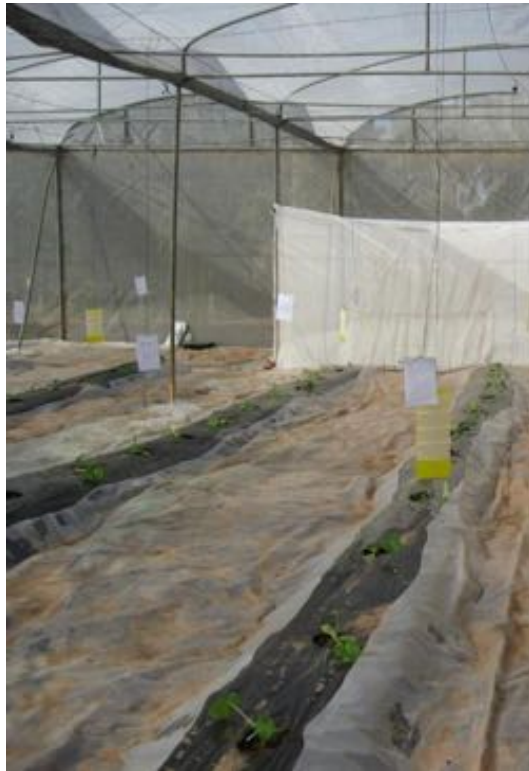


Soil Greenhouse Preparation



SEA-CROP in Zucchini Grown in SOIL Experimental Design

Planting the Crop in soil



**Planting density 1 m on row;
2 m between rows**



SEA-CROP in Zucchini Grown in SOIL

21 January 2008

Leaf Measure: Length and Width



SEA-CROP in Zucchini Grown in SOIL

21 January 2008

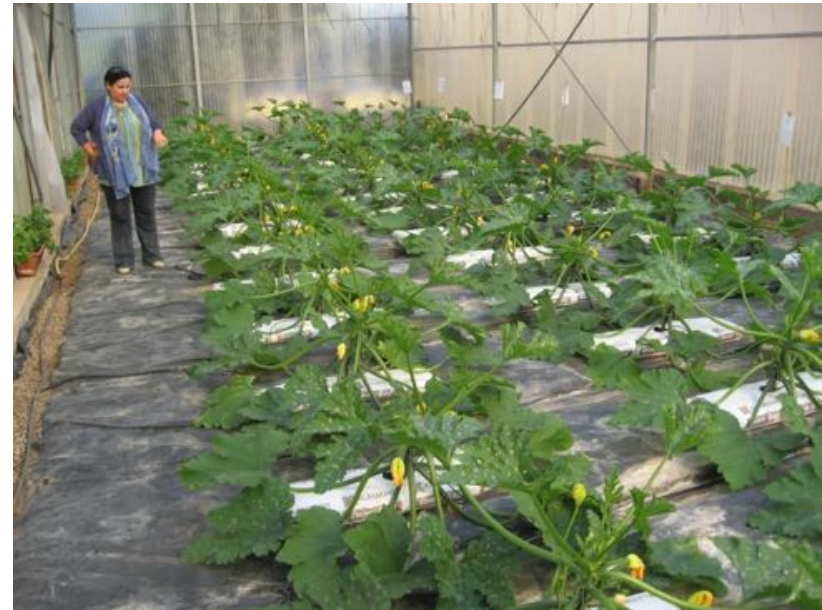
Leaf Measure



SEA-CROP in Zucchini Grown in SOILLESS

26 January 2008

SEA-CROP Impact on Leaf Size



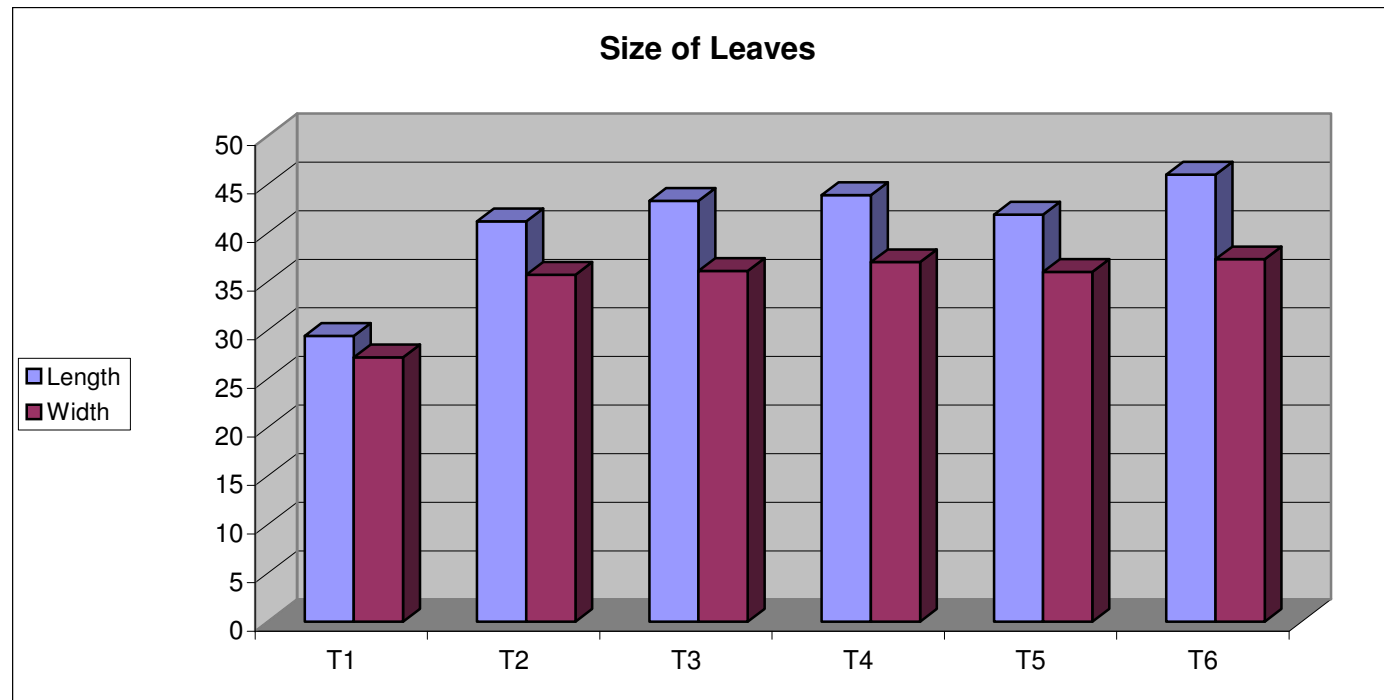
Impact of SEA-CROP on leaf size of Zucchini(cv. Apus) grown in soilless

Length (l) and width (L) in cm of Leaves of Zucchini (cv. Apus) grown in Soilless

Treatment Replicate	T1		T2		T3		T4		T5		T6	
	L	l	L	l	L	l	L	l	L	l	L	l
1	24	26	33	37	34	40	32	43	34	37	34	44
