

# **Evaluation of TYLCV-resistant Tomato Varieties under Organic Conditions in Southwest Florida**

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**Tomato Season 2009-2010**

# Little Cypress Organics

Table 1. Field history tomato crop under organic conditions spring 2009

<b>Experimental Design</b>	CRBD (3 reps)
<b>Irrigation</b>	Seepage
<b>Plot size</b>	12 feet
<b>Planting Date</b>	1/13/2009
<b>Fumigation</b>	None
<b>Linear ft per acre</b>	7,260
<b>Bed Spacing</b>	6 ft
<b>Plant population</b>	4,150
<b>Bed Height</b>	8 in
<b>Plant Spacing</b>	21 in
<b>Bed Wide</b>	36 inch
<b>Row run</b>	North - South
<b>Plants Harvest</b>	5
<b>Pruning</b>	No
<b>Harvest Date</b>	
1 <sup>st</sup>	23-Apr-09
2 <sup>nd</sup>	28-Apr-09
3 <sup>rd</sup>	4-May-09
4 <sup>th</sup>	11-May-09
5 <sup>th</sup>	18-May-09
6 <sup>th</sup>	26-May-09
7 <sup>th</sup>	1-Jun-09
<b>Planting to 7<sup>th</sup> pick</b>	21 weeks

**Table 2. Cultivars and advanced breeder's varieties evaluation during spring 2009.**

<b>Variety</b>	<b>Source</b>	<b>Virus incidence (%)<sup>z</sup></b>	<b>Bacterial Spot Rating (%)<sup>z</sup></b>
<b>BHN 765</b>	BHN Seed	0	93.3abc
<b>FLA 8578</b>	UF <sup>y</sup>	0	76.6cde
<b>HA 3075 (Ofri)</b>	Hazera	0	70.0cde
<b>HA 3095</b>	Hazera	0	73.3cde
<b>HA 3096</b>	Hazera	0	96.6ab
<b>HM 8845</b>	Harris Moran	0	90.0bcd
<b>Sak 5230</b>	Sakata	0	83.3bcde
<b>Sak 5443</b>	Sakata	0	100.0a
<b>SVR 200</b>	Seminis	0	56.6e
<b>Tycoon</b>	Hazera	0	96.6ab
<b>Tygress</b>	Seminis	0	56.6e
<b>FL 47 (control)</b>	Seminis	0	80.0bcde
<b>Sebring (control)</b>	Syngenta	4	70.0de
<b>P values</b>	n/a	ns	**
<b>Sig.</b>	n/a	ns	0.0002

<sup>z</sup> Percentage of TYLVC-affected plants, Bacterial spot at the end of trial, after third harvest. Values are means of three replications of 7 plants.

