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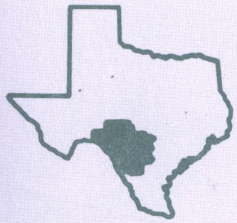

Vegetable Demonstrations in the Star Area (1970-1977)

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This publication was co-authored by:

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SPECIAL THANKS

Special thanks are extended to companies who supplied materials and to vegetable producers who cooperated in establishing these demonstrations on their farms. All who participated in these demonstrations are commended for their efforts in improving the vegetable industry of Texas.

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SNAPBEAN VARIETY DEMONSTRATION

Grower: Henry Verstuyft and Sons

Location: San Antonio

County Extension Agent: Thurman J. Kennedy, Bexar County

Supporting Specialists: Jerral D. Johnson, Extension Plant Pathologist
Jerry Parsons, Area Extension Vegetable Specialist
Sam D. Cotner, Extension Horticulturist

Date Planted: April 2, 1975

Date Evaluated: June 19, 1975

Plot Size: Plots 15 ft. long on single row. Plots planted by hand using Planet Jr. hand planter.

Conclusions: Niagara 773, NK 113-70, Sprite, Executive, Lake Geneva and Keystone 4721 produced the highest yields in the trial. Niagara 773, Executive, Lake Geneva and Keystone 4721 produced pods with good length. Executive and NK 113-70 were exceptionally uniform with regard to pod shape and size. Sprite, Executive and the yellow NK 205-141 exhibited good resistance to Anthracnose on both pods and foliage.

Results of this trial indicate Executive and Sprite have good potential for the Winter Garden area.

Table 1. Bean Variety Demonstration

Variety	Maturity[1]	Uniformity[2]	Pod Characteristics		Yield of Mature Beans
			Length[3]	Shape[4]	bu/acre (30 lb. bushels)
Early Harvest	E	M	M	O	75.0
Regal	M	M	M	O	91.0
Rainier	M	F	L	R	240.0
Green Crop	E	G	L	F	189.0
Contender	E	F	L	O	143.0

Variety	Maturity[1]	Uniformity[2]	Pod Characteristics		Yield of Mature Beans
			Length[3]	Shape[4]	bu/acre (30 lb. bushels)
Durco	M	F	S	O	103.0
Niagara 773	N	F	L	FO	315.0
Sprite	M	G	M	R	292.0
Picker	G	G	M	O	240.0
Rofin	L	G	S	R	97.0
Del Rey	M	G	M	O	126.0
Imprin	M	G	S	FO	200.0
Executive	M	E	L	FO	258.0
Lake Geneva	M	G	L	R	283.0
Processor	M	G	M	O	183.0
Princor	E	G	S	O	114.0
Miami	M	G	M	O	252.0
Keystone 4721	M	G	L	O	281.0
NK 205-141	M	E	M	R	166.0
NK 116-137	L	G	L	O	206.0
NK 116-99	M	E	M	O	116.0
NK 140	M	G	M	FO	275.0
NK 113-70	M	E	M	FO	308.0

Table 2. Bean Variety Demonstration

Variety	Pods[5]	Anthracnose Foliage[6]	Color[7]
Early Harvest	2	3	LG
Regal	2	1	LG
Rainier	4	4	DG
Green Crop	2	1	-
Contender	5	5	LG
Durco	1	2	LG
Nia 773	3	1	-
Sprite	1	1	LG
Picker	2	1	G

Variety	Pods[5]	Anthracnose Foliage[6]	Color[7]
Rofin	1	2	DG
Del Rey	1	1	G
Imprin	2	3	G
Executive	1	2	DG
Lake Geneva	3	1	G
Processor	4	2	-
Princor	4	5	LG
Miami	2	2	G
Keystone 4721	5	3	DG
NK 205-141	1	1	Y
NK 116-137	2	2	G
NK 140	5	2	G
NK 116-99	2	1	G
NK 113-70	4	2	G

[1]Maturity: E = Early
M = Mid Season
L = Late

[2]Uniformity: E = Excellent
G = Good
F = Fair

[2]Pod Length: L = 6-10 Inches or more
M = 4-6 Inches
S = 0-4 Inches

[4]Pod Shape: R = Round
O = Oval
FO = Flat Oval
F = Flat

[5]Pods: 1 = No sign of anthracnose on pods
2 = 1-5 pods in 5 ft. of row
3 = 6-10 pods in 5 ft. of row
4 = 11-15 pods in 5 ft. of row
5 = 16 pods per 5 ft. of row

[6]Foliage: 1 = No disease present
2 = Isolated lesions of leaves
3 = Foliage marked by lesions on 25-50% of foliage
4 = Foliage marked by lesions on 50-100% of foliage
5 = 100% of foliage with lesions and numerous lesions per leaf

[7]Color: LG = Light Green
G = Green
DG = Dark Green
Y = Yellow

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SNAPBEAN VARIETY DEMONSTRATION

Grower: Eugene Verstuyft

Location: San Antonio

County Extension Agent: Thurman J. Kennedy, Bexar County

Supporting Specialists: Jerral D. Johnson, Extension Plant Pathologist
Jerry Parsons, Area Extension Vegetable Specialist
Sam Cotner, Extension Horticulturist

Date Planted: April 3, 1975

Date Evaluated: June 6, 1975

Conclusions: Niagara 773 was the highest yielding bean followed closely by Rainier, NK 113-70, Lake Geneva, Executive and Green Crop. The variety NK 140, although 70 bu. below Niagara 773, was the easiest variety to harvest due to the concentrated set. The only yellow bean (NK 205-141) in the demonstration was below 200 lbs. in yield and would not be economical to grow. It was, however, the better yellow variety evaluated.

Results of Snapbean Variety Demonstration

Variety	Yield/A (30 lb. bushels)[1]
Niagara 773	327
Rainier	321
NK 113-70	321
Lake Geneva	310
Executive	310
Green Crop	304
NK 116-99	260
NK 140	252
Processor	241
NK 116-127	229

Variety	Yield/A (30 lb. bushels)
Early Harvest	183
Keystone 4721	161
Regal	151
Sprite	138
Picker	120

SNAPBEAN VARIETY DEMONSTRATION

Grower: Henry Verstuyft and Sons

Location: San Antonio

County Extension Agent: Thurman J. Kennedy, Bexar County

Supporting Specialist: Jerral D. Johnson, Extension Plant Pathologist

Date Planted: September 2, 1975

Date Evaluated: November 14, 1975

Date First Harvested: November 4, 1975

Plot Size: 1 row/600 feet in length

Conclusions: Due to low disease occurrence most varieties were free from Anthracnose. Provider, NK 137-146 and Rainier were damaged by the fungus. Other varieties showing slight damage were Spartan Arrow, Speculator, Executive and Itaska. Only Itaska was infected by Powdery Mildew.

Most of the varieties currently grown can, under the conditions of this demonstration, be grown without serious loss to disease. Under higher rainfall conditions, a foliage fungicide program would need to be carried out.

Reaction of 16 Bush Bean Varieties to Natural Occuring Anthracnose and Powdery Mildew

Variety	Seed Company	Anthracnose[1]	Powdery Mildew[2]
Ozark	Ferry-Morse	1	1
Sprite	Northrup King	1	1
NK 113-70	Northrup King	1	1
Provider	Ferry-Morse	3	1
Rebel	Ferry-Morse	1	1
Miami	Keystone	1	1

Variety	Seed Company	Anthracnose[1]	Powdery Mildew[2]
Spartan Arrow	Harris	2	1
NK 137-146	Northrup King	3	1
NCX 8005	FMC	1	1
Raider	Ferry-Morse	1	1
Rainier	Ferry-Morse	3	1
Nia 773	FMC	1	1
Speculator	Stokes	2	1
Executive	Northrup King	2	1
Itaska	Northrup King	2	2
Taylor Horticultural	Ferry-Morse	1	1

[1]Anthracnose on pods: 1 = No damage
2 = 1-2 lesions per pod
3 = 3-5 lesions per pod
4 = 6-10 lesions per pod
5 = 11+ lesions per pod

[2]Powdery Mildew: 1 = No Powdery Mildew
2 = Powdery Mildew present on leaves

BROCCOLI VARIETY DEMONSTRATION

Grower: Norment Foley

Location: Frio Town

County Extension Agent: Eldred A. Jordon, Frio County

Supporting Specialists: Sam D. Cotner, Area Extension Vegetable Specialist
Jerral Johnson, Extension Plant Pathologist

Date Planted: August 26, 1971

Date Evaluated: December 8, 1971

Conclusions: The hybrids Green Comet and Gem appear to be well adapted to production in the Winter Garden area. The open-pollinated varieties Topper 43 and Waltham 29 are also recommended.

Variety	Seed Company	Uniformity	Maturity	Plant Size	Head Size	Downy Mildew[1]
Waltham 29	Harris	Fair	Late	Large	Medium	2
Experimental Hyb. C.	Joseph Harris Co., Inc.	Good	Early	Moderate	Small	1
Experimental Hyb. A	Joseph Harris Co., Inc.	Fair	Early	Small	Large	1
10121-11441		Good	Mod. Late	Medium	---	2
Green Comet	George J. Ball Inc.	Good	Medium Early	Medium	Large	2
Spartan Early	Keystone	Fair	Med. Late	Small	Medium	1

Variety	Seed Company	Uniformity	Maturity	Plant Size	Head Size	Downy Mildew[1]
Waltham 29	Keystone	Fair	Mod. Late	Small	Medium	2
De Cicco	Ferry-Morse	Fair	Mod. Early	Medium	Medium	1
Waltham 29	Ferry-Morse	Fair	Late	Large	Medium	2
Topper 43	Ferry-Morse	Good	Mod. Late	Large	Medium	2
Sea Breeze	Ferry-Morse	Good	Mod. Early	Small	Medium	1
Early Bird DMR	Ferry-Morse	Good	Early	Small	Medium	1
De Cicco	Ferry-Morse	Fair	Mod. Early	Medium	Medium	2
Pacifica	Asgrow	Fair	Mod. Late	Large	Medium	2
Medium Late 423	Asgrow	Poor	Late	Large	---	2
Medium Late 145	Asgrow	Poor	Late	Large	---	3
Gem 87080A	Asgrow	Good	Medium	Medium	---	1
Gem	Asgrow	Good	Medium Early	Large	Large	1
Atlantic	Asgrow	Good	Late	Small	Medium	1

[1]Downy Mildew: 1 = No Downy Mildew
2 = Downy Mildew present on heads

BROCCOLI VARIETY DEMONSTRATION

Growers: Van De Walle Farms

Location: San Antonio

County Extension Agent: Thurman J. Kennedy, Bexar County

Supporting Specialists: Jerry Parsons, Area Extension Vegetable Specialist
Sam D. Cotner, Extension Horticulturist
Jerral Johnson, Extension Plant Pathologist

Date Seeded: August 7, by Peterson Brothers' Nursery

Date Transplanted: August 23, 1976

Conclusions: Results indicate that Green Comet, Bravo, Gem and Green Duke are acceptable for early producing broccoli, with Green Comet being the superior variety. Bravo is an outstanding variety but must be planted later after hot weather conditions are past. Comet's shortness is one fault. Secondary sprouting ability of Green Comet and Bravo was excellent, with Green Comet better.

Evaluations of late varieties were incomplete because of unusually cold temperatures which prematurely eliminated the trial. Cleopatra, Futura, Premium and Topper 43-70 performed satisfactorily. All should be re-evaluated.

This trial was plagued with rabbit damage. All varieties were initially eaten to the ground except Rapa Fall which was not touched. Unfortunately, Rapa Fall produced an unacceptable head and plant. The plant and leaves resembled mustard.

Variety	Maturity	Head Size	Plant Height
Green Duke	Medium	5"	11"
Rapa Fall	Medium	2"	16"
Cleopatra	Late	6"	12"
Futura	Late	5"	14"
Gem	Medium-Early	4½"	13"
Italian Green Sprouting	None Survived		
Medium Late 145	Never Headed		
Bravo	Early	5"	12"
Spartan Early	None Survived		
Green Comet	Early	5½"	10"
Premium	Medium	5"	12"
Waltham	Late	4½"	14"
Topper 43-70	Medium	4½"	13"

CABBAGE VARIETY DEMONSTRATION

Grower: Norment Foley

Location: Pearsall

County Extension Agent: Eldred A. Jordon, Frio County

Supporting Specialists: Sam D. Cotner, Area Extension Vegetable Specialist
Jerral D. Johnson, Extension Plant Pathologist

Date Planted: August 26, 1971

Date Thinned: September 16, 1971

Date Harvested: 1st - December 8, 1971
2nd - December 21, 1971
3rd - January 5, 1972

Conclusions: Of the varieties and selections evaluated Gourmet, Prime Pak, Blue Chip and Sanibel were the better varieties. Superette, although a good variety, was late in maturing. Prime Pak was the most susceptible to Black Rot of the better hybrids. 11CX67 was free of both Black Rot and Downy Mildew. Although some of the other varieties remained free of disease, they did not reach maturity and thus could not be effectively evaluated. Some of the older varieties did not hold up well and the heads split as they reached maturity. Head size was also a problem on the older processing varieties. The early maturing varieties such as Stonehead tended to be too small for economic production.

Table 2. Maturity and Head Characteristics of Cabbage Selections

Entry	%Harvest 104 Days*	117 Days	132 Days	Core[1] (in.)	Head Depth[2] (in.)	C/HD[3]	Average Head Wt. (lbs.)	Black Rot[4]	Downy Mildew[5]
Greenback	0	0	11	4.22	5.54	76	2.67	2	1
Golden Acre	15	35	0	3.90	5.56	56	1.88	2	3
Head Start	22	22	0	3.00	6.00	50	2.31	2	3
Banner	26	26	13	3.91	6.13	64	2.72	3	4
Globe	7	0	15	4.50	6.23	72	3.56	2	1
Dutchman Y. R.	0	10	13	-	-	-	-	3	1

Entry	%Harvest 104 Days*	117 Days	132 Days	Core[1] (in.)	Head Depth[2] (in.)	C/HD[3]	Average Head Wt. (lbs.)	Black Rot[4]	Downy Mildew[5]
Headmaster Y. R.	0	0	8	3.42	6.25	55	3.30	3	2
King Cole	0	24	0	3.31	6.13	54	2.20	4	2
Little Rock Y. R.	0	4	19	2.75	5.50	55	2.00	3	1
Roundup Y. R.	0	0	10	3.79	5.72	66	3.30	2	2
Superette Y. R.	0	0	23	3.41	5.63	61	2.50	2	1
Marion Market	0	0	3	3.13	5.13	61	3.00	2	1
Earliana	83	17	0	2.44	5.14	48	1.38	3	3
Burpee's Allhead Early	70	0	3	4.13	5.88	70	2.31	2	1
Burpee's Surehead	0	0	0	0	0	0	0	2	1
Little Leaguer	43	6	0	1.90	4.19	45	0.82	4	2
Copenhagen Market	45	30	0	3.50	5.77	61	1.66	2	4
Sanibel	0	39	39	3.28	5.75	57	3.57	2	1
Wisconsin Golden Acre	12	24	11	3.35	5.50	61	3.05	1	4
Ventura	29	18	0	3.38	5.93	57	2.13	2	4
Super Golden Acre	25	14	11	2.83	5.63	50	2.06	2	3
Stein's Late Flat Dutch	0	0	0	0	0	0	0	2	2
Glory of Enkhuizen	11	16	16	3.00	5.91	51	2.44	2	1
Globe 62M	0	0	0	3.75	6.50	58	1.72	2	2
Stonehead	40	40	0	2.75	4.93	56	1.72	2	2
Res. Golden Acre	13	0	13	2.66	5.19	51	1.69	2	2
Elite Y. R.	0	0	18	3.23	5.31	61	2.22	1	2
Super Boy	0	0	50	3.35	6.16	54	3.39	1	1
Blue Chip	0	18	14	3.41	5.94	57	2.00	2	1
Prime Pak	17	24	16	2.88	5.56	52	2.04	4	3
Gourmet	0	10	41	3.75	6.19	61	3.75	2	1
NCX 901	0	17	17	3.81	6.13	62	2.80	2	1
NCX 902	0	0	21	3.60	5.22	69	2.14	2	2
NCS 903	28	9	22	3.16	7.50	42	1.83	2	3
11cx63	0	22	0	2.72	6.41	42	3.14	3	4
11cx22	0	53	0	2.00	5.43	37	1.38	4	4
11cx31	0	32	42	3.54	6.00	59	2.67	2	2
11cx67	44	31	8	2.97	6.00	50	2.08	1	1

Entry	104 Days*	%Harvest 117 Days	132 Days	Core[1] (in.)	Head Depth[2] (in.)	C/HD[3]	Average Head Wt. (lbs.)	Black Rot[4]	Downy Mildew[5]
70C 8 R1	76	0	0	1.63	3.69	44	0.79	4	2
70C 4 R1	0	0	0	0	0	0	0	2	1
70C 545 R1	0	6	0	0	0	0	0	3	3
70C 14 R1	0	0	0	0	0	0	0	1	1
70C 531 R1	0	0	0	0	0	0	0	1	1
70C 527 R1	8	8	16	2.63	5.88	45	2.75	1	4
70C 15 R1	0	0	0	0	0	0	0	2	2
W-3040	17	24	21	2.88	5.00	52	3.1	2	1
M-3010	0	0	31	2.67	4.88	55	1.82	1	3
U-3000	37	26	-	2.84	5.81	49	2.00	2	3
Hy. 15	21	4	29	2.30	4.78	48	1.70	2	2
Hy. 2	15	38	19	2.52	5.75	44	2.50	1	1
Hy. 6	0	13	15	3.19	6.06	53	2.60	2	1
Hy. 7	0	15	0	0	0	0	0	1	2

*Days from seeding

[1]Core: Measurement from base of head to tip of core in inches

[2]Head Depth: Measurement from base to top of head in inches

[3]C/HD: Core/Head Depth

[4]Black Rot Index: 1 = Trace of disease
5 = Complete loss of foliage due to Black Rot.