2	24	29	37	48	35	41	38	47	39	47	32	43
3	24	28	35	40	36	44	35	41	37	46	38	48
4	27	33	37	40	37	40	37	49	36	41	35	48
5	24	29	38	50	35	44	38	47	41	47	36	46
1	25	32	37	46	38	41	38	46	22	25	38	48
2	27	34	36	45	37	39	39	45	37	49	38	47
3	27	28	34	40	35	40	38	39	39	44	41	48
4	27	34	38	44	35	45	39	45	36	40	39	47
5	36	31	37	43	36	45	36	44	36	46	34	42
1	28	26	40	39	37	47	35	42	36	45	39	46
2	32	38	39	38	42	52	35	43	40	44	37	43
3	27	29	37	43	36	41	36	40	34	41	38	47
4	28	27	33	39	36	47	36	44	40	45	39	48
5	27	28	36	39	36	42	36	43	38	42	37	47
1	27	28	29	35	33	40	36	43	20	20	39	47
2	28	28	32	35	34	44	35	39	36	46	38	48
3	28	26	34	40	36	42	36	45	36	44	37	45
4	27	27	36	45	38	49	40	47	37	43	38	47
5	27	26	36	38	35	42	36	45	39	46	39	47
Average	27,2	29,4	35,7	41,2	36,1	43,3	37	43,9	36	41,9	37,3	46