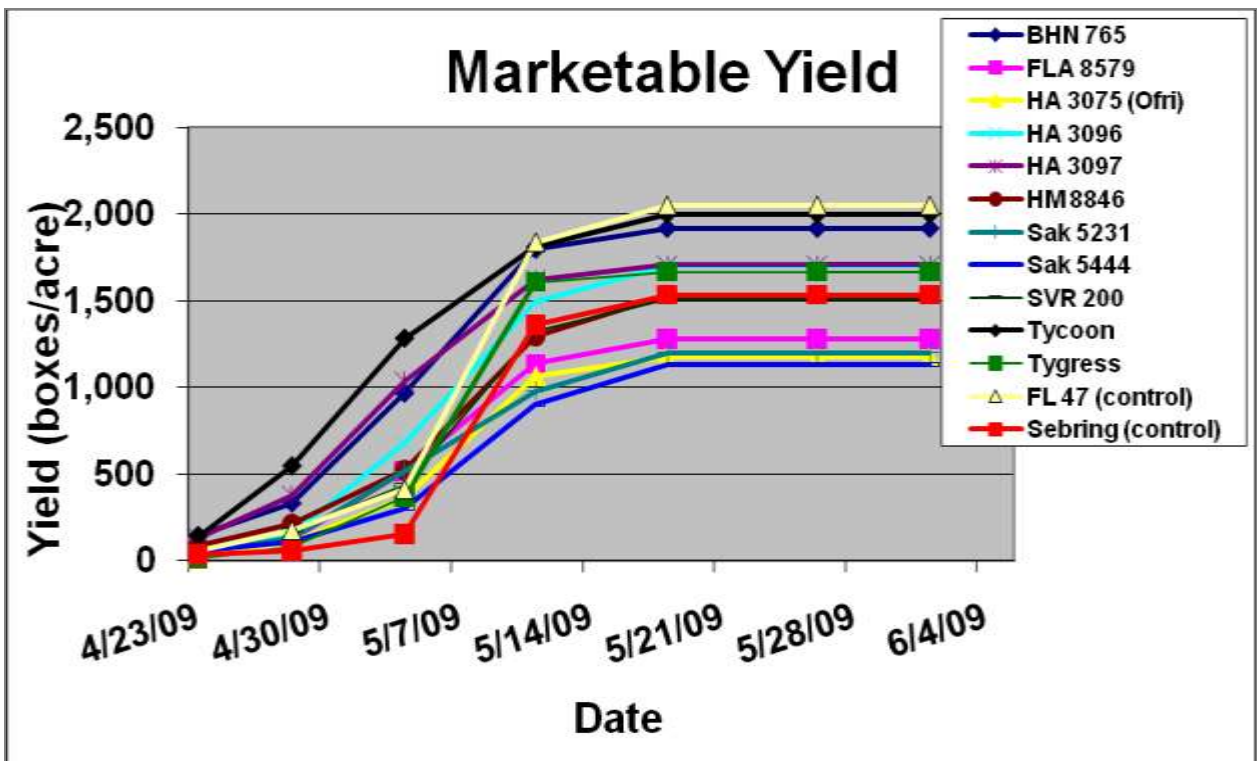
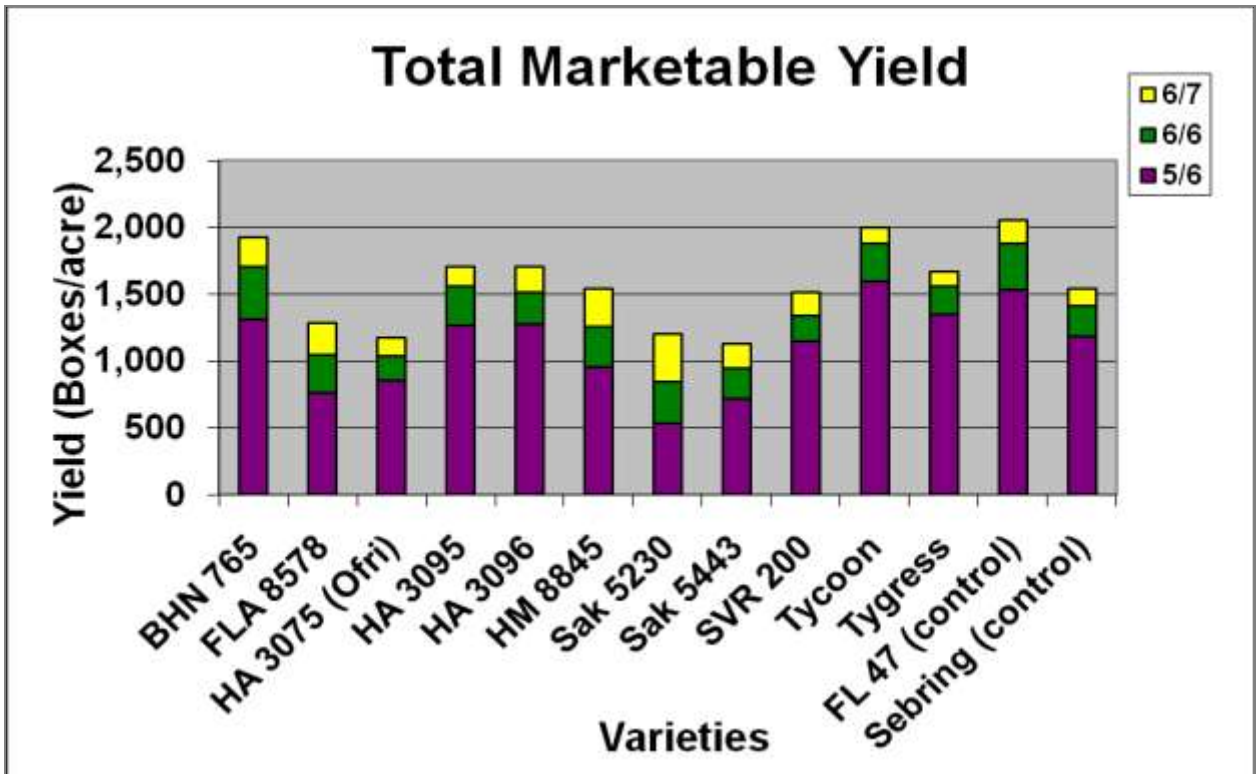
<sup>y</sup> University of Florida