[5]Downy Mildew: 1 = Trace of disease
5 = Complete loss of foliage due to Downy Mildew.

Comments on Cabbage Selections

Name Selections	Comments
Roundup	Variable head size, Black Rot in head
Prime Pak	Black Rot in head, severe Downy Mildew
Superette	Loose head
Burpee's Allhead Early	Flat, poor quality, Black Rot in head
Super Boy	Flat, loose head, cold tolerant
Elite	Variable head shape
Stein's Late Flat Dutch	Large, poor quality head
Glory of Enkhuizen	Variable head size
Globe 62M	Variable head shape
Gourmet	Flat head

Experimental Selections	Comments
Exp. Hyb. M-3010	Tight, solid head
Exp. Hyb. 2	Flat, firm head
70C 15 R1	Tight, quality head
70C 527 R1	Small, hard head
70C 8 R1	Black Rot in head
NCX 901	Flat head
Exp. Hyb. W-3040	Head split before maturity
Exp. Hyb. 11cx31	Flat head

CABBAGE VARIETY DEMONSTRATION

Grower: Buddy Oelkers

Location: Carrizo Springs

County Extension Agent: Oliver J. Reinhart, Jr., Dimmit County

Supporting Specialists: Sam Cotner, Area Extension Vegetable Specialist
Jerral D. Johnson, Extension Plant Pathologist

Date Planted: September 6, 1972

Date Irrigated: September 7 and 8
September 14
October 6
October 28
November 11
December 27

Preplant Fertilizer: 280 lbs. 18-46-0 broadcast

Additional Fertilizer: 250 lbs. 21-0-0 banded October 4, 1972

Insect Control: Lannate - 25 applications

Date Evaluated: December 7, 1972
December 19, 1972
January 18, 1973

Conclusions: Gourmet, Sanibel and Prime Pak performed well in this trial. Market Prize and Green Boy showed susceptibility to Downy Mildew on the head and wrapper leaves. Green Boy also had severe internal tip burn. Results of this trial indicate Gourmet, Sanibel and Prime Pak are well adapted to fall planting in the Winter Garden area.

Cabbage Variety Trial

Variety	Date of 1st Harvest	Color	Plant Size	Uniformity	Downy Mildew	Cold Injury
Jet Pak	12/7/72	G	S	Fair	4	9
Market Victor	12/7/72	B	S	Good	2	9
Sanibel	12/7/72	BG	M	Good	2	6
Super Boy	12/19/72	B	L	Good	2	1
Market Topper	12/19/72	BG	M	Fair	4	7
Market Prize	12/19/72	BG	M	Good	3	5
Gourmet	12/19/72	BG	M	Excellent	2	4
Green Boy	12/19/72	G	M	Excellent	5	2
Blue Chip	1/18/73	B	M	Fair	3	7
Prime Pak	1/18/73	BG	L	Good	1	4
Superette	1/18/73	BG	M	Good	4	6
Rio Verde*	-	BG	L	Good	1	3
Round-up*	-	BG	L	Good	1	6
Greenback*	-	G	S	Poor	2	10

*Did not harvest due to freeze damage.

Cabbage Variety Trial

Variety	Av. Core (in inches)	Head Depth (in inches) Average	Head Width (in inches) Average	C/HD	HW/HD	Av. Head Wt. (in pounds)
Jet Pak	3.13	5.93	5.75	0.53	0.97	2.7
Market Victor	3.40	6.18	5.73	0.55	0.93	2.7
Sanibel	3.34	6.48	6.55	0.51	1.01	3.4
Super Boy	4.30	7.15	7.58	0.60	1.06	4.9
Market Topper	4.10	6.00	5.80	0.68	0.97	3.2
Market Prize	3.98	6.10	6.30	0.65	1.03	3.8

Cabbage Variety Trial
(continued)

Variety	Av. Core (in inches)	Head Depth (in inches) Average	Head Width (in inches) Average	C/HD	HW/HD	Av. Head Wt. (in pounds)
Gourmet	3.50	6.40	6.70	0.55	1.05	3.6
Green Boy	3.30	6.30	6.70	0.52	1.06	3.2
Blue Chip	2.90	6.10	5.70	0.48	0.93	2.8
Prime Pak	2.70	5.40	5.20	0.50	0.96	2.7
Superette	3.55	6.90	6.13	0.51	0.89	3.1
Rio Verde	-	-	-	-	-	-
Round-up	-	-	-	-	-	-
Greenback	-	-	-	-	-	-

Evaluation Definitions:

Downy Mildew:
1 - No disease
2 - Less than 1% of head spotted
3 = Spotting on head 1-5%
4 = Moderately severe head spotting 6-10%
5 = Severe spotting

Cold Injury:
1 = No injury
10 = Severe injury

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SPRING CABBAGE VARIETY DEMONSTRATION

Grower: Charles Halbardier

Location: Hondo

County Extension Agent: Glenn Bragg, Medina County

Supporting Specialists: Jerral Johnson, Extension Plant Pathologist
Sam Cotner, Extension Vegetable Specialist

Date Planted: March 1, 1973

Date Evaluated: June 3
June 6
June 15
June 22

Conclusions: In this trial, Blue Chip and Prime Pak performed well and produced high quality heads with good internal characteristics. The red variety Red Head appears to have potential for spring production in the Winter Garden area.

Variety	Date of 1st Harvest	Maturity	Color	Plant Size	Uniformity	Black Rot[1]
Harvester Queen	June 3	Early	Light Green	Medium	Fair	5
Blue Chip	June 6	Early	Blue Green	Medium	Good	4
Prime Pak	June 6	Early	Blue Green	Medium	Good	3
Gourmet	June 6	Early	Blue Green	Medium	Excellent	2
Experimental Hybrid 31	June 15	Medium	Green	Med. Large	Fair	3
Super Boy	June 22	Med. Late	Green	Large	Fair	5
Red Head	June 22	Med. Late	Red	Medium	Fair	3
Red Meteor	June 22	Med. Late	Red	Med. Small	Poor	4

[1]Black Rot Index: 1 = No disease
5 = Complete plant loss due to disease

Variety	Core Length (in.)	Head Depth (in.)	Head Width (in.)	C/HD	HW/HD	Ave. Head Wt.(Lbs.)	Comments
Harvester Queen	3.55	6.50	5.75	0.55	0.88	2.7	Puffy, somewhat loose head
Blue Chip	2.88	6.2	5.46	0.46	0.88	3.0	Solid, tight head
Prime Pak	3.15	5.75	5.55	0.54	0.96	2.5	Solid head with somewhat puffy interior
Gourmet	3.25	5.66	5.71	0.57	1.01	2.67	Somewhat flat head and occasional puffiness
Experimental Hybrid 31	2.85	5.55	6.25	0.51	1.13	3.17	Puffy, flat head
Super Boy	3.45	6.05	6.30	0.37	1.04	3.92	Flat, puffy head
Red Head	3.0	5.70	4.95	0.53	0.87	2.25	Good internal and external color
Red Meteor	3.05	5.40	5.10	0.56	0.94	2.50	Small, tight head

CABBAGE VARIETY DEMONSTRATION

Grower: Warren Wagner Farms

Location: Crystal City

County Extension Agents: Dwight Harkey, Zavala County
Oliver Reinhart, Dimmit County

Supporting Specialists: Sam D. Cotner, Extension Horticulturist
Jerral D. Johnson, Extension Plant Pathologist

Date Planted: December 26, 1973

Date Irrigated: December 28, 1973

Plot Size: Two rows/variety

Date Evaluated: May 7, 1974 and May 15, 1974

Conclusions: The varieties Market Prize, Gourmet, Sanibel, Prime Pak and Rio Verde were the better varieties evaluated. Prime Pak showed damage to Alternaria leaf spot while the other varieties remained free of this disease.

None of the new selections were better than the varieties currently being grown.

Table 1. Plant Characteristics of Selected Cabbage Release

Selection	Seed Company	Maturity	Color	Uniformity	Plant Size	Remarks
Exp. 1100	Baxter	M	G	P	S	Slightly bald head
Exp. 3090	Baxter	M	BG	P	L	Purple head
XP 1037	Asgrow	E	G	F	S	Bald head, purple, splitting
Exp. 1234	Baxter	M	G	F	M	Purple

Selection	Seed Company	Maturity	Color	Uniformity	Plant Size	Remarks
Exp. 917	NK	M	G	F	M	
Exp. ACR	Baxter	M	G	G	M	
Exp. Hy. 4	Reed Brothers	M	BG	D	M	
Exp. Hy. 13x	Baxter	L	BG	F	M	
Exp. Hy. 1092	Baxter	M	G	G	S	Purple
Hy. 5	Abbot & Cobb	M	BG	F	L	Good wrapper leaves, Downy Mildew, Black Rot
Market Prize	Harris	M	G	G	M	Black Rot
Badger Belle	Dessert	L	BG	-	S	Poor stand
Jet Pak	NK	E	G	G	S	Bald head, purple
Gourmet	Ferry-Morse	M	BG	F	M	Purple, Alternaria
Badger Marker	Asgrow	M	G	P	S	Bald head, poor quality
Market Victor	Harris	E	G	G	S	Slight splitting
Market Topper	Harris	M	G	P	M	Bald head
Rio Verde	NK	L	BG	F	L	Good wrapper leaves, Alternaria
Sunup	Harris	E	G	G	S	Splitting, bald head, Alternaria
Harvester Queen	NK	E	G	G	S	Alternaria, bald head

Table 2. Head Characteristics of Selected Cabbage Releases

Selection	Core Length (in.)	Head Depth (in.)	Head Width (in.)	C/HD	HW/HD	Average Head Weight (lbs.)
Exp. 1100	3.0	6.5	61.	.46	0.94	2 lb. 10 oz.
Exp. 3090	3.8	5.9	5.9	.59	1.0	2 lb. 13 oz.
Exp. 1092	2.6	5.7	4.6	.46	0.80	2 lb. 2 oz.
Exp. 4	3.0	5.8	5.2	.51	0.90	2 lb. 10 oz.

Selection	Core Length (in.)	Head Depth (in.)	Head Width (in.)	C/HD	HQ/HD	Average Head Weight (lbs.)
XP 1037	3.2	6.3	4.6	.60	0.87	1 lb. 14 oz.
Hy. 917	2.6	4.3	5.8	.60	1.3	2 lb.
Hy. 1234	2.6	6.0	5.7	.43	0.95	2 lb. 2 oz.
Market Topper	2.9	5.2	5.5	.56	1.05	2 lb. 13 oz.
Sun Up	2.7	5.9	4.8	.46	0.81	2 lb. 3 oz.
Market Victor	2.7	5.7	5.0	.47	0.88	2 lb. 6 oz.
Badger Market	3.6	6.4	5.4	.56	0.84	2 lb. 6 pz.
Prime Pak	3.3	5.8	5.7	.57	0.98	2 lb. 6 oz.
Sanibel	3.1	6.5	5.4	.47	0.83	2 lb. 11 oz.
Gourmet	3.1	5.7	5.1	.54	0.89	2 lb. 5 oz.
Jet Pak	3.0	6.1	5.2	.49	0.85	2 lb. 8 oz.
Hy. ACR	3.1	6.2	5.4	.50	0.87	2 lb. 10 oz.
Harvester Queen	2.9	6.0	5.5	.48	0.92	2 lb. 5 oz.
#5	3.0	5.3	5.4	.56	1.0	3 lb.
Market Prize	4.1	5.5	5.4	.74	0.98	2 lb. 11 oz.
Rio Verde	3.5	5.5	5.6	.64	0.97	3 lbs. 1 oz.
13X	2.7	4.6	5.7	.58	0.81	2 lbs. 8 oz.
Badger Belle	3.5	5.4	5.0	.64	1.10	2 lbs. 3 oz.

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CABBAGE VARIETY DEMONSTRATION

Grower: Verstraeten Farm

Location San Antonio

County Extension Agent: Thurman J. Kennedy, Bexar County

Supporting Specialists: Jerral Johnson, Extension Plant Pathologist
Sam D. Cotner, Extension Horticulturist
Jerry Parsons, Area Extension Vegetable Specialist

Date Planted: August 21, 1975

Date Evaluated: November 18, 1975

Conclusions: As in past trials, Gourmet, Market Prize, Rio Verde, Sanibel and Prime Pak performed well. Of the new varieties, Cole Cash, Shamrock and Super Pak show potential and are worthy of additional consideration and evaluation. Iron Head is a savory cabbage which shows little promise. All of the early varieties exhibited a tendency to split and produce bald heads.

Variety	Seed Company	Head Diameter (in.)	Maturity Date (November)	Weight[1] (lbs.)	Downy Mildew Rating[2]	Cold Damage[3]
Market Prize	Harris	6 1/4"	15	3.2	1	+
Sanibel 268	Harris	7"	15	3.9	1	-
Gourmet	Ferry-Morse	6 1/2"	15	2.2*	1	+
Cole Cash	FMC	6"	20	3.0	1	-
Rio Verde	Northrup King	7 1/2"	20	4.1	2	-
Hercules	Northrup King	8"	20	2.6	2	+
Iron Head	Herbst Brothers	5 1/2"	5	1.8	1	+
Mercury	Dessert	5 1/4"	20	2.9*	2	+
Exp. Hyb. 6038	Keystone	6"	20	2.1*	3	+
Green Boy	Northrup King	6 1/4"	20	2.8	2	+

Variety	Seed Company	Head Diameter (in.)	Maturity Date (November)	Weight[1] (lbs.)	Downy Mildew Rating[2]	Cold Damage[3]
Round Up	Ferry-Morse	5 1/2	20	2.4	1	+
Prime Pak	Ferry-Morse	6 3/4	20	3.9	1	-
Shamrock	Pieters-Wheeler	6 1/2	10	4.1	2	+
Earlitimes	Keystone	7	5	3.2	2	+
Earlibird	Keystone	6 1/2	10	3.7	1	+
Earlimart	Keystone	6	5	3.5	2	+
Super Pak	Reed	5	5	2.2	1	-
Super YR Hyb.	Reed	7 1/2	15	5.6	1	-
Erin	Pieters-Wheeler	6	15	2.9	2	+

[1] Average of 10 heads

[2] Downy Mildew: 1 = No disease
2 = Isolated spots on head (Av. 2-4/head)
3 = Numerous spots on head (Av. 5-15/head)
4 = Numerous spots on head and lower foliage damaged
5 = Plant totally destroyed by disease

[3] Cold Damage: + = Plants showing cold damage
- = Plants not showing cold damage

CABBAGE VARIETY DEMONSTRATION

Grower: Charles Halbardier

Location: Hondo

County Extension Agent: Glenn C. Bragg, Medina County

Supporting Specialists: Jerral D. Johnson, Extension Plant Pathologist
Jerry M. Parsons, Area Extension Vegetable Specialist
Sam D. Cotner, Extension Horticulturist

Date Planted: July 22, 1976

Date Evaluated: Fall 1976

Conclusions: Due to the weather in the fall of 1976, the varieties were larger than normal. This should be taken into consideration when examining the results.

Early Varieties. Hy 1245 (Guardian) and Chogo were acceptable varieties. Chogo was an extremely early variety which appeared to hold up well in the field. Chogo was susceptible to Downy Mildew. Hy 1245 was the more disease resistant of the two.

Medium Varieties. Market Prize and Prime Pak performed well, however, the weight of Market Prize was greater than desired by the market. Of the new varieties, Big Cropper and Hy 1241 (Defender) appear to have potential for the Winter Garden Area. They both have good disease resistance.

Medium Late to Late Varieties. Tokoyo Pride and Saf Guard appear to have potential for further planting. Plant characteristics and disease resistance were good for both varieties.