Impact of SEA-CROP on leaf size of Zucchini(cv. Apus) grown in soilless

Length (l) and width (L) in cm of Leaves of Zucchini (cv. Apus) grown in soilless



T1: Negative control

T2: SEA-CROP applied once as Drench (0.15%)

T3: SEA-CROP applied once as Drench (0.30%)

T4: SEA-CROP applied twice as Drench (0.30%) (6 weeks apart)

T5: SEA-CROP applied once as Foliar (1%)

T6: SEA-CROP applied twice as Foliar (1%) (6 weeks apart)

Some concluding remarks regarding the impact of SEA-CROP on leaf size of Zucchini

Major Conclusions

1. SEA-CROP application improved leaf size especially leaf length.
2. The impact of SEA-CROP was highest when SEA-CROP was applied twice as foliar (T6) (1%) or when SEA-CROP was applied once as foliar or as a drench to the soil (0.3%) (T3 and T4).



Evaluating the impact of SEA-CROP on Zucchini yield

First Zucchini Harvest



Spectacular Impact of SEA-CROP on Early Harvest

Note the low yield of the control (T1) as compared to SEA-CROP in the first harvest

SEA-CROP = Early and High Production



Evaluating the impact of SEA-CROP on Zucchini yield

Measuring the fruits on 28 February 2008



Impact of SEA-CROP on yield of Zucchini (cv. Apus) grown in soilless system

Date	Harvest	T1		T2		T3		T4		T5		T6	
		Fruit NB	Fruit Weight	Fruit NB	Fruit Weight	Fruit NB	Fruit Weight	Fruit NB	Fruit Weight	Fruit NB	Fruit Weight	Fruit NB	Fruit Weight
26/01/2008	R1	1	2	0,31	2	0,4	2	0,46	0	0	3	1	0,25
28/01/2008		2	2	0,35	1	0,225	4	0,734	3	0,6	3	2	0,5
29/01/2008		3	0	0	0	0	0	0	4	0,7	0	2	0
31/01/2008		4	4	1,5	3	1,1	1	0,25	2	0,49	3	2	1,65
02/02/2008		5	3	0,63	2	0,5	3	0,68	3	0,85	3	3	0,73
04/02/2008		6	3	0,7	4	0,9	4	0,95	5	1,13	3	3	0,67
06/02/2008		7	4	0,98	3	0,75	3	0,69	5	1,14	3	4	1,07
08/02/2008		8	4	0,95	5	1,2	3	0,68	6	1,3	5	7	1,38
10/02/2008		9	5	1,02	4	0,89	4	0,9	5	1,01	7	6	1,2
13/02/2008		10	4	0,78	5	0,98	5	0,96	4	0,76	5	5	1,02
15/02/2008		11	1	0,2	1	0,18	2	0,48	3	0,57	4	3	0,62
17/02/2008		12	2	0,4	1	0,2	1	0,2	3	0,59	3	3	0,6
26/01/2008	R2	1	2	0,51	2	0,5	0	0	0	0	0	3	0
28/01/2008		2	2	0,42	1	0,15	0	0	2	0,34	1	0	0
29/01/2008		3	2	0,33	1	0,2	1	0,15	0	0	0	3	0,21
31/01/2008		4	3	0,7	2	0,49	6	1,8	3	0,99	1	0	0