**Table 3. Marketable yield by size, category and harvest and total unmarketable Spring 2009.**

Variety	Marketable Yield (Boxes/acre)				
	5/6	6/6	6/7	Total	Unmarketable
<b>BHN 765</b>	1,309ab <sup>z</sup>	397	212	1,920ab	2,546abcd
<b>FLA 8578</b>	760cde	280	239	1,280bc	2,764abc
<b>HA 3075 (Ofri)</b>	847bcde	189	139	1,176c	2,563abcd
<b>HA 3095</b>	1,263abc	290	148	1,702abc	2,522abcd
<b>HA 3096</b>	1,269abc	240	196	1,706abc	2,474abcd
<b>HM 8845</b>	954bcde	301	279	1,535abc	2,151cde
<b>Sak 5230</b>	529e	309	360	1,199c	2,971ab
<b>Sak 5443</b>	715de	231	182	1,129c	2,823abc
<b>SVR 200</b>	1,142abcd	190	177	1,510abc	1,958de
<b>Tycoon</b>	1,594a	279	124	1,998a	3,033a
<b>Tygress</b>	1,344ab	210	113	1,668abc	1,793e
<b>FL 47 (control)</b>	1,527a	354	167	2,048a	2,304bcde
<b>Sebring (control)</b>	1,182abcd	225	130	1,539abc	2,717abc
<b>P values</b>	0.001	0.28	0.06	0.04	0.004
<b>Sig.</b>	*	ns	ns	*	**

<sup>z</sup>Means separation by Duncan's Multiple Range Test,  $P \leq 0.05$  Level, means followed by the same letter are not statistically different.

\*\* Significance at  $P \leq 0.01$ ; \* Significance at  $P \leq 0.05$ ; ns Not significance.