CABBAGE VARIETY CHARACTERISTICS

Variety	Maturity	Uniformity	Color	Plant Size	Downy Mildew	Black Rot
Ferry Morse						
Prime Pak	Medium	Fair	Blue-Green	Medium	1	2
Titanic-90	Late	Fair	Blue-Green	Large	3	1
Harris						
Market Prize	Medium Early	Fair	Blue-Green	Medium	1	1
Hy 1240	Medium	Good	Blue-Green	Small	1	1
Hy 1241	Medium	Fair	Blue-Green	Small	1	1
Hy 1245	Early	Good	Blue-Green	Small-Medium	1	1
FD 85	Late	Poor	Blue-Green	Small	3	3
Keystone						
Earlimart	Early	Poor	Blue-Green	Medium	3	1
Hy 1557	Early	Fair	Green	Small	4	1
Hy 1558	Early	Good	Green	Small	2	1
Hy 1559	Medium Late	Poor	Green	Medium	1	3
Sakata						
Big Cropper	Medium	Good	Blue-Green	Large	1	1
Chogo	Early	Good	Green	Small	3	1
Green Express	Medium	Good	Green	Small	2	1
Leo	Early	Excellent	Green	Small	1	2
Mars	Late	Good	Blue-Green	Large	1	1
Pak Rite	Early	Good	Green	Medium	2	1
Princess	Early	Fair	Green	Small	1	1
Saf Guard	Late	Fair	Blue-Green	Large	1	1
Saturn	Late	Fair	Blue-Green	Large	1	2
Scorpio	Medium	Fair	Blue-Green	Medium	1	1
Sentinel	Late	Good	Blue-Green	Large	4	1
Tokoyo Pride	Late	Fair	Blue-Green	Large	1	2

Downy Mildew Ratings: 1 = No disease
2 = Isolated spots on head
3 = Scattered spots on several heads
4 = Lower foliage beginning to droop
5 = Lower foliage dropping

Black Rot Ratings: 1 = No disease
2 = Isolated lesions
3 = Several lesions
4 = Lesions developing and showing definite signs of enlarging
5 = Lesions in head

CABBAGE HEAD CHARACTERISTICS

Variety	Av. Head Wt. (lbs.)	Head Height[1] (in.)	Head Width[2] (in.)	Core[3] (in.)	C/H[4]	W/H[5]
Ferry Morse						
Prime Pak	3.3	6.0	7.0	3.3	.6	1.2
Titanic-90	4.0	7.0	7.0	3.2	.5	1.0
Harris						
Market Prize	5.0	7.0	8,0	4.0	.6	1.2
Hy 1240	3.0	6.0	6.4	3.4	.6	1.2
Hy 1241	3.0	6.0	6.0	3.1	.5	1.1
FD 85	Not Mature at Last Harvest					
Keystone						
Earlimart	4.0	5.1	7.0	3.0	.6	1.4
Hy 1557	4.0	6.3	7.0	3.4	.5	1.1
Hy 1558	5.0	7.0	8.2	4.1	.6	1.2
Hy 1559	4.0	6.3	7.4	3.4	.5	1.2
Sakata						
Big Cropper	5.0	7.0	8.0	4.0	.6	1.2
Chogo	4.0	7.0	7.0	3.4	.5	1.0
Green Express	4.0	7.0	7.0	4.0	.5	1.0
Leo	4.0	5.0	8.0	2.4	.5	2.0

Variety	Av. Head Wt.	Head Height[1]	Head Width[2]	Core[3]	C/H[4]	W/H[5]
Sakata						
Mars	3.0	6.0	6.3	4.0	.6	1.1
Pak Rite	4.0	6.1	7.0	3.3	.5	1.1
Princess	5.0	7.0	7.4	4.0	.6	1.1
Saf Guard	5.0	6.0	7.0	4.0	.6	1.2
Saturn	5.4	6.0	10.0	3.0	.5	2.0
Scorpio	3.0	6.2	6.3	3.1	.5	1.0
Sentinel	Not Mature at Last Harvest					
Tokoyo Pride	3.0	5.0	7.0	2.4	.5	1.3

[1]Head Height: Distance from base of head to top of the head

[2]Head Width: Distance from one side to the other side at the point of greatest distance

[3]Core: Distance from base of core to the top-most point of the core

[4]C/H: Core/Head Height

[5]W/H: Head Width/Head Height*

*Less than 1 = slightly point to pointed head
Exactly 1 = round head
Greater than 1 = slightly flat to flat head

CABBAGE VARIETY DEMONSTRATION - BLACK ROT RESISTANCE

Grower: Byrd Farms

Location: Crystal City

County Extension Agent: Ray Caraveo, Zavala County

Supporting Specialist: Jerral D. Johnson, Extension Plant Pathologist

Date Planted: July 20, 1976

Date Evaluated: November 18, 1976

Conclusions: Chogo appeared to be the best of the early varieties planted. It has a marketable head with good plant characteristics. It was severely damaged by Downy Mildew, but was resistant to Black Rot. Tokoyo Pride, Big Cropper, Sentinel, and Saf Guard performed well under the conditions of the demonstration. Big Cropper and Sentinel were badly damaged by Downy Mildew.

CABBAGE VARIETY CHARACTERISTICS

Variety	Maturity	Uniformity	Color	Plant Size	Downy* Mildew	Black Rot**	Av. Head Wt. (lbs)	Head Height (inches)	Head Width (inches)	Core[1]	C/H[2]	W/H[3]
Tokoyo Pride	Late	Fair	BG	S	2	2	2.8	5.0	7.0	2.3	.5	1.3
Leo	Medium	Good	BG	S	2	2	1.8	5.0	6.0	3.2	.7	1.3
Green Express	Early	Good	G	S	5	1	2.6	6.1	6.0	4.0	.6	.7
Saturn	Medium	Good	B	L	2	2	3.8	5.0	8.4	3.0	.6	1.7
Sanibel	Medium	Poor	B	M	2	1	2.9	6.0	6.1	3.0	.5	1.0
Pak Rite	Early	Fair	BF	S	2	1	2.8	6.0	6.0	3.1	.5	1.0
Chogo	Very Early	Good	G	S	3	1	3.0	6.1	6.0	4.0	.6	.94
Princess	Medium	Good	BG	S	4	1	2.4	6.0	6.0	3.3	.6	.98

Variety	Maturity	Uniformity	Color	Plant Size	Downy* Mildew	Black Rot**	Av. Head Wt. (lbs)	Head Height (inches)	Head Width (inches)	Core[1]	C/H[2]
Big Cropper	Late	Fair	BG	L	3	1	4.0	5.4	6.2	3	.5
Scorpio	Medium	Good	BG	S	1	3	3.0	6.0	6.0	3.2	.6
Capricorn	Late	Fair	BG	M	2	1	2.2	5.1	6.0	3.1	.6
Mars	Late	Good	BG	L	1	1	3.1	5.0	7.4	3.0	.5
Hercules	Late	Good	BG	L	1	2	4.0	5.4	8.0	3.4	.6
Sentinel	Very Late	Fair	BG	L	3	1	3.0	5.1	6.2	3.1	.6
Saf Guard	Late	Fair	BG	L	2	1	2.2	5.2	6.1	3.4	.7

[1]Core - Distance from base of core to top of core

[2]C/H - Ratio of core length to head height

[3]W/H - Ratio of head width to head height
less than 1 = pointed head
greater than 1 = flat head

*Downy Mildew - 1 = No Disease
5 = Sever Infection

**Black Rot - 1 = No Disease
2 = Diseases on head

CABBAGE VARIETY DEMONSTRATION

Grower: Warren Wagner Farm

Location: Crystal City

County Extension Agent: Ray Caraveo, Zavala County

Supporting Specialists: Jerral D. Johnson, Extension Plant Pathologist
Jerry M. Parsons, Area Extension Vegetable Specialist
Sam D. Cotner, Extension Vegetable Specialist

Date Planted: August 4, 1976

Date Evaluated: November 16, 1976

Weather: Clear, hot 92°F

Fertilizer: 400 lb/A 16-20-0 (Chiseled into center of bed)

Moisture, Soil: Planted dry, irrigated within 2 days

Herebicide: Treflan

Row Spacing: 42-inch row

Plot Information: 2 rows per bed, 2 varieties per bed, plots approximately 300 ft. long

Conclusions: Early Varieties. From the results of this demonstration the better early varieties are Chogo and Earlibird. Both appear to have potential for fall planting. Both varieties had heads weighing 2.8 lbs. with good internal structure. They appeared to hold well in the field. Chogo appeared to be damaged more by Downy Mildew than Earlibird. They were both slightly affected by Black Rot.

Medium Varieties. The standard varieties Gourmet and Market Prize still appear to be excellent varieties for fall planting. Market Prize in this demonstration was fairly resistant to disease whereas in the past it has had problems with Black Rot and Downy Mildew. Of the new selections evaluated, Tokoyo Pride and Hy 1245 (Guardian) appear to have potential for the fall planting. Hy 1245 had better disease resistance than Tokoyo Pride.

Medium Late to Late. The standards Prime Pak, Superette, and Rio Verde still were highly acceptable.

The newer varieties Hercules (NK), Big Cropper, Saf Guard, and Sentinel appear to have potential for the winter garden area. Sentinel, while producing an excellent head, was marked by numerous frilly wrapper leaves. Saf Guard had the best disease resistance of any variety evaluated.

CABBAGE VARIETY CHARACTERISTIC

Variety	Maturity	Uniformity	Color	Plant Size	Black Rot	Downy Mildew
Asgrow						
Enterprise	Medium	Fair	Blue-Green	Small	2.5	7.0
XP 1058	Medium	Fair	Blue-Green	Small	4.0	3.0
Baxter						
Hy 1100	Medium	Fair	Blue-Green	Medium	2.0	1.0
Ferry Morse						
Superette	Medium-Late	Fair	Blue-Green	Medium	2.0	2.0
Prime Pak	Medium-Late	Fair	Blue-Green	Medium	2.5	1.0
Gourmet	Medium	Fair	Blue-Green	Medium	1.5	1.5
Titanic 90	Late	Fair	Blue-Green	Large	2.5	1.0
Roundup	Late	Fair	Green	Large	4.5	1.5
Harris						
Hy 1240	Medium	Poor	Green	Large	1.0	1.5
Defender	Medium	Fair	Blue-Green	Medium	2.5	4.0
Guardian	Medium	Fair	Blue-Green	Medium	1.5	2.5
Hi-Dri 6426	Late	Fair	Blue-Green	Large	2.0	1.0
Market Prize	Medium	Good	Blue-Green	Large	2.5	2.0
Celtic	Late	Poor	Blue-Green	Large	1.0	1.0
Sanibel 287	Medium-Late	Fair	Blue-Green	Medium-Large	3.0	1.5
Keystone						
Hy 1557	Medium-Early	Fair	Green	Small	2.5	---
Hy 1558	Early	Good	Blue-Green	Small	3.0	4.5
Hy 1559	Medium	Fair	Blue-Green	Medium	2.0	3.5

Variety	Maturity	Uniformity	Color	Plant Size	Black Rot	Downy Mildew
stone						
arlimart	Early	Fair	Good	Small	2.0	3.0
arlitimes	Medium	Fair	Blue-Green	Small	2.0	2.0
arlibird	Early	Good	Green	Small	2.0	2.0
thrup King						
izard	Early	Fair	Blue-Green	Small	2.0	2.0
ercules	Late	Good	Blue-Green	Medium-Large	2.0	1.0
io Verde	Late	Fair	Blue-Green	Large	2.0	1.5
reen Boy	Medium-Late	Good	Blue-Green	Large	3.5	2.5
ata						
rincess	Early	Good	Green	Small	1.5	2.5
reen Express	Medium	Good	Blue-Green	Small	2.0	4.5
okoyo Pride	Medium	Fair	Blue-Green	Large	2.5	3.5
hogo	Early	Good	Green	Medium	2.0	3.5
ig Cropper	Medium-Late	Good	Blue-Green	Medium-Large	2.0	2.5
entinel	Late	Fair	Blue-Green	Medium-Large	1.0	2.5
af Guard	Late	Fair	Green	Medium	1.0	1.0
apricorn	Late	Fair	Blue-Green	Medium	1.5	2.0
ercules	Late	Fair	Blue-Green	Large	2.0	2.0
aturn	Late	Fair	Blue-Green	Large	1.5	1.5

ny Mildew Rating:
1 = No disease
2 = Isolated lesions
3 = Numerous lesions
4 = Numerous lesions plus some defoliation
5 = Numerous lesions plus severe defoliation

ck Rot Rating:
1 = No disease
2 = Isolated lesions
3 = Scattered lesions
4 = Numerous lesions
5 = Black Rot in head

CABBAGE HEAD CHARACTERISTICS

Variety	Av. Head Wt.[1] (lbs.)	Head Height[2] (in.)	Head Width[3] (in.)	Core[4] (in.)	C/H[5]	W/H[6]
Asgrow						
Enterprise	1.6	4.7	4.7	2.8	.6	1.0
XP 1058	3.0	6.3	6.4	3.4	.5	1.0
Baxter						
Hy 1100	2.7	5.9	5.9	3.0	.5	1.0
Ferry Morse						
Superette	2.6	6.5	6.5	4.0	.6	1.0
Prime Pak	3.2	6.2	6.7	3.7	.6	1.1
Gourmet	2.9	6.2	6.7	4.1	.7	1.1
Titanic 90	3.9	7.5	7.7	4.0	.5	1.0
Roundup	Not mature at last harvest					
Harris						
Hy 1240	3.3	5.7	6.1	3.3	.6	1.1
Hy 1241	3.2	6.2	5.7	2.9	.5	.9
Hy 1245	2.4	5.6	5.4	2.8	.5	1.0
Hi-Dri 6426	2.6	6.5	6.3	3.9	.6	1.0
Market Prize	2.6	5/7	5.9	3.5	.6	1.0
Celtic	Not mature at last harvest					
Sanibel 287	1.8	5.4	5.5	3.2	.6	1.0
Keystone						
Hy 1557	2.7	6.3	6.4	3.1	.5	1.0
Hy 1558	2.9	5.7	6.2	3.3	.6	1.0
Hy 1559	2.8	6.1	6.0	3.1	.5	1.0
Earlimart	2,8	5.2	6.4	3.3	.6	1.2
Earlitimes	3.1	6.2	6.4	3.6	.6	1.0
Earlibird	2.8	5.9	6.2	4.0	.7	1.0
Northrup King						
Wizard	2.4	4.7	5.1	3.3	.6	.9
Hercules	2.7	5.8	6.8	3.2	.6	1.2
Rio Verde	3.2	6.0	7.2	3.8	.6	1.2
Green Boy	3.8	6.7	7.1	4.0	.6	1.1

Variety	Av. Head Wt.[1] (lbs.)	Head Height[2] (in.)	Head Width[3] (in.)	Core[4] (in.)	C/H[5]	W/H[6]
Sakata						
Princess	2.5	5.8	5.8	3.5	.6	1.1
Green Express	2.7	6.1	5.7	3.0	.5	.9
Tokoyo Pride	3.1	5.2	7.1	2.6	.5	1.4
Chogo	2.8	5.9	6.2	3.5	.6	1.0
Big Cropper	2.4	5.5	6.5	3.2	.6	1.2
Sentinel	2.1	5.2	5.6	3.3	.6	1.1
Saf Guard	2.0	5.1	6.0	3.4	17	1.2
Capricorn	1.9	4.8	5.4	3.0	16	1.1
Hercules	6.3	6.4	9.3	3.4	.5	1.5
Saturn	2.9	4.6	7.9	2.7	.6	1.7

[1]Average Head Weight = Average wt. of 5 heads selected at random

[2]Head Height = Distance from base of head to top of head

[3]Head Width = Distance across mid-point of head from one side to the other

[4]Core = Distance from base of head to top of the core

[5]C/H = Core/Height of head

[6]W/H = Width of head/Height of head*

*Examples: Less than 1 = slightly pointed to pointed
Exactly 1 = round
Greater than 1 = slightly flat to flat

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COLD HARDINESS
CABBAGE VARIETY DEMONSTRATION

Grower: Lawrence Wilde

Location: Uvalde

County Extension Agent: Darrell Smith, Uvalde County

Supporting Specialists: Jerral D. Johnson, Extension Plant Pathologist
Jerry M. Parsons, Area Extension Vegetable Specialist
Sam D. Cotner, Extension Horticulturist

Date Planted: September 13, 1976

Plot Size: Plots are 200 feet long with two rows per bed.

Conclusions: Severe cold weather (below 20°F) occurred in late November. Varieties which exhibited tolerance to cold included Hercules (NK), Sentinel, Hercules (Sakata) and Tokoyo Pride. Leo showed good cold tolerance but produced an extremely flattened head. The variety Sentinel shows promise and warrants further evaluations.

