

Vegetable Production & Marketing



VOLUME 7, NUMBER 4

APRIL 1997

Winter Garden Hybrid Watermelon Trial Highlights

*By Dr. Frank J. Dainello, Extension Horticulturist - Commercial Vegetable Crops,
Department of Horticulture, Texas A&M University, College Station, Texas*



As reported last month for the seedless watermelon trials in the Winter Garden, weather conditions during the 1996 season were ideal for watermelon production. As a result, unusually high yields were obtained from our hybrid watermelon trial as well. This trial was also conducted in cooperation with Willoughby Farms of Batesville.

The crop was grown utilizing transplant establishment, black plastic mulch, and drip irrigation. Transplants were field-set on April 11, and the fruit once-over harvested and graded according to size and marketability on June 27. The yield data obtained is presented in Table 1. Fruit and rind characteristics are shown in Table 2. Based on a projected 100 percent planted acre, 2 hybrids--Patriot and Big Stripe--yielded in excess of 90,000 pounds of marketable quality fruit. Three other

hybrids--Desert Storm, Summer Flavor 420, and an experimental WX 7--produced over 80,000 pounds of marketable fruit.

It should be mentioned that considering today's market demands, total marketable yield alone can sometimes be misleading. The percent fruit harvested per size grade, fruit shape, and rind patterns are equally, if not more, important considerations. Therefore, attention should be given to these variables when using this or other data to help make decisions regarding variety selections. For addition information regarding this trial, contact Dr. Larry Stein, Extension Horticulturist, TAMU-AREC at Uvalde (210/278-9151 ext 134) or Mr. Kenneth Wilhite, County Extension Agent-Ag for Uvalde County (210/278-6661).

Tables on Page 2

Crook-Neck Syndrome Can Cause Fruit Cracking

University of North Carolina horticulturist Doug Sanders has a remedy for tomato growers suffering from 'crook-neck syndrome'. Crook neck, according to Sanders, is the stiff neck you get from watching a cloud on the horizon, thinking it's going to rain and waiting to irrigate. Uneven moisture can lead to fruit cracking.

Blossom end rot, caused by calcium deficiency "comes down to not enough water at the right time to get calcium to the fruit," Sanders said.

Because of their high water content (90 to 95 percent), tomatoes are particularly susceptible to drought, so an even supply of water is essential. It can be a costly mistake to wait too long to irrigate, cautions Sanders.

Continued on Page 3

TABLE 1. 1996 STATEWIDE HYBRID (STANDARD) WATERMELON TRIALS, BATESVILLE, TEXAS

		↕ % FRUIT HARVEST / A / GRADE (AVERAGE FRUIT SIZE) ↕							
ENTRY	SEED SOURCE	MKTBL YLD (LBS/A)*	> 30	25-29	20-24	15-20	10-14	< 10	% CULLS
PATRIOT	(5)	90358	9	27	0	33	6	0	25
BIG STRIPE	(5)	90010	21	21	0	10	14	0	34
DESERT STORM	(5)	87312	0	28	16	14	16	0	26
SUMMER FLAVOR 420	(1)	85048	0	0	9	56	12	11	12
WX 7	(5)	80957	29	11	7	20	6	0	27
BARON	(2)	72774	0	5	17	26	18	0	34
WX 5	(5)	68073	0	24	0	0	21	36	19
SUPER GOLD	(5)	67203	12	23	0	28	0	4	33
SUMMER FLAVOR 500	(1)	63112	20	0	33	0	13	0	34
ALL SWEET	(4)	61283	0	17	14	9	5	0	65
SUMMER GOLD	(5)	56931	10	13	14	20	8	14	21
SF 460	(3)	56757	0	0	0	7	0	81	12
SUMMER FLAVOR 700	(1)	56235	0	13	11	27	20	0	29
SUMMER FLAVOR 710	(1)	55190	11	24	0	9	0	15	41
LF 1402	(3)	53797	0	3	26	37	0	21	13
SUMMER FLAVOR 510	(1)	50855	0	20	39	13	7	0	21
LF 1390	(3)	48574	0	0	7	22	30	0	41
LF 1832	(3)	46485	0	0	31	24	20	6	19
LF 1789	(3)	46050	0	8	25	23	27	17	0
LF 1408	(3)	42219	0	0	38	31	31	0	0
SF 662	(3)	41436	0	0	0	0	0	94	6
LSD (P=0.05)		30922	---	---	---	---	---	---	---

SEED SOURCES:

- 1 - Abbott & Cobb
- 2 - American Sunmelon
- 3 - CDM Fasttrack
- 4 - Sunseeds
- 5 - Willhite

NOTE:

The predominant cause of culled fruit was due to blossom end rot and/or bottle-necking

* Yield based on 100 % planted area / A

CULTURE:

Transplant established April 1996.
 Once-over harvested June 27, 1996
 Randomized Complete Block Design having 3 replicates / entry
 5 plants / rep / entry
 80" raised beds with 2.5' in-row spacing
 Grown on black plastic with drip irrigation
 All other cultural practices as employed by cooperator (Willoughby Farms, Batesville, Texas) - plots established in commercial production field