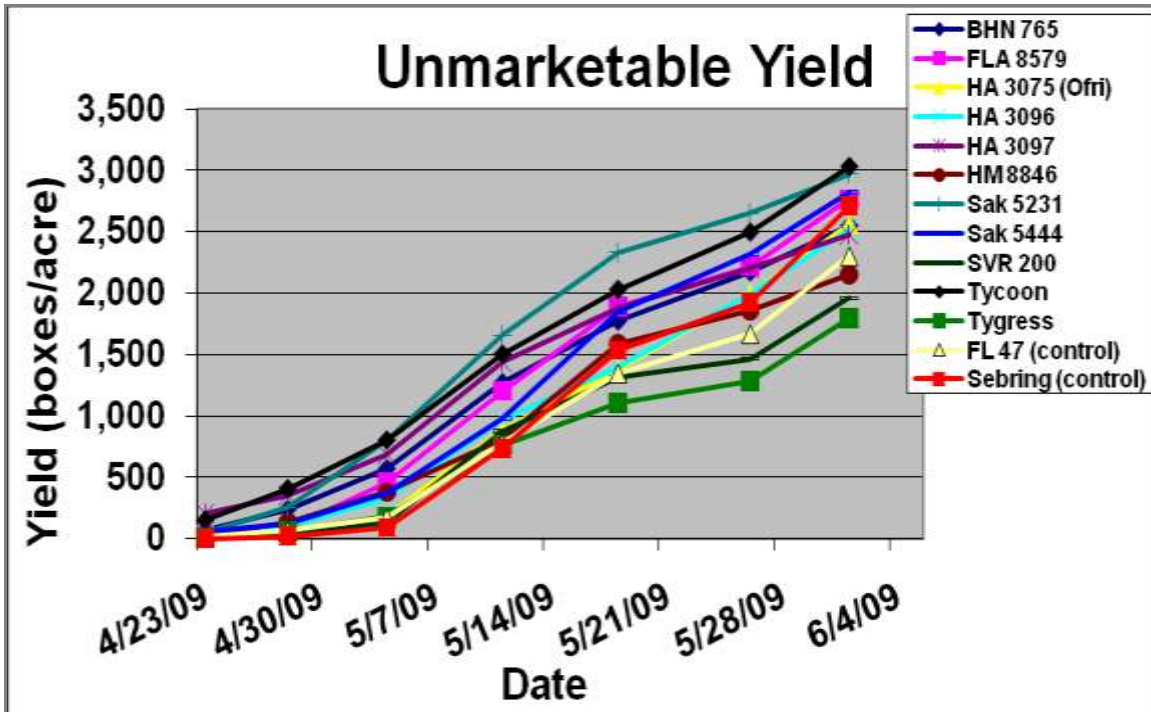
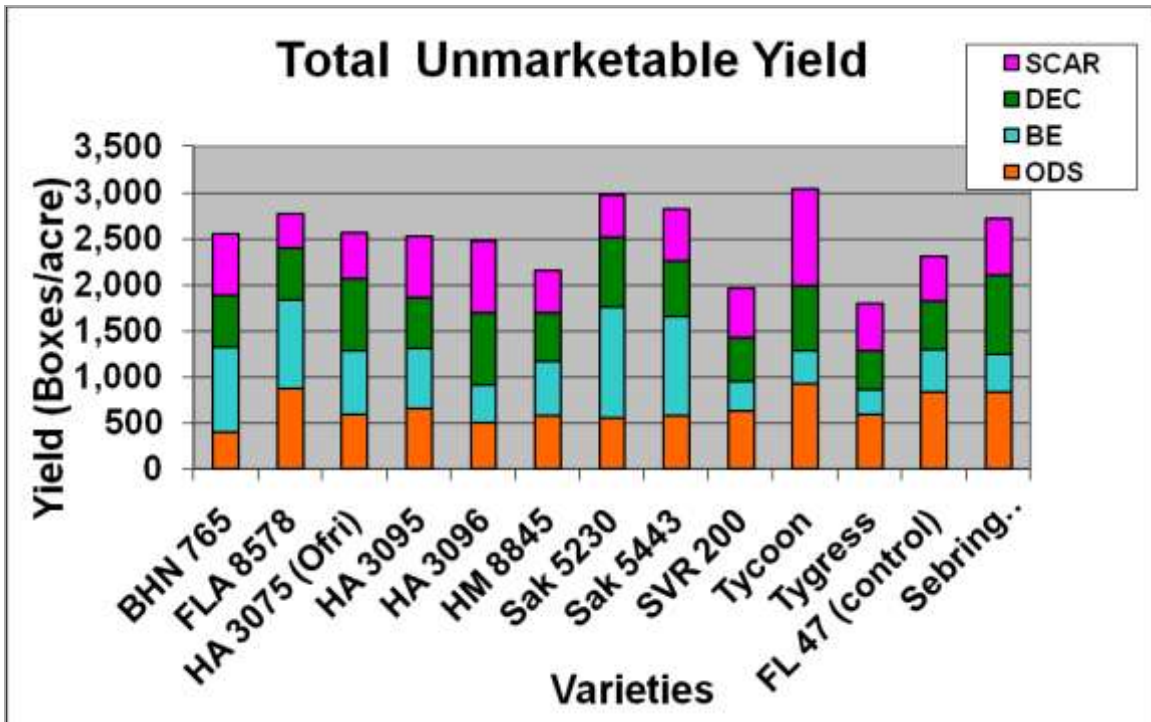
**Table 4. Percentage of number of fruits unmarketable (culls) by category: odd shape (OS), blossom end scars (BES), Irregular ripening (IR), and scaring (SC) Spring 2009.**