Variety	Freeze Damage[1] 12/17/76	Freeze Damage[2] 2/18/77
Pak Rite	4	3.5
Hercules	1	2
Defender	3	5
Baxter 1100	5	5
Capricorn	2	3
Scorpio 84	2	4.5
Green Express 32	4	5
Exp 1557	5	5
Satellite	3	3.5
Prime Pak	3	3

Variety	Freeze Damage[1]	Freeze Damage[2]
Green Boy	4	4
FM Roundup	4	2
Sentinel 19	1	1
Chogo	3	2.5
287 Sanibel	3	4
Sakata Hercules	1+	1
Exp 1558	4	5
Early Mart	2	5
Tokoyo Pride	2	2
Market Prize	5	4.5
Big Cropper	5	2
Sanibel	4	4.5
Saf Guard	2	2
Wizard	3	4.5
Saturn 45	2	2
Leo 80	1+	1
Exp 1559	5 or 6	4
Superette	5	7
Rio Verde	3	3
Guardian	3	4
Mars	3	5
Gourmet	2	3
Harris 1240	5	5
Princess 39	5	5
FM Titanic 90	4	3
Satellite	3	3.5

[1]Freeze Damage: 1 = No Damage
5 = Severe Damage

[2]Freeze Damage: 1 = No Damage
5 = Severe Damage

CANTALOUPE WEED CONTROL DEMONSTRATION

Grower: Russel Rehm

Location: Sabinal

County Extension Agent: Darrell Smith, Uvalde County

Supporting Specialist: Sam D. Cotner, Area Vegetable Specialist

Date Planted: March, 1971

Date Evaluated: April 23 and 29, 1971

Method of Application: Broadcast in 30 gallons/acre

Conclusion: The tank mix of Prefar + Alanap (12 lb. + 6 lb.) pre-plant incorporated gave almost perfect control of pigweed, but caused some injury to the crop. At the reduced rate of 6 lb. + 3 lb., crop injury was still evident. The results of this trial indicate that Prefar applied on the surface after planting results in good control of pigweed with very little crop effect. TOK E-25 resulted in severe crop damage.

RESULTS

	Treatment	Method	Acres Rate/lb.	%Injury to Crop 4/23	%Injury to Crop 4/29	%Pigweed Control* 4/23	%Pigweed Control* 4/29
1.	Prefar/alanap	ppi	12 + 6	0	30	99	100
2.	Prefar	ppi	6	0	0	43	53
3.	Planavin	ppi	2	15	20	86	88
4.	Prefar	ppi	3	0	0	40	83
5.	Prefar/alanap	ppi	6 + 3	20	30	86	94
6.	Planavin	pre	1	0	20	70	67
7.	Prefar	pre	6	0	7	88	85
8.	TOK E-25	pre	4	87	83	99	85
9.	Check			0	0	0	10

pre = surface applied ppi = preplant incorporated *primary weed in field - Carelessweed

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CANTALOUPE VARIETY DEMONSTRATION

Grower: Rodney Reagan

Location: Knippa

County Extension Agnet: Darrell E. Smith, Uvalde County

Supporting Specialists: Jerral D. Johnson, Extension Plant Pathologist
Sam D. Cotner, Area Extension Vegetable Specialist

Date Planted: March 16, 1972

Date Evaluated: June 9, 1972

Conclusion: The Texas Experiment Station releases Dulce and the numbered varieties TP 56-78, TP 123-64 and TP 122 showed good resistance to Downy Mildew. They were superior to all other varieties tested. Topmark and Planter Jumbo showed susceptibility to Powdery Mildew.

Field Evaluation of Cantaloupe Selections to Downy Mildew

Entry	Variety	Rating
1	SR 91 SF	3*
2	Tompark	4**
3	TP 123-64	1.5
4	Dulce	1
5	TP 124	1.5
6	TP 56-78	1
7	TP 26	2
8	TP 122	1.5
9	TP 25	2
10	Planter Jumbo	2**
11	Resistant 45	2
12	Gulf Stream	2
13	Perlita	4.5

* Rating - June 9, 1972
**Powdery Mildew present

1 - Some Downy Mildew present around crown
3 - Severe damage around crown of plant
5 - No plant remaining, lost to Downy Mildew

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ETHREL DEMONSTRATION ON CANTALOUPES (PMR 45)

ower: Milton Irwin

cation: Dilley

unty Extension Agent: Eldred Jordan, Frio County

pporting Specialists: Jack Smith, Amchem
Jerral D. Johnson, Extension Plant Pathologist
Sam D. Cotner, Area Extension Vegetable Specialist

te Planted: June 21, 1973

te Evaluated: June 27, 1973 (Heavy rains occurred June 24 and 25, 1973)

te of Application: Ethrel applied at 0.5 lbs. and 0.8 lbs. a.i. per acre in 23 gallons of water at 20 p.s.i.

ta of Application: Average % sugar (full slip) - 9.6%
Average % sugar (quarter slip) 8.1%
Field harvested 6 times

nclusion: Ethrel at the rate of 0.5 lbs. active per acre has potential as a harvest-aid on cantaloupes in Texas. Higher rates severely damage foliage resulting in lower sugar levels and increased sunburn. Ethrel has greatest potential as a "clean-up" following 3 to 5 harvests.

Treatment	# Fruit/100[1]	% at Harvest/100[1]	% Sugar	% Accept.[2]	% Non-Marketable (No Net)	% Small	% Med.	% Large
eck	46	36.9	7.55	100	0.0	13.1	58.9	28.0
5 lbs. a.i./ac	29	100	9.40	100	30.0	-o-	12.7	57.3
8 lbs. a.i./ac	40	100	8.30	80	30.5	22.0	25.5	23.0

ased on 2 replications 10 ft. long (by weight)

ased on acceptability

ETHREL DEMONSTRATION ON CANTALOUPES (PMR 45)

Grower: Alvin Mann

Location: Pearsall

County Extension Agent: Eldred Jordan, Frio County

Supporting Specialists: Jerral D. Johnson, Extension Plant Pathologist
Sam D. Cotner, Area Extension Vegetable Specialist

Date Treated: July 24, 1973

Date Evaluated: 80 hours after treatment

Treatments: 0.0 lb./A Ethrel
0.25 lb./A Ethrel
0.50 lb./A Ethrel

Weather: Temperature 72°F

Conclusion: Ethrel reduces fruit size resulting in concentration of medium to small size.

Effect of Ethrel Applications to PMR 45 Cantaloupes to Encourage Maturity

Treatment	% Full-Slip	% Fruit in Various Grades After Treatment		
		Large	Medium	Small
Check	31	29	59	12
0.50 lb./A	72	8	61	31

CARROT VARIETY DEMONSTRATION

Grower: Van De Walle Farms

Location: Hondo

County Extension Agent: Glenn Bragg, Medina County

Supporting Specialists: Jerral D. Johnson, Extension Plant Pathologist
Sam D. Cotner, Area Extension Vegetable Specialist

Date Planted: September 25, 1970

Date Evaluated: January 18, 1970

Plot Information: 2 rows/beds
Replication: 3
Plot length: 200 ft.

Conclusion: The selections Long Imperator, Waltham Hicolor, H2132, and 328/18 showed the best resistance to Alternaria Leaf Blight. Imperator 58 showed only fair resistance to Alternaria Leaf Blight. There were a number of selections which had apparent resistance to Aster Yellows. This may possible be due to the preferential feeding by the insects and not a resistance to the disease carrying organism. Further evaluation should be made on some of the better selections.

Code Number	Pedigree/Name	Rating*	
		Alternaria	Aster Yellows
1	P6202-2 X p65-317 Reg	2.0	2.0
2	P6202-2 X P65-317 X Long	3.0	2.0
4	(M1558 X M5931) M 106	2.0	1.0
10	M5931 X M5986	4.0	1.0
11	M5931 X M5986	3.5	2.0
12	Long Imperator	1.5	1.0
13	Gold Pak Long Type	3.0	1.0

Code Number	Pedigree/Name	Rating*	
		Altermaria	Aster Yellows
14	Scarlet Nantes	3.5	2.0
16	Imperator Extra Long	2.5	2.0
17	Eureka	4.0	3.0
18	Spartansweet	3.0	2.0
19	Imperator 58	3.0	2.0
20	Tenderpak	3.0	1.0
21	Waltham Hicolor	1.5	1.0
22	Sunset	2.5	1.0
23	Imperator Expt.	2.0	1.0
24	Sunliner	3.0	2.0
25	1591 Sn	3.5	2.0
26	310 Hipak	3.0	1.0
27	En 47	3.5	1.0
28	H2132	1.5	4.0
29	328/18	1.5	3.0
30	159132	3.0	3.0
31	159147	4.0	2.0
32	318 Pioneer	3.5	2.0
33	Commander	2.0	1.0
34	Expt. 6	2.5	1.0
35	Expt. 1222	2.0	1.0
36	Pacesetter	2.5	1.0
37	Cellogold	3.0	1.0
38	Imperator Long #58	2.5	2.0
39	Hicolor	No Stand	No Stand
43	Carousel	No Stand	No Stand
46	XP 109	2.0	4.0 Sparse Stand
47	XP 113	3.0	3.0
49	XP 112	3.5	3.0
51	XP 120	3.0	2.0
53	XP 122	3.5	2.0
54	Imperator 99	2.5	1.0
55	Hybrid 9705	3.0	1.0
56	Hybrid 9721	3.0	1.0
57	Hybrid 9893	2.5	1.0

Code Number	Pedigree/Name	Rating*	
		Alternaria	Aster Yellows
58	Brooks Exp. 902	3.0	1.0
59	Brooks Exp. 901	3.0	4.0
60	Imperator Hybrid A	3.0	1.0
61	Imperator Hybrid B	3.5	2.0
62	Nantes Hybrid	3.5	2.0
63	Nantesa Superior	4.0	2.0
64	7320	3.5	2.0
65	170A	2.0	4.0
66	S35/62	3.0	3.0
67	2E	3.5	4.0
68	Gold Pak #28	3.0	2.0
69	Gold Pak	3.0	2.0
70	Long Imperator 58	2.5	1.0
71	2571	---	5.0
72	170E	3.5	2.0
73	13CX6	3.0	3.0
74	E8205	3.0	3.0
76	Eureka	3.0	2.0
77	Imperator 58 Special	2.0	2.0
78	Waltham Hi Color	3.0	3.0
79	Gold Pak 61	3.0	2.0
80	Gold Pak Special	3.0	3.0
81	Carousel	4.0	3.5
82	Highlight	3.5	3.0
83	XP 123	3.0	3.0
84	XP 107	3.0	3.0
85	XP 108	3.5	2.0
86	XP 127	3.5	2.0
87	XP 113	3.0	2.0
88	XP 126	3.5	2.0
89	Little Finger	3.5	2.0
90	S + G 253	3.0	2.0
91	7322	3.5	2.0
92	9437	3.0	3.5
98	XP 1313	4.0	4.0

Code Number		Pedigree/Name	Rating*	
			Alternaria	Aster Yellows
100		P6104 X P6604	4.0	4.0
105			No Stand	No Stand
122			4.0	3.0
128			3.0	3.0
129		Nantes No. 1003	3.0	2.0
130		Nantes Express	3.5	3.0
131		Nantes Empire	2.5	3.0
132		Fancy Osena	2.0	2.0
133		Amsterdam Special No. 378	4.0	2.0
134		Superpak	4.0	4.0
135		Yuared	3.5	2.0
136		Westland Ideal	4.0	4.0
Row 1	70-1	5931 X 5986^2	4.0	4.0
Row 2	70-2	(1558 X 5931^2) X 5986	4.0	4.0
Row 3	70-3	(5931 X 5986) X 6000	3.0	3.0

*1 = No disease
5 = 100% infected

CARROT VARIETY DEMONSTRATION

Charles Halbardier

: Hondo

xtension Agent: Glenn Bragg, Medina County

ng Specialists: Jerral D. Johnson, Extension Plant Pathologist
Sam D. Cotner, Area Extension Vegetable Specialist
Leonard Pike, Texas Agricultural Experiment Station
Jose Amador, Extension Plant Pathologist

nted: February 4, 1972

vested: May 26, 1972

on: The processing varieties Spartan Bonus and Danvers 126 produced the highest yields. Of these two, Spartan Bonus produced a longer root with a higher sugar content and showed better disease resistance than Danvers 126.

Of the fresh market varieties, Ace, XP 115, Hybrid 9W90, Hybrid 13CX19 and Hybrid 13CX15 produced the highest marketable yields. Ace appears to be an excellent variety producing extremely smooth roots of good length, color, and sugar content. Ace out-yielded Imperator 58 by almost 2 tons per acre and produced 97% marketable roots. Ace, XP 115, Imperator 58, and Hybrid 9W156 showed good resistance to Cercospora leaf blight.

Results of this trial indicate Spartan Bonus (Processing) and Ace (Fresh Market) are highly adpated to production in the Winter Garden Area.

Variety	Total Yield[1]	Culls[2]	Marketable	% Mkt.	% Splits[3]	Length	Soluable Solids	Disease[4]	Source[5]
15	21436	654	20782	97	.7	9	10.13	2.0	Niagra
08	27729	3963	23766	86	.2	8	9.51	2.0	Asgrow
rtan Bonus	22471	3688	18783	84	.3	9	9.61	3.0	Asgrow
rtan Fancy	27661	3440	24111	87	1.1	7	10.24	3.0	Crookham
erator 408	20230	2964	17266	85	.3	9	10.62	4.0	Crookham
	20581	2936	17646	86	1.2	9	9.50	3.0	Northrup King

#	Variety	Total Yield[1]	Culls[2]	Marketable	% Mkt.	% Splits[3]	Length	Soluable Solids	Disease[4]	Source[5]
7	Spartan Delite	19389	3329	16060	83	.6	9	10.38	4.0	Crookha
8	Imperator 58	21113	4260	16853	80	.4	9	10.48	2.0	Northru
9	Hybrid 9W156	20734	3364	17370	84	.6	10	11.05	2.0	Crookha
10	Hybrid 9W98	25717	4673	21044	82	.4	9	9.93	3.0	Crookha
11	Danvers Pride	18494	3933	15461	83	.2	8	9.34	3.0	Niagara
12	XP 127	23250	3688	19562	84	.6	8	9.88	3.0	Asgrow
13	King Imperator	20550	3722	17528	85	1.3	10	9.81	3.0	Northru
14	Spartan Sweet	19307	3536	15771	82	.7	9	9.99	4.0	Crookha
15	Hybrid 13CX19	22960	2468	20492	89	1.7	9	10.16	3.0	Ferry-M
16	Hybrid 13CX15	22925	2295	20630	90	1.2	9	9.59	3.0	Ferry-M
17	Gold Pak 28	20871	4101	16770	80	.7	8	9.62	3.0	Ferry-M
18	Danvers 126	26282	3963	22319	85	.2	6	9.16	2.0	Ferry-M
19	Expt. Hybrid	19548	3364	16184	83	.5	10	10.30	4.0	Harris
20	Grenadier	23043	3984	19054	83	.4	9	9.86	4.0	Harris

[1]Yield is given in pounds per acre based on replicated plantings totaling 160 linear feet and computed to 1 acre basis.

[2]Carrots that were forked, split, or too small for packaging were classed as culls.

[3]Carrots having growth cracks were classed as culls and recorded separately to provide information on how severe cracking might be expected within each variety.

[4]Foliage disease ratings were based on visual evaluations with a range of 1 to 5 - 1 being highly resistan 5 most susceptible. Figures are average of five relications.

[5]Companies listed as source furnished seed and contributed towards cost of conducting the trials.

CARROT WEED CONTROL DEMONSTRATION

Grower: Russel Rehm

Location: Sabinal

County Extension Agent: Darrell Smith, Zavala County

Supporting Specialist: Sam D. Cotner, Area Extension Vegetable Specialist

Date Planted: March 1, 1972

Date Evaluated: March 29, 1972

Date Established: March 22, 1972

Method of Application: Broadcast, post-emege in 25 gallons/acre

Conclusion: Lorox at 2 lbs. active per acre is superior to TOK-E25 for weed control in carrots. TOK at 4 lbs. active per acre results in fair control of most common weeds and does give residual control which is lacking with Lorox.

Treatment	Lb. ai/A	Carrots		Pigweed		Johnsongrass		Lambsquarter		Henbit		London Rocket	Citron	Residual Grass Control
		3/29	4/6	3/29	4/6	3/29	4/6	3/29	4/6	3/29	4/6	3/29	4/6	4/6
Lorox	2	0	0	100	100	35	50	100	100	100	100	90	M	0
TOK E-25	2	0	0	70	55	35	30	40	40	55	40	15	M	25
TOK E-25	4	0	0	95	68	40	40	M	90	90	80	M	20	92
Check	-	0	0	0	0	0	0	0	0	0	0	0	0	0

Weed size and % of population and crop size:

Carrots 2"
20% - Pigweed 3-6"
35% - Seedling Johnsongrass 4-6"
5% - Others Lond Rocket 2"
10% - Henbit 2-4"
Citron or pie melon 3"

CARROT VARIETY DEMONSTRATION

Grower: DelMonte Farms

Location: Crystal City

County Extension Agent: Dwight Harkey, Zavala County

Supporting Specialists: Jerral Johnson, Extension Plant Pathologist
Sam D. Cotner, Extension Horticulturist
Tom D. Longbrake, Area Extension Vegetable Specialist

Date Planted: January 10, 1974

Date Evaluated: May 6, 1974

Conclusion: Exp. 473 (Northrup-King) appears to have potential in the Winter Garden Area, although it lacks good resistance to Powdery Mildew and Leaf Blight. Exp. 475 (Northrup-King) shows good resistance to foliage disease. This is the first recorded incidence of Powdery Mildew on carrots in Texas.