02/02/2008		5	2	0,46	1	0,2	1	0,2	3	0,65	3	3	0,23
04/02/2008		6	5	1,12	4	0,89	3	0,65	4	0,88	4	3	0,64
06/02/2008		7	4	0,99	3	0,68	5	1,11	5	1,3	4	6	1,4
08/02/2008		8	5	1,2	4	0,83	6	1,25	4	0,8	6	6	1,28
10/02/2008		9	4	0,89	4	0,8	5	1,01	5	1,02	5	5	1,08
13/02/2008		10	3	0,6	5	0,97	4	0,84	5	1,08	4	5	1,07
15/02/2008		11	3	0,62	4	0,46	3	0,68	3	0,62	4	5	1,08
17/02/2008		12	2	0,44	3	0,65	2	0,45	2	0,4	4	4	0,48
26/01/2008	R3	1	0	0	2	0,356	1	0,22	2	0,44	3	3	0,5
28/01/2008		2	3	0,5	1	0,15	2	0,346	2	0,4	1	1	0,242
29/01/2008		3	2	0,33	0	0	2	0,38	1	0,18	0	4	0,16
31/01/2008		4	1	0,27	2	0,596	1	0,22	0	0	1	3	0,24
02/02/2008		5	3	0,7	4	1,1	2	0,48	2	0,5	4	3	0,65
04/02/2008		6	1	0,2	2	0,48	3	0,68	4	0,98	3	3	0,72
06/02/2008		7	4	0,94	7	1,69	6	1,38	8	1,9	2	3	0,74
08/02/2008		8	3	0,68	4	0,84	5	1,03	8	1,8	6	7	1,4
10/02/2008		9	4	0,9	5	1,04	6	1,23	6	1,2	5	6	1,2
13/02/2008		10	5	1,02	7	1,46	6	1,23	5	0,98	7	7	1,46
15/02/2008		11	3	0,6	4	0,47	5	1,02	4	0,48	4	0	0
17/02/2008		12	3	0,63	3	0,65	5	1,06	3	0,64	3	0	0
26/01/2008	R4	1	0	0	2	0,34	0	0	1	0,16	3	0	0
28/01/2008		2	3	0,63	1	0,183	2	0,33	0	0	3	2	0,412
29/01/2008		3	2	0,4	1	0,215	1	0,18	1	0,22	0	0	0
31/01/2008		4	0	0	0	0	1	0,3	2	0,48	3	0	0
02/02/2008		5	2	0,44	3	0,8	2	0,52	3	0,75	3	2	0,48
04/02/2008		6	2	0,42	3	0,65	4	0,912	4	0,95	1	2	0,46
06/02/2008		7	1	0,28	6	1,42	3	0,8	6	1,2	1	5	1,01
08/02/2008		8	4	0,86	5	1,1	4	0,89	5	1,02	6	5	1,03
10/02/2008		9	3	0,63	4	0,98	4	0,9	5	1,05	5	6	1,28
13/02/2008		10	4	0,81	5	1,03	4	0,81	6	1,34	6	6	1,26
15/02/2008		11	4	0,82	3	0,62	3	0,64	2	0,4	3	3	0,6
17/02/2008		12	4	0,85	1	0,2	2	0,39	1	0,19	2	5	0,2

Impact of SEA-CROP on Yield of Zucchini cv. Apus grown in Soilless system

Average number of fruits and yield per period of harvest

Harvest Dates	26-31 January 2008		2-6 February 2008		8-13 February 2008		15-17 February 2008	
	Number of Fruits	Average Weight	Number of Fruits	Average Weight	Number of Fruits	Average Weight	Number of Fruits	Average Weight
T1	1,75	0,39	2,8	0,7	4	0,86	2,75	0,57
T2	1,3	0,31	3,5	0,8	4,8	1	2,5	0,5
T3	1,5	0,34	3,25	0,8	4,7	1	2,9	0,6
T4	1,4	0,31	4,3	1	5,3	1,1	2,6	0,5
T5	1,6	0,39	2,8	1	5,6	1,2	3,3	0,5
T6	1,3	0,3	3,3	0,7	6	1,2	2,9	0,5