TABLE 2. 1996 STATEWIDE HYBRID (STANDARD) WATERMELON TRIALS, BATESVILLE, TEXAS

ENTRY	FRUIT CHARACTERISTICS
Patriot	All sweet type but with lighter green medium-size dark stripe
Big Stripe	Blocky Royal Sweet type, light green ground color and wide dark-green stripe
Desert Storm	Blocky fruit similar to Patriot except ground color darker green, causing stripe not to be as evident as on Patriot
Summer Flavor 420	Royal Sweet rind pattern, short blocky fruit
WX 7	Blocky All Sweet type
Baron	Medium dark green, long blocky fruit with no striping
WX 5	Black Diamond rind color, round fruit
Super Gold	Jubilee type, yellow flesh
Summer Flavor 500	All Sweet type, some blossom end cracking noted
All Sweet	Long fruit with dark-green ground color and light-green stripes
Summer Gold	Royal Sweet type with yellow flesh
SF 460	Icebox type with Charleston Grey rind coloration, oblong shape
Summer Flavor 700	Jubilee type, short blocky fruit
Summer Flavor 710	Royal Sweet type, blocky fruit shape
LF 1402	Oblong blocky shape with Crimson Sweet rind coloration
Summer Flavor 510	Similar to Summer Flavor 500 but more blocky
LF 1390	Oblong fruit with Crimson Sweet coloration
LF 1832	Round fruit, Crimson Sweet type
LF 1789	Round fruit, Crimson Sweet type
LF 1408	Jubilee type rind pattern and coloration
SF 662	Icebox type with dark-green ground color and darker green stripes

Fumigant Found to Control Pink Root Disease



Researchers are finding the fumigant metam-sodium a useful tool in the battle against pink root disease, said the Parma Research and Extension Center's Mike Thornton.

The chloropicrin-based products commonly used to control the disease present worker safety issues, Thornton said, because chloropicrin is essentially tear gas. He described research on strategies to control pink root and plate rot, two soilborne diseases that plague the Eastern Oregon-Idaho area.

Thornton called metam-sodium a flexible product that could be applied in a number of ways. "The real key is to have good soil moisture," he emphasized, "and to get treatment in the onion row where those onions are going to be rooting." Placement is especially important with metam-sodium because, unlike other fumigants, it moves through the soil as a liquid rather than a gas.

The only negative to metam-sodium use, he said, is that onions treated with the product tend to show stunting. Researchers have postulated that the fumigant may kill a beneficial fungi that attaches itself to the onion root and acts as a feeder for phosphorus uptake. Onions have small root systems that are not especially good at picking up phosphorus on their own.

Trials that applied phosphorus in combination with metam-sodium treatments supported that theory. Applications of as little as 80 pounds per acre of phosphorus reduced stunting.

Surprisingly, phosphorus and metam-sodium had an interaction that increased yield. Onions not treated with metam-sodium did not respond to phosphorus, while treated crops showed significantly increased yields after phosphorus applications.

Thornton attributed the response to the disease control properties of metam-sodium, but also said the product seems to have a significant effect on plant stand. Use of the product produced high Jumbo yields but fewer Colossals, something growers should take into account. The product's weed control also contributed to the yield response.

Besides exploring fumigation products for pink root control, Thornton said researchers had also experimented with green manure crops, such as yellow mustard and oil radish. The crops were planted after the winter wheat harvest, allowed to grow for about 8 weeks, and then tilled into the soil in the fall. While sugar beet growers have successfully used the crops to control cyst nematodes, the same results were not achieved with onions.

Researchers have had less success finding products to control plate rot, Thornton said. Metam-sodium has proven effective in some trials, but hasn't provided consistent control of the disease.

*From an article appearing in **Onion World**, March/April 1997, Pages 19-20.*

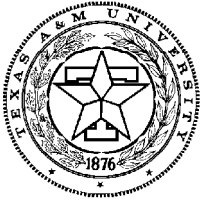
Crook-Neck Syndrome Can Cause Fruit Cracking (Continued from Page 1)

Irregular or uneven irrigation often results in drought stress in the part of the field that is irrigated last. Large, gun-type irrigation equipment can apply too much water too quickly to staked tomatoes, and if the spray is too strong, the plants can be damaged. It is difficult to adjust sprinklers--which are often used incorrectly--to apply water evenly.

Sanders recommends drip irrigation, which avoids the problems of other systems and applies a controlled amount of water around the roots of the plants. Sanders also indicates that the rate of application depends on the soil type, weather conditions, and the stage of plant development.

Up to 1.5 inches of water per week is needed by a plant spread 12 inches or more during hot periods; 0.75 inches per week is enough during cooler weather. Sanders claims irrigation rates should not exceed 0.40 inches per hour for sandy soils, 0.30 inches per hour for loamy soils, and 0.20 inches per hour for clay soils.

*From an article appearing in **The Tomato Magazine**, February/March 1997, Page 20.*



Texas Agricultural Extension Service
United States Department of Agriculture
The Texas A&M University System
College Station, TX 77843

OFFICIAL BUSINESS
Penalty for Private Use \$300

BULK RATE
POSTAGE & FEES PAID
USDA
PERMIT NO. G-268

Appearing Within . . .

- *Winter Garden Hybrid Watermelon Trial Highlights*
- *Crook-Neck Syndrome Can Cause Fruit Cracking*
- *Fumigant Found to Control Pink Root Disease*

Educational programs of the Texas Agricultural Extension Service are open to all people without regard to race, color, sex, disability, religion, age, or national origin.

Issued in furtherance of Cooperative Extension Work in Agriculture and Home Economics, Acts of Congress of May 8, 1914, as amended, and June 30, 1914, in cooperation with the United States Department of Agriculture, Zerle L. Carpenter, Director, Texas Agricultural Extension Service, The Texas A&M University System.

The information given herein is for educational purposes only. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Cooperative Extension Service is implied.

Frank J. Dainello
Extension Horticulturist
Commercial Vegetable Crops
The Texas A&M University System
College Station, TX 77843-2134