Horticultural Characteristics and Disease Reactions of 13 Carrot Varieties

Variety	Color[1]			Powdery Mildew[3]	Cercospora Leaf Blight[4]
	External	Internal	Core[2]		
Imperator	8	8	7	1	2
Javalin	55	6	5	2	1
Can-Pak	4	3	4	3	2
Dess-Dan	4	3	3	1	2
Lance	--	-	-	2	2
Dagger	4	4	3	3	2
Touche	--	-	-	3	3
Exp. Hy. 471	5	6	6	1	2
Exp. Hy. 472	3	5	4	2	3
Exp. Hy. 473	5	2	2	3	3
Exp. Hy. 475	8	7	4	1	1
Exp. Hy. 314-3	4	5	4	-	-

[1]Color 1 = Good
10 = Poor

[2]Core 1 = Good
10 = Poor

[3]Rating 1 = No Powdery Mildew
2 = Light infection, widely scattered
3 = Light infection, covering approximately 25% of the foliage
4 = Moderate infection, covering approximately 50% of the foliage
5 = Heavy infection, covering more than 50% of the foliage

[4]Rating 1 = No leaf spot
2 = Widely scattered on older foliage
3 = Moderately scattered on older foliage
4 = Older foliage completely destroyed
5 = Plant completely defoliated

CARROT VARIETY DEMONSTRATION

ower: Van De Walle Farms

cation: San Antonio

unty Extension Agent: Thurman J. Kennedy, Bexar County

pporting Specialists: Jerral D. Johnson, Extension Plant Pathologist
Jerry M. Parsons, Area Extension Vegetable Specialist
Sam D. Cotner, Extension Horticulturist

te Planted: August 18, 1975

te Evaluated: November 24, 1975

ot Design: Relicated 2, 2 row/bed - 36-inch row (600 feet long)

nclusion: The numbered entries 13CX24 (Ferry-Morse) and Exp. 473 produced highest yields in the demonstration. Also 13CX24 produced excellent quality roots and placed first at the 1975 South Texas Vegetable Show. Dominator (Keystone) and 13CX65 showed good resistance to leaf blight. The variety Ace produced excellent quality roots and has good potential for the San Antonio area.

Variety	Seed Company	Yield[1]	Cercospora Leaf Blight[2]
Klonkike Nantes	Stokes	22.46	2.0
Danvers 126	Ferry-Morse	21.21	3.0
Ace	FMC	22.37	1.5
Spartan Fancy	Pieters-Wheeler	21.12	2.5
Dominator	Keystone	20.74	1.0
Trophy	Harris	21.89	2.0
Imperator 58	Ferry-Morse	21.79	2.0
13CX65	Ferry-Morse	21.22	1.0
13CX24*	Ferry-Morse	26.11	2.0
Exp. 477	Northrup King	21.02	2.0

Variety	Seed Company	Yield[1]	Cercospora Leaf Blight[2]
Exp. 483	Northrup King	21.31	1.5
Exp. 473	Northrup King	25.05	1.5
Exp. 474	Northrup King	21.31	2.0
Exp. 472	Northrup King	14.69	1.5
Exp. 471	Northrup King	18.41	2.0

[1]Yield in tons per acre computed form mean of two replicates. Entire 600 rows were harvested.

[2]Cercospora Rating: 1 = No disease
2 = Isolated leaves showing infection with accumulation of leaves at base of plant
3 = Numerous lesions with a buildup of leaves at base of plant. Tops beginning to show thinning due to disease.

*Winner of 1974 South Texas Vegetable Show Carrot Division

CARROT FOLIAGE FUNGICIDE DEMONSTRATION

Grower: H & F Farms

Location: Crystal City

County Extension Agent: Ray Caraveo, Zavala County

Supporting Specialists: Jerral D. Johnson, Extension Plant Pathologist
Jerry M. Parsons, Area Extension Vegetable Specialist

Date Harvested: January 6, 1976

Date Applied: December 8, 1976

Spray Information: Rate: 8 gal./A
Pressure: 25 psi
Back Pack Sprayer
Nozzle: 2-6x hollow cone, 12 inches apart

Plot Infomation: 12 rows, approximately 150 ft. long

Replications: 2

Wind: No wind

Notes: Cercospora causing some defoliation at crown of plant at time of application

Manzate 200 (2 lbs./A.)
Bravo (1½ pts./A.)
Du-Ter (½ lb./A.)
Benlate (½ lb./A.)
Topsin (½ lb./A.)
Control

Conclusion: Benlate was the most effective fungicide used and the Benlate sprayed plots also yielded highest. Du-Ter was the next most effective material, but the yield was much lower. Manzate, Bravo, and Topsin were not effective in this demonstration.

Effect of Fungicides on the Occurrence of Leaf Blight of Carrots and Production

Treatment	Leaf Blight Rating[1]	Yield in 50 lb. sacks/A.[2]	Increase Due To Fungicide
Manzate 200	3.50	541	65
Benlate	2.25	790	314
Bravo	3.50	673	197
Topsin	3.50	746	270
Du-Ter	3.25	575	99
Control	3.50	476	---

[1]Leaf Blight Rating: 1 = No disease
2 = Isolated lesions on foliage
3 = Dead leaves prevalent around base of plant
4 = Dead leaves prevalent around base and upper foliage damaged
5 = Plant dead

[2]Total yield of ungraded carrots

WEED CONTROL DEMONSTRATION ON CAULIFLOWER

Grower: Henry Verstuyft and Sons

Location Von Ormy

County Extension Agent: Thurman Kennedy, Bexar County

Supporting Specialist: Sam D. Cotner, Area Extension Vegetable Specialist

Date Established: September 3, 1973

Date Evaluated: November 20, 1973

Method of Application: Band application in 50 gallons of water per acre

Method of Incorporation: Furrow irrigation

Conclusion: Prefar, at the 6-pound rate, when surface applied and incorporated by irrigation, results in satisfactory weed control in cauliflower. Irrigation should follow application immediately for best results. Prefar does not give good control of wild mustard.

Treatment	Rate	% Weed Control				
		Thistle	Henbit	Purslane	Wild Mustard	Pigweed
Check	--	0	0	0	0	0
Prefar	3 lbs. a.i.	65	87	68	25	62
Prefar	6 lbs. a.i.	89	95	71	40	85

SWEET CORN VARIETY DEMONSTRATION

Grower: Van De Walle & Sons

Location: San Antonio

County Extension Agent: Thurman Kennedy, Bexar County

Supporting Specialists: Jerral D. Johnson, Extension Plant Pathologist
Jerry Parsons, Area Extension Vegetable Specialist
Sam Cotner, Extension Horticulturist

Date Planted: March 24, 1975

Planting Information: Rows were north to south. 44 rows were planted with tractor mounted Planet Junior planters, 8 pounds of Disyston per acre was incorporated preplant.

Conclusions: Results of this trial indicate NCX 243 shows resistance to Maize Dwarf Mosiac Virus (MDMV), Downy Mildew and Corn Rust. Bonanza was especially susceptible to Downy Mildew. Gold Crown was susceptible to Corn Rust. NCX 243 also produced good quality ears having good length and diameter.

Variety	Date Planted	Date Matured	Length of Ear Shucked (in.)	Length of Ear Not Shucked (in.)	Diameter of Ear (Shucked) (in.)	Plant Height (in.)	MDMV[1]	DM[2]	Rust[3]
Bonanza[2]	3/24	6/12	6 1/2	12	1 1/2	49	3.6	37%	-
NCK 2004[2]	3/24	6/9	8	12 1/4	1 3/4	52	3.3	18%	-
NCX 243[2]	3/24	6/9	7 3/4	13	2	51	1.7	0%	-
Golden Crown[2]	3/24	6/11	7	12	1 3/4	49	2.5	2%	+

*All data are for an average of 10 ears. Plant height is measured from ground line to tassel base.

[1]Maize Dwarf Mosaic Virus Rating: 1 = No symptoms
2 = Slight mottle in top
3 = Severe mottle in top
4 = Severe mottle with stunting
5 = Severe mottle with stunting and loss of production

[2]Downy Mildew: % of plants in plot showing symptoms

[3]Rust: + = Present
- = Absent

WEED CONTROL DEMOSNTRATION ON CUCUMBERS

Grower: Charles Halbardier

Location: Hondo

County Extension Agent: Glenn Bragg, Medina County

Supporting Specialist: Sam D. Cotner, Area Extension Vegetable Specialist

Date Established: April 16, 1973

Date Evaluated: May 3, 1973

Method: Applied broadcast in 40 gallons of water per acre

Conclusion: The combination of Prefar and Alanap (tank mixture) results in stunting of cucumbers when incorporated or surface applied when used at indicated rates. Harvest may be delayed as much as 5-7 days. Weed control excellent throughout season.

Treatment	Method	Rate	Reduction in Stand (Crop)	Stunting	% Weed Control		
					Purslane	Pigweed	Grass
Prefar	p.p.i.	6#	0%	0%	80	65	85
Prefar + Alanap	p.p.i.	6# + 1.5#	15%	60%	95	95	85
Prefar + Alanap	surface	6# + 1.5#	5%	40%	95	100	75
Check	-------	----	---	---	--	---	--

CUCUMBER VARIETY DEMONSTRATION

Grower: Charles Halbardier

Location Hondo

County Extension Agent: Glenn Bragg, Medina County

Supporting Specialists: Jerral D. Johnson, Extension Plant Pathologist
Sam D. Cotner, Extension Horticulturist

Date Planted: April 2, 1974

Date Evaluated: June 6, 1974

Soil: Clay loam

Plot Design: Two rows each variety, planted in middle of commercial field.

Conclusion: The varieties Gemini 7 and Victory had the highest level of disease resistance; however, the fruit was smaller than the others. Early Set was the earliest variety evaluated; however, it was somewhat susceptible to Downy and Powdery Mildew. Crackerlee, Victory, and Gemini 7 were the later maturing varieties. Smooth Set, Quick Set, and Get Set were pointed varieties while the other varieties evaluated were blocky in shape.

Of the varieties evaluated Victory appeared to be the best variety. The size, although small, is due to fruit immaturity and is not a fruit characteristic.

Plant Characteristics of 10 Cucumber Varieties (Slicer-type)

Variety	Wt./oz.	Length (in.)	Width (in.)	Length/Width Ratio	Color	Uniformity of Color	Fruit Set	Downy Mildew[1]	Powdery Mildew[2]
Smooth Set	9.0	7.5	1.8	4.2	G	P	VP	1	2
Quick Set	8.5	7.3	1.9	3.8	DG	G	P	1	4
Early Set	1.2	7.3	2.0	3.7	DG	G	F	2	2
Victory	4.8	5.0	1.5	3.3	G	P	P	1	1
Marian	10.3	7.6	2.0	3.8	LG	P	P	3	4
Commanche (Dessert)	10.3	7.3	2.0	8.7	G	P	P	4	3

Variety	Wt./oz.	Length (in.)	Width (in.)	Length/Width Ratio	Color	Uniformity of Color	Fruit Set	Downy Mildew[1]	Powdery Mildew[2]
Crackerlee	5.3	6.0	1.6	3.8	DG	P	P	2	1
Gemini 7	6.5	6.1	1.8	3.4	G	P	P	1	1
Commanche (Niagara)	7.6	6.5	1.9	3.4	G	P	F	4	3

[1]Downy Mildew Rating: 1 = No disease
5 = 25% or more of the foliage damaged

[2]Powdery Mildew Rating: 1 = No disease
5 = 25% or more of the foliage damaged

HONEYDEW VARIETY DEMONSTRATION

Grower: Dr. Bell

Location: Derby

County Extension Agent: Eldred Jordan, Frio County

Supporting Specialists: Jerral D. Johnson, Extension Plant Pathologist
Sam D. Cotner, Area Extension Vegetable Specialist
Seed supplied from breeding selections of Dr. Correa, Texas Agricultural Experiment Station

Date Planted: March 20, 1973

Date Evaluated: June 13, 1973

Conclusion: The selections 69-1, 69-9, 69-21, 69-3, and 69-20 exhibited good resistance to Downy Mildew. The selection 69-12 produced fruit with the highest sugar content. All selections in this trial were superior to Honeydew.

Evaluation of Honeydew Breeding Lines to
Downy Mildew and Production Characteristics

Entry	% Soluble Solids[1]	Downy Mildew Rating	Comments
TAM-Dew	8.0[1]	4.5[2]	
Honeydew	4.7	5.0	Severe foliage damage early
69-1	9.1	1.5	Good size and set
69-2	9.6	3.5	
69-3	8.7	2.0	Fair size and good set
69-5	7.5	3.0	Good size and set
69-6	5.9	4.0	
69-8	7.9	3.0	
69-9	8.5	1.5	Good size and set
69-11	9.0	4.0	
69-12	11.7	2.5	

Entry	% Soluble Solids[1]	Downy Mildew Rating	Comments
69-13	9.1	3.0	
69-16	9.9	2.5	
69-18	9.0	4.0	
69-20	9.3	2.0	
69-21	7.9	1.5	

Represents the mean of 3 determinations
1 = No disease
5 = Severe damage with some plant death

ETHREL DEMONSTRATION ON HONEYDEWS

Grower: Milton Irwin

Location: Dilley

County Extension Agent: Eldred Jordan, Frio County

Supporting Specialists: Jack Smith, Amchem
Jerral D. Johnson, Extension Plant Pathologist
Sam D. Cotner, Area Extension Vegetable Specialist

Date Applied: June 21, 1973

Date Evaluated: June 27, 1973 (Heavy rains occurred June 24 and 25, 1973)

Weather: Wind - 10 mph, east; Temperature - 74°F

Rate of Application: Ethrel applied at 0.5 lbs. and 0.8 lbs. a.i. per acre in 23 gallons of water at 20 p.s.i.

Data of Application: Average % sugar (mature) - 9.75%
Average % sugar (mature) - 5.50%

Conclusion: Ethrel applied at 0.5 to 0.8 lbs. per acre resulted in a "full-slip" condition in honeydews. Sugar increased slightly. Additional trials are necessary to determine full potential of ethrel as a harvest-aid on honeydews.

Treatment	% Full Slip	% Sugar	% Small	% Med.	% Large
Check	0.0	8.8	0.0	44.3	55.8
0.5	18.2	9.9	19.4	23.9	56.8
0.8	60.0	9.8	13.7	32.3	57.3

ETHREL DEMONSTRATION ON HONEYDEW

Grower: Alvin Mann

Location: Pearsall

County Extension Agent: Eldred A. Jordan, Frio County

Supporting Specialists: Jerral D. Johnson, Extenison Plant Pathologist
Sam D. Cotner, Area Extension Vegetable Specialist

Temperature: 75°F

Date Treated: July 24, 1973

Date Evaluated: 80 hours after treatment

Treatments: 0.5 lb./A Ethrel
0.8 lb./A Ethrel
1.2 lb./A Ethrel
0.0 lb./A Ethrel

Conclusion: Ethrel at high rates can result in full-slip of honeydews although it is not always consistant. Rates in excess of 0.5 lbs. per acre result in severe damage to foliage and fruit sunburn. No significant changes were apparent in fruit sugar level.

Effect of Ethrel on Honeydew

Treatment	% Marketable Fruit in Plot	% Full-Slip	% Sugar Initial	% Sugar at Harvest
Check	18	0.0	8.8	10.1
0.5 lb./A Ethrel	49	0.0	8.8	9.4
0.8 lb./A Ethrel	58	6.0	8.8	10.8
1.2 lb./A Ethrel	60	35.0	8.8	10.1

WEED CONTROL DEMONSTRATION ON LETTUCE

Grower: Ben Fey

Location: Von Ormy

County Extension Agent: Thurman Kennedy, Bexar County

Supporting Specialist: Sam D. Cotner, Area Extension Vegetable Specialist

Date Established: September 10, 1972

Date Evaluated: October 5, 1972

Method of Application: Band application in 40 gallons of water per acre at 30 psi

Conclusion: Effective weed control was achieved using both materials. Kerb, at 1½ lbs. per acre, gave effective control of henbit and lambsquarter. At this rate, it was equal to Prefar for lambsquarter control and moderately superior for henbit control. No damage or stand reduction was observed at this rate.