T1: Negative control

T2: SEA-CROP applied once as Drench (0.15%)

T3: SEA-CROP applied once as Drench (0.30%)

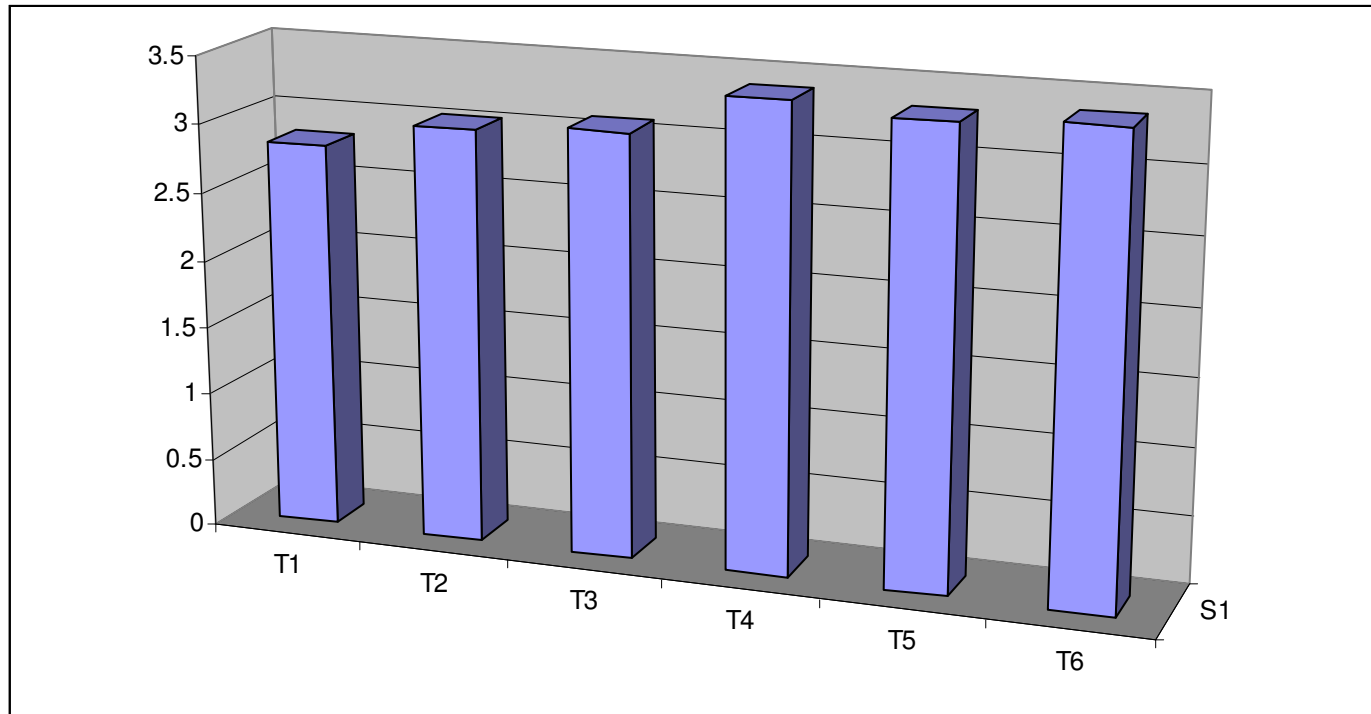
T4: SEA-CROP applied twice as Drench (0.30%) (6 weeks apart)

T5: SEA-CROP applied once as Foliar (1%)

T6: SEA-CROP applied twice as Foliar (1%) (6 weeks apart)