Variety	Unmarketable Fruit by Type				Total Culls (Boxes/acre)
	OS	BES (%)	IR	SC	
<b>BHN 765</b>	15.8f <sup>z</sup>	35.9ab	22.2	26.1abcd	2,546abcd
<b>FLA 8578</b>	31.7ab	34.6ab	20.4	13.2f	2,764abc
<b>HA 3075 (Ofri)</b>	23.3cde	27.0bc	30.3	19.3def	2,563abcd
<b>HA 3095</b>	26.0bcde	25.7bcd	22.0	26.2bcd	2,522abcd
<b>HA 3096</b>	20.4def	16.7de	31.4	31.4ab	2,474abcd
<b>HM 8845</b>	26.8bcd	27.3bc	24.4	21.3cde	2,151cde
<b>Sak 5230</b>	18.7ef	40.3a	25.8	15.2ef	2,971ab
<b>Sak 5443</b>	20.7def	38.0a	21.3	19.9cdef	2,823abc
<b>SVR 200</b>	32.4ab	16.9de	24.3	26.9bcd	1,958de
<b>Tycoon</b>	30.5abc	11.6e	23.4	34.3a	3,033a
<b>Tygress</b>	33.2ab	14.8e	23.7	28.1abc	1,793e
<b>FL 47 (control)</b>	36.0a	20.0cde	23.2	20.6cdef	2,304bcde
<b>Sebring (control)</b>	30.7abc	15.0e	31.9	22.4cde	2,717abc
<b>P values</b>	0.0001	0.0001	0.50	0.0002	0.004
<b>Sig.</b>	**	**	ns	**	**

<sup>z</sup> Means separation by Duncan's Multiple Range Test,  $P \leq 0.05$  Level, means followed by the same letter are not statistically different.

\*\* Significance at  $P \leq 0.01$ ; \* Significance at  $P \leq 0.05$ ; ns Not significance.





**Table 5. Field TYCLV variety blind evaluation spring 2009 (tomato plant and fruit evaluation was calculated from the contribution of 13 participants based in rating scale 1-5; 1= very poor and 5 = very good).**

Varieties	Earliness type	Plant vigor	Fruit size	Firmness	Fruit quality	Yield potential	Overall rate
<b>BHN 765</b>	3.1bc <sup>z</sup>	3.5c	3.3ab	3.7ab	3.8ab	3.8a	3.6a
<b>FLA 8578</b>	2.6cdef	3.8bc	3.1ab	3.8ab	3.0de	3.8a	3.0ab
<b>HA 3075 (Ofri)</b>	2.3def	4.4a	3.2ab	4.0a	3.3bcd	3.2ab	2.9ab
<b>HA 3095</b>	2.3def	4.2ab	3.2ab	3.8ab	2.9de	2.7b	2.6b
<b>HA 3096</b>	3.1bc	3.0c	2.8bc	3.2b	2.9de	3.3ab	2.5b
<b>HM 8845</b>	2.3f	4.4a	2.4c	3.3ab	3.3bcd	3.2ab	2.6b
<b>Sak 5230</b>	3.5ab	3.5c	3.2ab	3.4ab	2.9de	3.7a	2.8b
<b>Sak 5443</b>	2.9bcd	4.1ab	2.8bc	3.3ab	3.2cd	3.8a	2.9b
<b>SVR 200</b>	2.9bcde	4.1ab	3.6a	3.4ab	3.1cd	3.3ab	3.3ab
<b>Tycoon</b>	3.8a	3.0d	3.4ab	3.1b	2.5e	3.2ab	2.6b
<b>Tygress</b>	3.2f	4.0ab	3.3ab	3.6ab	3.7abc	3.0ab	3.2ab
<b>FL 47 (control)</b>	2.2ef	4.0ab	3.1ab	3.9ab	3.2cd	3.3ab	2.8b
<b>Sebring (control)</b>	2.1f	3.7bc	3.3ab	3.8ab	3.9a	3.5a	3.1ab
<b>P values</b>	0.001	0.001	0.02	0.001	0.001	0.006	0.025
<b>Sig.</b>	**	**	*	**	**	**	*

<sup>z</sup> Means separation by Duncan's Multiple Range Test,  $P \leq 0.05$  Level, means followed by the same letter are not statistically different.

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