Material	Rate #A.I./Acre[3]	Weed Plants per Sq. Ft.	Percent Control	Most Surviving
Prefar[1]	6	0.62	86	Mostly henbit, some thistle
Kerb[2]	1½	0.24	96	Mostly thistle
Check	11	4.56	0	Thistle, henbit, various grasses

[1] Stauffer

[2] Rhom and Haas

[3] Active Ingredient per acre

ONION VARIETY DEMONSTRATION

wer: Warren Wagner Farms

ation: Burns Farm, 3 miles south of Crystal City on FM 1433

nty Extension Agents: Oliver Reinhart, Jr., Dimmit County
Dwight Harkey, Zavala County

porting Specialists: Tom D. Longbrake, Area Extension Vegetable Specialist
Sam D. Cotner, Area Extension Vegetable Specialist

e Established: December 15, 1972

e Evaluated: June 30, 1973

hod: Direct seeded, 2 rows/40" bed in commercial field

clusion: Results of this trial indicated Tule, Chieftain, Ringmaster prr, Apache, and San Felipe are well adapted to late planting in the Winter Garden Area and are capable of producing in excess of 700 bags per acre. The white onion Ringmaster produced over 600 bags of jumbos per acre. Little difference in severity of leaf tip blight was noted with the exception of Ben Shemen which was severely infected.

ieties	Seed Source	Maturity[1]	Bulbing[2] Uniformity	Tip Blight Rating[3]	Plts./Ft.	Yield 50# Bags/Ac.	Percent by Size		
							0-1 7/8	1 7/8-2 1/2	2 1/2-3 1/2
e	Ferry-Morse	Medium-Late	Good	4	11.6	840	75	345	420
eftain	Ferry-Morse	Medium-Late	Fair	4	7.8	827	16	306	505
gmaster	Ferry-Morse	Medium	Good	4	6.9	827	8	207	612

Varieties	Seed Source	Maturity[1]	Bulbing[2] Uniformity	Tip Blight Rating[3]	Plts./Ft.	Yield 50# Bags/Ac.	Percent by Size		
							0-1 7/8	1 7/8-2 1/2	2 1/2-3 1/2
Apache	Ferry-Morse	Medium-Late	Fair	5	7.4	787	31	236	520
San Felipe	Ferry-Morse	Early	Good +	5	7.4	712	28	328	356
Ben Shemen	Israel	Early	Good	8	9.8	690	48	428	214
Pronto S.	Asgrow	Early	Good	4	8.8	642	45	379	218
Rocket	Asgrow	Medium	Fair	5	9.7	624	50	393	181
Fiesta	Ferry-Morse	Medium	Good	5	4.6	501	35	165	301
Brown Beauty	Ferry-Morse	Medium Late	Fair	5	5.7	497	30	199	268
Ivory	Asgrow	Late	Fair	4	5.9	330	83	188	59
Southport Wh. Globe	Ferry-Morse	Late	Poor	3	6.1	338	74	254	10
Ruby Red	Asgrow	Very Late	Poor	4	4.7	338	30	159	149
Southport Rd. Globe	Ferry-Morse	Very Late	Poor	4	4.6	290	49	197	44

[1]Early - June 15-30; Medium - July 1-10; Late - July 10-25; Very Late - July 25-?

[2]Good - All plants formed bulbs; Fair - 5-20% of plants did not form bulbs; Poor-Over 20% of plants not forming bulbs.

[3]Ratings: 0 = No disease
10 = Severe disease of foliage

SODIUM AZIDE DEMONSTRATION FOR PINK ROOT CONTROL ON ONIONS

Grower: Albert Ivy

Location: Carrizo Springs

County Extension Agent: Oliver Reinhart, Dimmit County

Supporting Specialists: Jerral D. Johnson, Extension Plant Pathologist
Sam D. Cotner, Extension Horticulturist
Ran Newman, Research and Development Representative, PPG Industries

Plot Size: 4 rows - 50 ft. long

Replication: 5

Date Planted: November 15, 1974

Date Treated: October 23, 1974

Date Evaluated: February 19, 1975

Conclusion: Sodium Azide, at the levels tested, did not affect the pink root population. There did not appear to be any effect on the plants or native vegetation, thus indicating that the material was lost in some manner. There is a possibility that due to the soft beds and method of watering, the chemical was moved up into the bed and was lost in normal gas exchange. The same would occur should a standard soil nematicide be used.

Onions received a severe freeze on January 12 and 13.

Effect of Sodium Azide on the Occurrence of Pink Root on Onions

Rate: Lbs./A	% of the Sample Showing Pink Root
0	59
30	56
40	74

ONION VARIETY DEMONSTRATION

Grower: Byrd Farms

Location: Crystal City

County Extension Agent: Ray Caraveo, Zavala County

Supporting Specialists: Tom Longbrake, Area Extension Vegetable Specialist
Sam Cotner, Extension Horticulturist
Jerry Parsons, Area Extension Vegetable Specialist
Jerral Johnson, Extension Plant Pathologist

Date Planted: January 9, 1975

Date Evaluated: June 25, 1975

Method: Direct seeded, 2 varieties/40" bed in commercial field

Conclusion: Early Harvest and Fiesta each produced in excess of 400 50-lb. bags of jumbo onions when direct seeded in January. These varieties plus Chieftain and Amigo all produced over 500 bags of marketable bulbs per acre. Early Harvest, Yellow Sweet Spanish Colorado 6 and Explorer 8 exhibited good resistance to pink root. Ringmaster and Explorer 8 showed little Tip Blight. Results of this trial indicated Early Harvest is one of the better varieties for late planting and harvesting in the Winter Garden area.

Varieties	Maturity	Uniformity	Disease Rating[3]		Bags/Ac.		Total
			Tip Blight	Pink Root	Jumbo	Small	
Tule	Medium-Late	Fair	4.1	3.4	364	55	419
Chieftain	Medium-Late	Fair	3.8	3.7	55	508	563
Ringmaster	Medium	Good	2.9	3.4	198	297	495
Apache	Medium	Fair	4.1	4.8	55	77	132
San Felipe	Early	Good	3.9	4.3	32	297	429
Ben Shemen	Early	Good	4.4	3.3	0	408	408
Early Harvest	Early	Good	4.2	2.1	452	253	705
Spano	Early	Good	3.8	3.1	276	198	474
Fiesta	Medium	Good	3.9	3.3	419	198	617
Copper Cache	Medium-Late	Fair	3.9	4.5	44	143	187
Yellow Sweet Spanish	Early	Fair	4.1	3.8	44	297	341
Hybrid Exp V	Medium-Late	Fair	4.1	3.8	44	276	320
Yellow Sweet Spanish Colorado 6	Medium	Good	3.8	2.2	143	276	419
Hybrid Amigo	Late	Good	3.8	3.5	198	338	529
Fawn Preview	Medium	Fair	4.2	3.6	44	419	463
Explorer 8	Medium	Fair	2.9	2.1	88	331	419

[1]Early: June 15-30; Medium: July 1-10; Late: July 10-25; Very Late: July 25+

[2]Good: All plants formed bulbs; Fair: 5-20% of plants did not form bulbs; Poor: Over 20% of plants did not form bulbs.

[3]Ratings: (A) Tip blight rating: 1 - no disease; 2 - less than 25% foliage show symptoms; 3 - 26-50% foliage show symptoms; 4 - 51-75% foliage show symptoms; 5 - 76-100% foliage show symptoms

(B) Pink root rating: 1 - no symptoms; 2 - isolated roots show symptoms; 3 - approximately 30% roots destroyed; 4 - 31-75 show pink root symptoms; 5 - 75-100% show pink root symptoms

New Mexico Yellow Grano and New Mexico White Grano were very early and harvested on June 10 before data could be taken.

ETHREL DEMONSTRATION ON ONIONS

Grower: Albert Ivy

Location: Carrizo Springs

County Extension Agent: Oliver Reinhart, Dimmit County

Supporting Specialists: Jerral D. Johnson, Extension Plant Pathologist
Jerry M. Parsons, Area Extension Vegetable Specialist

Variety: 502 Grano (yellow)

Row: 2 rows per bed (38-inch beds)

Plant Size at First Application: 19 inches tall and in 6-leaf stage

Temperatures: 71°F (first application)
83°F (second application)

Sprayer Information: Rate water/A = 25 gallons at 38 psi.

Cold Exposure: The plants had been exposed to 15°F on January 13, 1975.

Treatment:
1. Ethrel 1 pound at one application
2. Ethrel ¼ pound at two applications
3. Control

Conclusion: The use of Ethrel increased the size of 502 Grano onions yet did not appear to have much effect on bolting. This is due possibly to the low occurrence of bolting in the field. This field was harvested prior to its reaching the maximum stage of maturity, yet the 1 pound plots were larger than the ¼ pound or control plots indicating that the 1 pound level advanced maturity. Even though maturity was advanced, the tops were still erect even on the 1 pound plots.

Effect of Ethrel Alplications on the Size and Yield of 502 Yellow Grano at Carrizo Springs

Treatment	Rate and Date of Application	Percent Bolt	Total Yield/Bags/Ac.	Avg. Wt./ Bulb	% Increase in Wt.	Neck Size in mm
Control	---	.013	524.2	6.98 oz.	---	16.6
Ethrel	¼ lb. (2-18-75) ¼ lb. (3-24-75)	.006	547.1	7.12 oz.	2	14.6
Ethrel	1 lb. (2-18-75)	.000	657.5	8.46 oz.	21	17.3

ONION WEED CONTROL DEMONSTRATION

Grower: Byrd Farms

Location: Crystal City

County Extension Agent: Ray Caraveo, Zavala County

Supporting Specialists: Sam Cotner, Extension Horticulturist
Jerral Johnson, Extension Plant Pathologist
Jerry Parsons, Area Extension Vegetable Specialist

Date Planted: January 23, 1976

Method: Applied on 20" band using 50 gallons of water per acre.

Date Evaluated: March 11, 1976

Conclusion: The results of this demonstration indicate that Sencor is highly active on onions and results in unacceptable damage to the crop when applied post-emerge. Brominal resulted in considerable stunting when applied at the flag-leaf stage. When applied at the 3 to 5 true leaf stage, Brominal caused only slight stunting of onions. Both Sencor and Brominal resulted in good weed control. TOK caused no crop damage but gave little control of wild mustard. Better weed controled resulted when TOK was applied when the wild mustard was in the seedling stage.

Table 1. Test A - Onions: 3 to 5 True-leaf Stage

	Plot 1	Onion[1]	Weed[2]	Plot 2	Onion	Weed
Row 2	TOK 3#	1	5	Brominal ½#	2	3
3	Sencor ¼#	3	1	TOK 3#	1	4
4	Sencor ½#	5	1	Brominal 1#	2	2
5	Brominal ½#	2	2	Sencor ½#	3	1
6	Sencor ¼#	4	1	Brominal 1#	2	2
7	Check	1	5	Check	1	5

Table 2. Test B - Onions: Flag-leaf Stage

	Plot 1	Onion[1]	Weed[2]		Plot 2 Onion	Weed
Row 2	TOK 3#	1	3	Brominal ½#	4	1
3	Sencor ¼#	2	2	TOK 3#	1	2
4	Sencor ½#	3	2	Brominal 1#	3	1
5	Brominal ½#	4	1	Sencor ½#	2	2
6	Sencor ¼#	2	1	Brominal 1#	4	1
7	Check	1	5	Check	1	5

[1]Response of crop: 1 = No damage
5 = Severe damage

[2]Response of wild mustard: 1 = 100% control
5 = No control

ONION WEED CONTROL DEMONSTRATION

Grower: Albert Ivy

Location: Carrizo Springs

County Extension Agent: Oliver Reinhart, Dimmit County

Supporting Specialists: Sam D. Cotner, Extension Vegetable Specialist
Jerral D. Johnson, Extension Plant Pathologist

Method of Application: Applied with John Bean model sprayer at the rate of 30 gallons of water per acre - Incorporation where indicated with power incorporator.

Conclusion: The results of this demonstration indicate that a tank mixture of Furloe at 1½ lbs. ai/acre + Prefar at 3 lbs. ai/acre gives fairly good control of the weeds present with only moderate stunting of direct-seeded onions. Furloe at all applied rates caused considerable damage to the onions, but did give good control of the wild mustard. Prefar had little effect on wild mustard and caused no damage to the crop.

Treatment	Weed Control[1]				
	Mustard	Lambs Quarter	Careless Weed	Thistle	Onion
1 = Check	10	10	10	10	10
2 = Prefar 3 lbs. ai/acre ppi	8.3	6	2	5.7	9.3
3 = Prefar 6 lbs. ai/acre ppi	7.7	6	2	7.7	10
4 = Prefar 3 lbs. ai/acre ppi + 2 lbs. ai/acre on surface	9	4.7	2.3	3.3	9.3
5 = Prefar 3 lbs. ai/acre ppi + Dacthal @ 6 lbs. ai/acre on surface	6.7	8.7	2.7	5.3	8.3
6 = Prefar 3 lbs. ai/acre ppi + Furloe 124 @ 1½ lbs. ai/acre ppi	5.5	4	3.5	5	4.5
7 = Dacthal 6 lbs. ai/acre on surface	8	7	5	4	10
8 = Furloe 124 3 lbs. ai/acre on surface	2	6.3	4.3	6	2.3

Treatment	Weed Control[1]				
	Mustard	Lambs Quarter	Careless Weed	Thistle	Onion
9 = Furloe 124 1½ lbs. ai/acre on surface	3.3	8.3	7.3	6	3.3
10 = Furloe 124 2 lbs. ai/acre + Dacthal @ 6 lbs. ai/acre on surface	1.7	5	2.7	5	3.0
11 = Furloe 124 2 lbs. ai/acre + Prefar @ 2 lbs. ai/acre on surface	2	5.7	3	5	3.3

[1]Based on ratings of from 1 to 10 - 1 indicating total control, 10 no control. With regard to the crop, a low rating indicates severe damage, a high rating little or no damage.

BELL PEPPER VARIETY DEMONSTRATION

Grower: Cyril Van Damme

Location: Hondo

County Extension Agent: Glenn Bragg, Medina County

Supporting Specialists: Sam Cotner, Area Extension Vegetable Specialist
Jerral D. Johnson, Extension Plant Pathologist

Date Planted: March 8, 1973

Plot Size: 50 ft. with 10 ft. ally
Single row to bed (36 inches)

Replication: 3

Conclusions: The variety Canape has several outstanding characteristics but lacks desirable fruit shape and size. The varieties Jade, California Wonder 300 TMR, Miss Belle and NCX 4002 have potential for the San Antonio Winter Garden and compare favorably to the area standard Keystone Resistant Giant #3. The line E41X29 has outstanding uniformity and fruit size although fruit set was low. Rio Grande 66 provided the largest fruit but fruit set and potential yield were low. All the above-mentioned varieties are worthy of additional plantings.

Canape was found to have field resistance to Bacterial Leaf Spot. Bellringer was the second best variety in regard to Bacterial Leaf Spot, although it had considerably less resistance than Canape. Keystone Resistant Giant was intermediate in resistance when comparing the large-fruited varieties.

Canape and Bellringer were two of the better varieties when comparing virus resistance; Emerald Giant and Grande Rio 66 showed the greatest damage from virus complex.

Bellringer and Canape are the two best varieties in terms of overall disease resistance.

Table 1. Bell Pepper Variety Evaluation

Variety	% Lobes 5	4	3	2	Wall Thickness (cm)	Length (cm)	Width (cm)	Plant Height	Maturity	Weight Individual Fruit in oz.	Potential Yield*
Jade	0	30	60	10	0.64	7.66	6.48	M	M	4.0	2
Idabelle	10	60	30	0	0.60	7.55	7.57	L	M	4.7	4
Bellringer	20	30	50	0	0.64	7.24	7.28	L	M	4.2	5
California Wonder 300 TMR	0	60	30	10	0.63	7.80	6.96	L	M	5.3	3
Canape	0	0	80	20	0.46	7.07	6.33	S	E	2.6	1
Yolo Wonder L	0	40	60	0	0.56	7.40	7.31	M	M	4.0	6
Resistant Florida Giant	0	40	60	0	0.56	7.40	7.21	M	M	4.0	6
Yolo Wonder A	0	86	14	0	0.67	6.94	8.14	S	M	5.8	4
Grande Rio 66	0	50	50	0	0.61	7.27	8.90	M	M	12.0	6
Keystone Resistant Giant No. 3	0	60	40	0	0.58	7.04	7.34	L	M	5.3	5
Miss Belle	0	50	50	0	0.60	8.28	7.50	M	M	5.6	2
E4129	0	100	0	0	0.64	6.85	8.29	M	M	8.0	5
NCX 4002	0	78	22	0	0.56	7.83	8.04	M	ME	4.8	2

*Potential yield was based on actual yield plus observations made in field.
1 = Highest Yield
6+= Lowest Yield

Table 2. Reaction of Bell Pepper Varieties to Naturally Occurring Diseases.