Impact of SEA-CROP on Yield of Zucchini cv. Apus grown in Soilless system

Average number of fruits per harvest

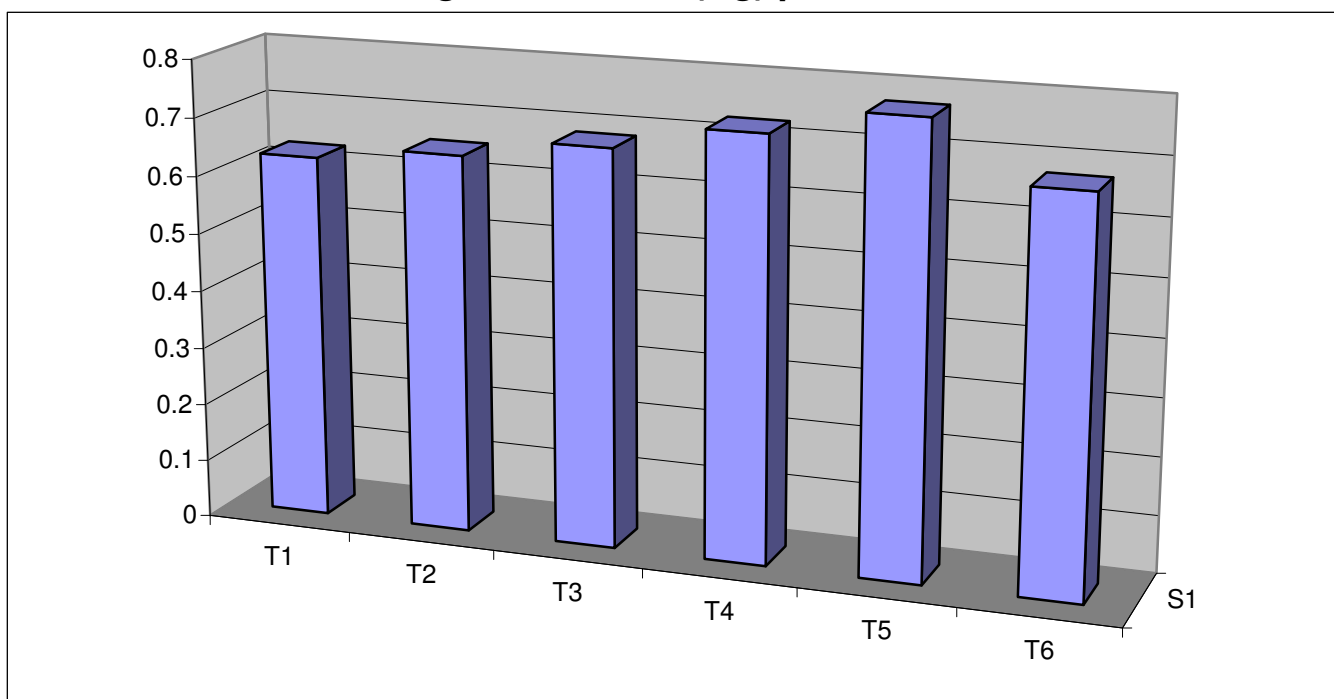


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Impact of SEA-CROP on Yield of Zucchini cv. Apus grown in Soilless system

Average Fruit Yield (Kg) per Treatment



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Impact of SEA-CROP on Root of Zucchini cv. Apus grown in Soilless system