Variety	Seed Company	Disease Reaction	
		Bacterial Leaf Spot*	Virus Complex
Yolo Wonder L		7.8	3.0
Resistant Florida Giant	Ferry-Morse	7.7	2.7
Idabelle	Ferry-Morse	7.7	3.0
Belaire	Niagara	6.3	2.3
Canape	Herbst	1.3	1.3
Midway	Ball	7.0	2.3
Miss Belle	Ferry-Morse	7.7	2.7
NCX 4002	Niagara	8.0	2.7
California Wonder 300 TMR	Ferry-Morse	7.3	3.0
Jade	Ferry-Morse	6.7	2.3
California Wonder	Keystone	8.0	2.0
Wonder Giant		8.0	3.0
Yolo Wonder A		8.0	3.0
Bellringer	Burpee	5.0	1.8
Emerald Giant	Northrup King	8.0	4.0
Grande Rio 66	Baxter	9.0	4.0
Yolo Wonder 43	Ferry-Morse	6.0	2.3
E41X29	Ferry-Morse	8.0	3.0
Keystone Resistant Giant No. 3		7.5	3.0

* Rated: 1 = No disease
5 = Foliage from up to 2/3 plant height infected with Bacterial Leaf Spot
10 = Complete loss of foliage

**Rated: 1 = No virus
5 = Plant death occurs

PEPPER VARIETY DEMONSTRATION

wer: Charles Halbardier

ation: Hondo

nty Extension Agent: Glenn Bragg, Medina County

porting Specialists: Jerral D. Johnson, Extension Plant Pathologist
Sam Cotner, Extension Horticulturist

e Transplanted: March 18, 1974

e Evaluated: June 6, 1974

l Type: Sandy Loam

clusions: Resistant Florida Giant, California Wonder 300 TMR, Bellringer, Canape, Belaire and Keystone 6702 produced uniformly shaped fruit, although the fruit shape of Canape is undesirable. Canape showed good resistance to Bacterial Leaf Spot and virus.

Table 1. Characteristic of Pepper Fruit Produced by 18 Varieties.

Variety	Length[1]	Width[1]	Width/Length Ratio[1]	Locules No.- % of Sample	Wall Thickness[1]	Wt. 10 Peppers	Pepper Color[2]	Uniformity of Color	Shape[4]
sistant Florida Giant (FM)	3.4	3.5	1.03	2 - 10 3 - 50 4 - 30 5 - 10	0.24	3 lb. 6 oz.	G	G	B
re Set (Herbst)	3.4	2.7	0.79	3 - 60 4 - 40	0.20	2 lb. 6 oz.	G	G	P
rly Bountiful (Herbst)	3.8	2.6	0.68	3 - 60 4 - 40	0.15	2 lb. 3 oz.	G	G	P
lo Wonder L (FM)	3.3	3.0	0.90	3 - 70 4 - 50	0.18	2 lb. 12 oz.	G	P	I

Variety	Length[1]	Width[1]	Width/Length Ratio[1]	Locules No.- % of Sample	Wall Thickness[1]	Wt. 10 Peppers	Pepper Color	Uniformity of Color	Shape[4]
Jade (FM)	3.4	2.6	0.76	2 - 10 3 - 60 4 - 30	0.22	2 lb. 9 oz.	G	F	P
Midway (B)	3.4	3.0	0.88	3 - 50 4 - 50	0.21	2 lb. 14 oz.	DG	G	I
Keystone Resistant Giant #3 (Keystone)	3.2	3.1	0.97	2 - 10 3 - 30 4 - 40 5 - 20	0.16	2 lb. 6 oz.	DG	G	B
Yolo Wonder 43 (FM)	3.4	3.2	0.94	--	0.19	3 lb.	G	F	B
California Wonder 300 TMR (ASGROW)	3.6	3.2	0.89	--	0.20	4 lb. 6 oz.	G	G	B
Bellringer (Burpee)	3.5	3.2	0.91	3 - 30 4 - 70	0.25	3 lb. 10 oz.	G	F	B
Canape (Berbot)	3.0	2.7	0.90	2 - 25 3 - 75	0.16	2 lb. 4 iz.	G	G	P
Early Calwonder	3.1	2.8	0.90	3 - 60 4 - 40	0.18	3 lb. 8 oz.	G	F	I
Belaire (FMC)	3.4	3.4	1.00	3 - 80 4 - 20	0.21	3 lb. 9 oz.	G	G	B
Idabelle (FM)	3.0	2.9		3 - 40 4 - 60	0.16	2 lb. 9 oz.	G	F	B

Variety	Length[1]	Width[1]	Width/Length Ratio[1]	Locules No.- % of Sample	Wall Thickness[1]	Wt. 10 Peppers	Pepper Color	Uniformity of Color	Shape[4]
Keystone 2668 (Keystone)	2.9	3.0	1.03	2 - 22 3 - 33 4 - 45	0.18	2 lb. 10 oz.	G	F	B
NCX 4002 (FMC)	3.3	3.0	0.91	2 - 10 3 - 80 4 - 10	0.18	2 lb. 15 oz.	G	P	I
Keystone 1933 (Keystone)	3.3	3.2	0.96	3 - 50 4 - 50	0.23	3 lb. 8 oz.	G	G	I
Keystone 6702 (Keystone)	3.1	3.3	1.06	3 - 70	0.18	2 lb. 15 oz.	G	F	B

[1]All measurements expressed in inches.

[2]Pepper Color: DG (Dark Green)
G (Green)

[3]Uniformity of Color: G (Good)
F (Fair)
P (Poor)

[4]Shape: B (Blocky)
P (Pointed)
I (Irregular)

[5]W/L Ratio: Less than 1.0 = Pointed
1.0 = Round
Greater than 1.0 = Flat

Table 2. Plant Characteristics and Disease Reaction of 18 Pepper Varieties.

Variety	Plant Height[1]	Fruit Load[2]	Maturity[3]	Vigor[4]	Foliage Density[5]	Bacterial Leaf Spot Occurrence % Foliage	Virus % Infection
Resistant Florida Giant #3	M	M	M	G	G	100	0
Sure Set	M	H	E	G	F	15	0
Early Bountiful	S	H	E	F	P	25	0
Yolo Wonder L	ML	M	M	G	G	100	13
Belaire	ML	H	M	F	F	100	6
Midway	L	M	ME	F	F	100	4
Idabelle	ML	M	ME	G	G	100	0
Early Calwonder	S	M	ME	F	P	100	4
Canape	M	H	E	G	F	0	0
Jade	M	L	L	F	F	100	5
California Wonder 300 TMR	L	M	L	F	G	100	0
Yolo Wonder 43	M	M	ML	G	G	100	5
Keystone Resistant Giant	L	H	M	G	G	100	0
Bellringer	-	-	-	-	-	100	0
Keystone 1933	L	M	M	F	G	100	13
Keystone 6702	M	H	ML	F	G	100	0
Keystone 2668	M	M	ME	F	F	100	0
NCX 4002	L	M	ML	F	G	100	6

[1]Plant Height: S (Small)
M (Medium)
ML (Medium Large)
L (Large)

[2]Fruit Load: L (Low)
M (Medium)
H (Heavy)

[3]Maturity: E (Early)
ME (Moderately Early)
M (Medium)
ML (Moderately Late)
L (Late)

[4]Vigor: G (Good)
F (Fair)

[5]Foliage Density: P (Poor)
F (Fair)
G (Good)

ETHREL DEMONSTRATION ON CAYENNE PEPPERS

Grower: Charles Halbardier

Location: Hondo

County Extension Agent: Glenn Bragg, Medina County

Supporting Specialists: Sam D. Cotner, Area Extension Vegetable Specialist
Jerral D. Johnson, Extension Plant Pathologist

Treatments: Ethreal (1 lb./gallon)
0.5 lb./A
1.0 lb./A
1.5 lb./A

Method of Application: T = Sprayed over the top
S = Sprayed at side (lower 2/3 of plant)

Pre-Spray Treatment: P = All red peppers picked prior to spraying
NP = No picking done prior to spraying

Yield: All yield data based on an acre basis

Plot Size: 25 feet

Replication: 3

Rate of Water/A: 30 gallons applied at 25 psi

Conclusions: All includible data indicates that Ethrel at 0.5 pounds per acre is sufficient to result in maximum yields of red cayenne peppers. Rates in excess of 0.5 pounds per acre result in rapid dessication of the plant, frost sunburn and decay and drop of all fruit. Where multiple pickings are desired, applications at 0.5 pounds per acre applied as a directed spray to the lower half of the plant is advisable and practical.

Table 1. Effect of Ethrel on Yield of Marketable Red Cayenne Pepper

Treatment	Method of Application	Pre-Spray Treatment	Yield per Acre in Pounds No. 1	No. 2	Total
Ethrel 0.5 lb./A	T	P	1346.5	255.5	1602.0
Ethrel 1.5 lb./A	T	P	1382.3	350.0	1732.3
Ethrel 0.5 lb./A	S	P	2904.0	290.4	3194.4
Ethrel 1.0 lb./A	S	P	2119.9	365.9	2485.8
Ethrel 1.5 lb./A	S	P	1161.6	290.4	1452.0
Ethrel 0.5 lb./A	T	NP	4910.0	546.0	5456.0
Ethrel 1.0 lb./A	T	NP	2468.4	145.0	2613.4
Ethrel 1.5 lb./A	T	NP	4722.0	145.2	4862.2
Ethrel 0.5 lb./A	S	NP	339.6	400.8	3740.4
Ethrel 1.0 lb./A	S	NP	2904.0	435.6	3339.6
Ethrel 1.5 lb./A	S	NP	2979.5	435.6	3415.1
Control	-	P	470.5	110.4	580.9
Control	-	NP	365.9	-	365.9

Table 2. Effect of Ethrel on the Premature Drop of Cayenne Peppers

Treatment	Method of Application	Pre-Spray Treatment	Premature Drop in Pounds Red	Green	Total
Ethrel 0.5 lb./A	T	P	36.3	108.9	145.2
Ethrel 1.0 lb./A	T	P	36.3	435.6	471.9
Ethrel 1.5 lb./A	T	P	145.2	871.2	1016.4
Ethrel 0.5 lb./A	S	P	-	36.3	36.3
Ethrel 1.0 lb./A	S	P	145.2	435.6	580.8
Ethrel 1.5 lb./A	S	P	145.2	435.6	580.8
Ethrel 0.5 lb./A	T	NP	36.3	108.9	145.2
Ethrel 1.0 lb./A	T	NP	544.5	254.1	798.6
Ethrel 1.5 lb./A	T	NP	834.9	726.0	1560.9
Ethrel 0.5 lb./A	S	NP	36.3	-	36.3
Ethrel 1.0 lb./A	S	NP	108.9	399.3	508.2
Ethrel 1.5 lb./A	S	NP	1125.3	508.2	1633.5

Table 3. Effect of Ethrel on Cayenne Pepper Plants - 9 Days After Treatment

Treatment	Method of Application	Bloom[1]	Defoliation	Fruit Left on Plant[3]
Ethrel 0.5 lb./A	T	1	2	4
Ethrel 1.0 lb./A	T	1	4	3
Ethrel 1.5 lb./A	T	1	5	1
Ethrel 0.5 lb./A	S	3	2	4
Ethrel 1.0 lb./A	S	2	2	4
Ethrel 1.5 lb./A	S	1	4	3
Control	-	5	1	5

1 = Rating of the amount of blooms on plant 9 days after treatment
1 = No blooms
5 = Maximum no. of blooms

2 = Rating of defoliation occurring after Ethrel treatment
1 = No defoliation
5 = Only scattered leaves remaining after treatment

3 = Rating of amount of fruit remaining on plant after treatment and first harvest
1 = Less than 10% of fruit left on plant
5 = 85 - 100% of fruit left on plant

Table 4. Effect of Ethrel on Color Development of Cayenne Peppers Placed in Storage at 75°F

Treatment	Method of Application	Pre-Spray Treatment	Yield per Acre in Pounds No. 1 48 hrs.	No. 1 72 hrs.	No. 2 48 hrs.	No. 2 72 hrs.	Total
Ethrel 0.5 lb./A	T	P	726.0	653.4	108.9	145.2	1633.5
Ethrel 1.5 lb./A	T	P	871.2	435.6	326.7	181.5	1815.0
Ethrel 0.5 lb./A	S	P	471.9	363.0	108.9	36.3	980.1
Ethrel 1.0 lb./A	S	P	689.7	217.8	36.3	72.6	1016.4
Ethrel 1.5 lb./A	S	P	871.2	363.0	217.8	36.3	1488.3
Ethrel 0.5 lb./A	T	NP	471.9	363.0	108.9	108.9	1052.7
Ethrel 1.0 lb./A	T	NP	762.3	326.7	217.8	36.3	1343.1
Ethrel 1.5 lb./A	T	NP	435.6	145.2	72.6	72.6	726.0
Ethrel 0.5 lb./A	S	NP	290.4	399.3	181.5	36.3	907.5
Ethrel 1.0 lb./A	S	NP	617.1	471.9	108.9	108.9	1306.8
Ethrel 1.5 lb./A	S	NP	435.6	399.3	72.6	617.1	1524.6
Control	-	P	108.9	181.5	36.3	36.3	363.0
Control	-	NP	181.5	181.5	-	36.3	399.3

Table 5. Effect of Ethrel on the Yield of Marketable Cayenne Peppers

Treatment	Method of Application	Pre-Spray Treatment	Yield per Acre in Pounds			
			Field		Storage	
			No. 1	No. 2	No. 1	No. 2
Ethrel 0.5 lb.	T	P	1346.5	255.5	1379.4	254.1
Ethrel 1.0 lb.	T	P				
Ethrel 1.5 lb.	T	P	1382.3	350.0	1306.8	507.5
Ethrel 0.5 lb.	S	P	2904.0	290.4	834.9	145.2
Ethrel 1.0 lb.	S	P	2119.9	365.9	907.5	108.9
Ethrel 1.5 lb.	S	P	1161.6	290.4	1234.2	254.1
Ethrel 0.5 lb.	T	NP	4910.0	546.0	834.9	217.8
Ethrel 1.0 lb.	T	NP	2468.4	145.0	1089.0	254.1
Ethrel 1.5 lb.	T	NP	4722.0	145.2	580.8	145.2
Ethrel 0.5 lb.	S	NP	3999.6	400.8	689.7	217.8
Ethrel 1.0 lb.	S	NP	2904.0	435.6	1088.1	217.8
Ethrel 1.5 lb.	S	NP	2979.0	435.6	834.9	689.7
Control	-	P	470.5	110.4	290.4	72.6
Control	-	NP	365.9	-	363.0	36.3

Table 5. Continued

Treatment	Combined Total Yield in Pounds (No. 1 & No. 2)		Combined Total (Field & Storage)	Total Yield in Pounds of Unmarketable Fruit		
	Field	Storage		Green	Dropped	Total
Ethrel 0.5 lb.	1602.0	1633.5	3235.5	181.5	181.5	363.0
Ethrel 1.0 lb.						
Ethrel 1.5 lb.	1732.3	1815.0	3547.3	181.5	1016.4	1197.9
Ethrel 0.5 lb.	3194.4	980.1	7174.4	290.4	36.3	326.7
Ethrel 1.0 lb.	2485.0	1016.4	3501.4	181.5	580.8	762.3
Ethrel 1.5 lb.	1452.0	1488.3	2940.3	290.4	580.8	871.2
Ethrel 0.5 lb.	5456.0	1052.7	6508.7	399.3	217.8	617.1
Ehtrel 1.0 lb.	2613.4	1343.1	3956.5	108.9	871.2	980.1
Ethrel 1.5 lb.	4867.2	726.0	5593.2	72.6	1633.5	1706.1
Ethrel 0.5 lb.	3740.4	907.5	4647.9	254.1	72.6	326.7
Ethrel 1.0 lb.	3339.6	1306.8	4646.4	217.8	580.8	798.6
Ethrel 1.5 lb.	3415.1	1524.6	4939.7	181.5	1706.1	1887.6
Control	580.9	363.0	943.9	326.7	-	326.7
Control	365.9	399.3	765.2	108.9	72.6	181.5

POTATO VARIETY DEMONSTRATION

Grower: Van De Walle Farms

Location: Hondo

County Extension Agent: Glenn Bragg, Medina County

Supporting Specialists: Sam D. Cotner, Area Extension Vegetable Specialist
Nebraska Potato Council

Date Planted: February 16, 1970

Date Harvested: June 10, 1970

Fertilizer: 300 lbs./A 11-37-0 and 450 lbs./A 11-17-7 (both applied at time of planting). The 11-17-7 contained 11% sulphur, 1% magnesium, 0.25% copper, 0.10% iron, and 0.3% zinc.

Irrigation: Three irrigations during season. Also, 10 inches of rain late in May.

Spacing: 36" row spacing, 12" between plants

Seed Storage Treatments: Cold: Cold-stored at 40°F until immediately prior to planting
Warm: Cold-stored at 40°F until two weeks before planting. Then removed and stored at room temperature

Conclusion: Stand-Vigor of Plants: At emergence, no major differences were noted from "warm" vs. "cold" treated seed. However, when plant counts were taken one week later, the stand of New Haig, Red La Soda, and Sioux from the warm treated seed were significantly better than those from "cold" stored seed of the same varieties.