Harvesting the Root System



Impact of SEA-CROP on Root of Zucchini cv. Apus grown in Soilless system

Harvesting the Root System



Impact of SEA-CROP on Root of Zucchini cv. Apus grown in Soilless system

Harvesting the Root System 27 February 2008



Impact of SEA-CROP on Root of Zucchini cv. Apus grown in Soilless system

Washing the Roots from the Substrate



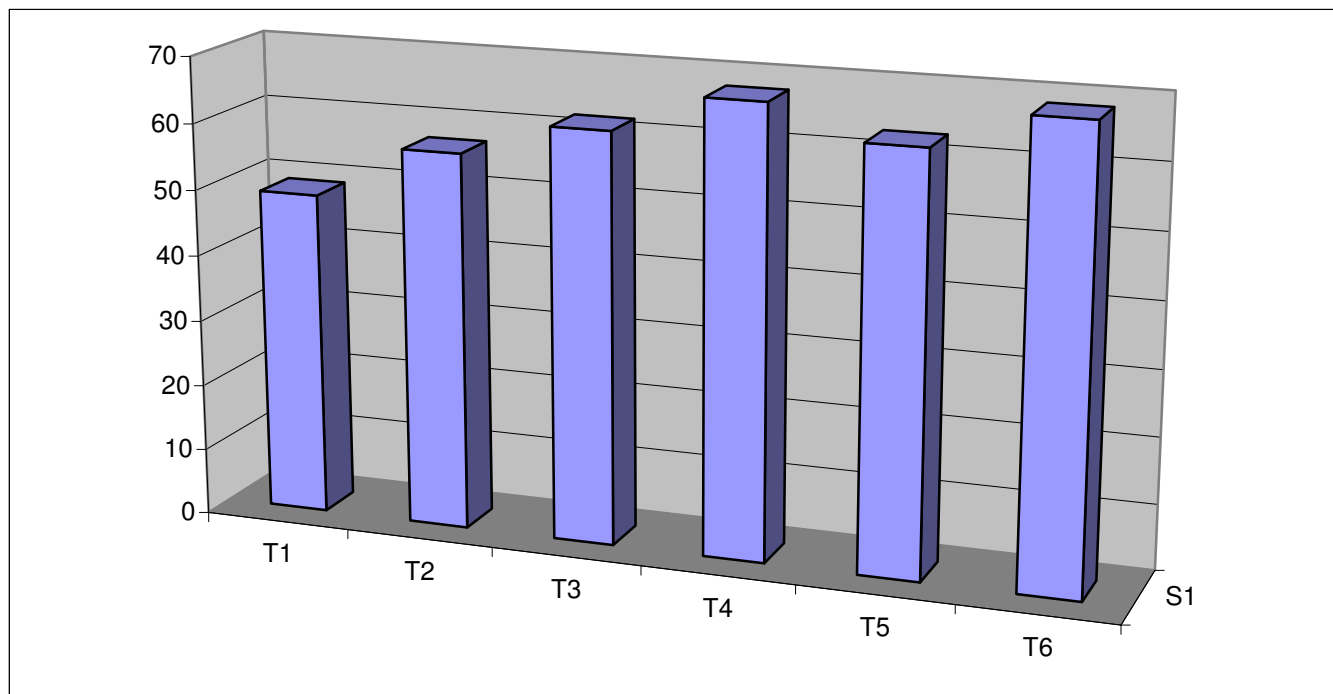
Impact of SEA-CROP on Root of Zucchini cv. Apus grown in Soilless system

Harvesting the Root System 27 February 2008



Impact of SEA-CROP on Root of Zucchini cv. Apus grown in Soilless system

Dry Weight (g) of 8 Root Systems/Treatment



Treatment

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Some Concluding Remarks concerning SEA-CROP and Zucchini grown in Soilless System

- ❖ All SEA-CROP Treatments have improved leaf size, number of fruits and total yield
- ❖ All SEA-CROP treatments have caused an early flowering and consequently an early production as compared to the control
- ❖ The best performance in terms of fruit number and fruit yields were achieved in the treatment which received two foliar applications of SEA-CROP (1%) followed by the treatment which received two applications as drench (0.30%).
- ❖ Even one foliar application of SEA-CROP (1%) achieved better results than drenching (0.15% or 0.30%).
- ❖ The concentration of 0.15% of SEA-CROP produced slightly better results than the negative control.
- ❖ SEA-CROP enhanced root volume and root dry weight. Again two foliar applications (1%) and two drench applications (0.30%) produced the largest root system.
- ❖PS: Data relative to the two cultivars grown in soil was not presented in this report because of severe powdery mildew which affected the results of the trial in soil