Plant development and vigor was observed again in March. At that time, faster early plant growth and greater vigor from the "warm" treatment for these varieties was especially noticeable. The differences in plant appearance were not apparent six weeks after emergence, but may have been reflected in tuber yield and quality had it been possible to evaluate the treatments separately at harvest.

Table 2. Yield

Variety	Average Marketable Yield Cwt./A No. 1	No. 2	Total #1 & #2	Average Tuber Weight (Oz.)	Specific[1] Gravity	Chip Color[1] Mini Fry Test	Rd. Value
Red La Soda	149	14	163	3.4	1.071	6.0	32.9
Norchip	108	7	115	2.5	1.081	5.0	37.0
Sioux	99	8	107	3.7	1.074	7.0	22.3
Kennebec	85	8	93	4.4	1.075	6.0	34.2
High Plains	81	5	86	2.2	1.074	6.0	33.2
New Haig	69	6	75	2.5	1.074	6.0	33.3
Shurchip	65	5	70	2.4	1.075	3.0	46.1
Norgold	66	2	68	2.5	1.068	8.0	18.1

[1]Specific gravity and chip color 20 days after harvest

[2]Acceptable Rd. color value 40.0.

Because of excessive rains late in May, harvest was delayed and considerable difficulty was experienced in the operation. As a result, it was not possible to obtain separate yield for the "warm" vs. "cold" treated seed. Data shown in the table relates to the combined produce for each variety.

Samples for specific gravity readings and chipping tests were obtained at harvest and shipped by air to Lincoln, Nebraska, for evaluation by the University of Nebraska. The shipment was apparently miscarried and did not arrive for tests until nearly three weeks later. Hence, these data regarding quality are not likely to be representative of the crop at the time of harvest.

Yields were generally satisfactory and the tubers were exceptionally smooth and well formed considering the poor growing conditions, which were encountered late in the growing season. Red La Soda continues to be the highest yielding potato for the Winter Garden area.

Table 1. Stands Obtained From "Warm" and "Cold" Seed Storage.

Variety	Percent of Full Stand[1]	
	Cold Storage (40°F)	Warm Storage (Room Temp.)
New Haig	90	100
Kennebec	62	60
High Plains	85	84
Norgold	74	71
Red La Soda	68	85
Norchip	71	65
Shurchip	86	77
Sioux	59	75

[1] Based on three replications, 100 feet long

SPINACH VARIETY DEMONSTRATION

wer: C. W. Marvin

ation: San Antonio

nty Extension Agent: Thurman Kennedy, Bexar County

porting Specialists: Jerral D. Johnson, Extension Plant Pathologist
Sam D. Cotner, Area Extension Vegetable Specialist

e Planted: February 2, 1973

e Irrigated: February 3, 1973

bicide: Ro Neet

t Size: 25 ft. with 5-ft. alleys (double row)

lications: 3

nclusion: White Rust reached epidemic levels in the demonstration plots. Dixie Market, Dixie Market S.R. and Hy 7241 were the three best varieties. The standard varieties Hy 621, Hy 612, and Hy 424 did not show resistance under the heavy disease pressure of this demonstration. Hy 7, Resistoflay, Seven R, Dixie Market, Hy 621, Hy 612, and Hy 424 produced the highest yields. With the exception of Hy 424, all the above entries were subject to bolting as the season progressed.

Variety	Seed Company	Leaf Color[1]	Leaf Shape[2]	Plant Size[3]	Bolting[4]	White Rust[5]	Yield/A[6]
ld Resistant Savoy	Stokes	DG	S	S	1.0	5.0	4,402
preme Savoy	Dessert	DG	S	M	1.3	8.0	7,703
oomsdale Longstanding D.K.	Stokes	DG	S	S	1.0	8.7	5,133
oomsdale Longstanding	Keystone	DG	S	M	1.0	7.7	8,391
oomsdale Longstanding	Dessert	DG	S	M	1.0	8.8	6,878
nter Bloomsdale	Swaan	DG	S	M	1.0	8.0	6,283
sistoflay	Dessert	G	F	T	5.3	6.0	12,424
rly Hy 7	Asgrow	F	SS	T	5.7	6.7	10,730

Variety	Seed Company	Leaf Color[1]	Leaf Shape[2]	Plant Size[3]	Bolting[4]	White Rust[5]	Yield/A[6]
Hy 7	Dessert	G	SS	T	7.0	5.7	13,106
Hy 7	Ferry-Morse	G	SS	T	3.0	7.7	9,673
Hy 7	Northrup King	G	SS	T	2.3	7.3	9,997
Hy 7	Keystone	G	SS	M	1.7	7.0	6,602
Hy 8	Dessert	G	SS	T	5.3	6.3	8,710
Hy Cheasapeake	Ferry-Morse	DG	SS	M	1.0	6.0	7,840
Cheasapeake	Northrup King	G	SS	M	1.3	7.7	5,871
Dixie Market	Northrup King	DG	S	T	7.7	4.7	9,810
Dixie Market	Ferry-Morse	G	S	T	6.7	5.3	9,398
Dixie Market	Dessert	G	S	M	8.7	5.0	11,280
Dixie Market S.R.	Dessert	DG	S	T	7.3	3.3	9,700
Bounty	Dessert	DG	S	M	1.0	6.0	7,659
Bounty	Northrup King	DG	S	M	1.0	8.3	6,558
Bonus	Dessert	DG	SS	M	1.0	7.7	9,942
Hy 612	Ferry-Morse	DG	S	T	6.7	7.3	10,911
Hy 621	Northrup King	DG	S	T	6.7	7.3	11,049
Hy 424	Keystone	G	F	T	1.0	6.3	10,361
Norgreen	Northrup King	G	F	M	1.0	7.0	5,871
Nores	Northrup King	DG	F	M	1.0	6.0	4,633
Grandstand	Asgrow	DG	SS	M	1.7	8.0	6,972
Packer	Asgrow	DG	SS	M	1.0	5.0	6,878
High Pak	Asgrow	G	F	T	1.3	7.0	9,673
Marathon	Asgrow	G	S	M	1.0	8.3	7,472
Seven R	Asgrow	G	SS	T	3.7	6.3	11,555
71105	Herbst	DG	SS	M	1.0	6.7	7,153
71466	Herbst	G	F	M	1.0	6.7	7,474
Hy 30	Agway	DG	S	M	3.3	6.7	9,035
XP73 563	Agway	G	F	M	1.0	5.7	8,666
XP73 564	Agway	G	SS	M	1.0	6.7	8,325
XP73 565	Agway	G	S	M	1.0	9.0	7,335
Exp. Hy 1726	Keystone	DG	SS	M	1.0	8.0	5,183
Exp. Hy 1727	Keystone	DG	F	M	2.7	6.7	7,912
Exp. Hy 7241	Keystone	G	F	M	1.0	4.0	8,116
American	Stokes	DG	S	S	2.0	5.5	7,016
Savoy Supreme	Northrup King	DG	S	M	1.0	8.0	7,153
Savoy Supreme	Ferry-Morse	DG	S	M	1.0	7.3	8,160

Comparative Ranking for White Rust, Bolting, and Yield of 44 Spinach Varieties Grown at San Antonio in Spring, 1973

Variety	Seed Company	White Rust	Bolting	Yield/A
Hy 7	Dessert	7	13	1
Resistoflay	Dessert	8	10	2
Seven R	Asgrow	9	9	3
Dixie Market	Dessert	4	16	4
Hy 621	Northrup King	12	12	5
Hy 612	Ferry-Morse	8	12	6
Early Hy 7	Asgrow	10	11	7
Hy 424	Keystone	9	1	8
Hy 7	Northrup King	12	5	9
Bonus	Dessert	12	1	10
Dixie Market	Northrup King	3	15	11
Dixie Market S.R.	Dessert	1	14	12
High Pak	Asgrow	7	2	13
Hy 7	Ferry-Morse	13	7	13
Dixie Market	Ferry-Morse	5	12	14
Hy 30	Agway	10	8	15
Hy 8	Dessert	9	10	16
XP73 563	Agway	7	1	17
Bloomsdale Longstanding	Keystone	13	1	18
XP73 564	Agway	10	1	19
Savoy Supreme	Ferry-Morse	12	1	20
Exp. Hy 7241	Keystone	2	1	21
Exp. Hy 1727	Keystone	10	6	22
Hy Chesapeake	Ferry-Morse	8	1	23
71466	Herbst Bros.	10	1	24
Supreme Savoy	Dessert	14	2	25
Bounty	Dessert	8	1	26
Marathon	Asgrow	15	1	27
XP73 565	Agway	17	1	28
71105	Herbst Bros.	10	1	29
Savoy Supreme	Northrup King	14	1	29
America	Stokes	6	4	30
Grandstand	Asgrow	14	3	31
Bloomsdale Longstanding	Dessert	17	1	32
Packer	Asgrow	4	1	32
Hy 7	Keystone	11	3	33

Variety	Seed Company	White Rust	Bolting	Yield/A
Bounty	Northrup King	15	1	34
Winter Bloomsdale	Swaan	14	1	35
Chesapeake	Northrup King	13	2	36
Norgreen	Northrup King	11	1	36
Exp. Hy 1726	Keystone	14	1	36
Bloomsdale Longstanding D.K.	Stokes	16	1	38
Nores	Northrup King	8	1	39
Cold Resistant Savoy	Stokes	4	1	40

Definition of Symbols

[1]Leaf Color: DG = Dark Green
G = Green

[2]Leaf Shape: SS = Semi Savoy
S = Savoy
F = Flat

[4]Bolting: 1 = No bolting
10 = All plants bolted

[6]Yield = Yield based on 1 time harvest on three 25 ft. plots

[3]Plant size: S = Short (6 inches high or less)
M = Moderate (7-18 inches in height)
T = Tall (Plant height greater than 18 inches)

[5]White Rust: 1 = No White Rust
10 = All plants killed by White Rust

SPINACH VARIETY DEMONSTRATION

Grower: Roy Parker

Location: Pearsall

County Extension Agent: Eldred Jordan, Frio County

Supporting Specialists: Jerral D. Johnson, Extension Plant Pathologist
Sam D. Cotner, Area Extension Vegetable Specialist

Date Planted: October 25, 1973

Plot Size: 20 feet long on 60-inch beds with 6 rows per bed

Fertilizer: 600 pounds 14-12-8/Acre broadcast, Preplant

Conclusion: White Rust was not a problem during this demonstration. Horticulturally, the better entries included Hy 424, Hy 612, Dixie Market S.R., Hy 621, Packer, and High Pack. The USDA entries appear to have potential and are worthy of additional evaluation.

Selected Spinach Varieties

Variety	Seed Company	Leaf Characteristics[2]	Height[3]	Color[1]	White Rust[4]
Hy 424	Ferry-Morse	F	MS	LG	1
S72-1	USDA (Dr. Webb)	S	M	DG	1
S72-2	USDA (Dr. Webb)	S	M	DG	1
S72-4	USDA (Dr. Webb)	F	M	LG	1
71105	Herbst	S	MS	DG	1
73565	Agway	S	S	DG	1
Early Hy 7	Asgrow	S	M	G	1

Variety	Seed Company	Leaf Characteristics	Height	Color	White Rust
Seven R	Asgrow	S	M	G	1
71466	Herbst	S	M	DG	1
73563	Agway	S	M	G	1
Hy 612	Harris	S	M	DG	1
Dixie Market	Ferry-Morse	S	M	DG	1
Hy 30	Agway	S	M	G	1
Medania	Harris	F	M	LG	
73563	Agway	SS	M	G	1
Hy 8	Dessert	S	M	G	1
Hy 768	Ferry-Morse	SS	M	G	1
Dixie Market S.R.	Dessert	S	L	G	1
Pay Day	Niagara	S	MS	G	1
Fadris	Harris	SS	ML	G	1
Norgreen	Northrup King	S	M	DG	1
Chesapeake		S	M	G	1
Resistoflay	Dessert	F	ML	G	1
High Pak	Asgrow	S	MS	G	1
Nores	Northrup King	S	M	G	1
Winter Wonder	Harris	S	MS	DG	1
Hy 621	Harris	S	M	G	1
7241	Keystone	SS	ML	G	1
Bounty	Ferry-Morse	S	M	G	1
Grandstand	Asgrow	S	M	G	1
Avon	Ferry-Morse	S	M	DG	1
Packer	Asgrow	S	ML	G	1
Savoy Supreme		S	MS	G	1
Marathon	Asgrow	S	MS	G	1
Hy 7	Northrup King	S	ML	G	1

Comments: No White Rust observed.

[1]Leaf Color: LG = Light green
DG = Dark green
G = Green

[2]Leaf Characteristics: SS = Semi Savoy
S = Savoy
F = Flat

[3]Leaf Height: ML = Moderately Long
MS = Moderately Short
M = Moderate
L = Long
S = Short

[4]White Rust Rating: 1 = No White Rust
10 = All plants killed by White Rust

SPINACH WHITE RUST VARIETY DEMONSTRATION

Grower: Alvin Mann

Location: Pearsall

County Extension Agent: Eldred Jordan, Frio County

Supporting Specialists: Jerral D. Johnson, Extension Plant Pathologist
Sam D. Cotner, Area Extension Vegetable Specialist

Date Planted: October 25, 1973

Plot Size: 20 feet long on 60-inch beds. (6 rows per bed)

Soil Type: Sand to sandy loam

Fertilizer: 500 lbs. 14-12-8/A Broadcast, Preplant

Insecticide: Disyston (preplant)

Herbicide: Ro Neet (preplant)

Conclusion: White rust was not a serious problem in the demonstration; only Hy 71105 was seriously damaged by white rust. Of the USDA lines, S72-2 possesses the best horticultural characteristics. Hybrids 612 and 621 still appear to be superior to all other entries.

Variety	Seed Company	Leaf Characteristics[1]	Height[2]	Color[3]	Texture[4]	White Rust*
Hy 71105	Herb	S	MS	G	F	3
Hy 7	Northrup King	S	M	DG	F	2
Marathon	Asgrow	S	ML	G	G	1
SP 73565	Agway	S	ML	G	G	1
Hy 612	Harris	S	M	DG	G	1
Seven R	Asgrow	S	ML	G	G	1

Variety	Seed Company	Leaf Characteristics[1]	Height[2]	Color[3]	Texture[4]	White Rust*
Hy 424	Ferry-Morse	F	ML	G	FG	1
Hy 7241	Keystone	SS	MS	LG	P	1
Hy 71466	Nerbst	S	MS	LG	P	1
Nores	Northrup King	S	MS	G	F	2
Fadris	Harris	SS	M	G	FG	2
S72-4	USDA (Dr. Webb)	F	L	LG	FG	1
S72-1	USDA (Dr. Webb)	S	M	DG	G	1
S72-2	USDA (Dr. Webb)	S	M	DG	G	1
Hy 7	Northrup King	S	M	DG	G	1
Hy 621	Harris	S	M	G	G	1
High Pak	Asgrow	S	M	G	F	1
Winter Wonder	Harris	S	M	G	F	1
Bounty	Ferry-Morse	S	M	G	G	1
Grandstand	Asgrow	S	M	G	F	1
Pay Day	Niagara	S	M	G	F	1
Medania	Niagara	SS	M	LG	F	1
Savoy Supreme	No Company	S	MS	DG	G	1
Hy 768	Ferry-Morse	SS	M	G	F	1
Packer	Asgrow	S	M	G	G	1
Norgreen	Northrup King	S	MS	G	F	1
Avon	Ferry-Morse	S	M	G	G	1

*White Rust Rating: 1 = No lesions
2 = Isolated lesions (1-2 on approximately 20% of the foliage)
3 = Numerous lesions (3-5 on approximately 40% of the foliage)

[1]Leaf Characteristics: SS = Semi Savoy
S = Savoy
F = Flat

[2]Leaf Height: ML = Moderately Long
MS = Moderately Short
M = Moderate
L = Long
S = Short

[3]Leaf Color: LG = Light green
DG = Dark green
G = Green

[4]Leaf Texture: FG = Fairly good
G = Good
F = Fair
P = Poor

SPINACH VARIETY DEMONSTRATION

Grower: Byrd Farms

Location: Crystal City

County Extension Agent: Dwight Harkey, Zavala County

Supporting Specialists: Jerral D. Johnson, Extension Plant Pathologist
Sam D. Cotner, Area Extension Vegetable Specialist

Date Planted: December 21, 1973

Date Evaluated: March 30, 1973

Replicated: 3 times with 30-ft. plots

Conclusion: White Rust is a serious disease problem in the area. Some of the better varieties were Dixie Market, Dixie Market S.R., and Hy 621. Hy 612, although widely planted, did not have the resistance that Hy 621 did. There were other varieties that had as much resistance to White Rust as did the top three varieties, but were not suitable for other horticultural reasons.

Blue mold was observed in the Bloomsdale type varieties. Savory Supreme was the most seriously damaged variety.

Variety	Seed Company	Color[1]	Leaf Character[2]	Plant Size[3]	Bolting[4]	White Rust[5]	Blue Mold[6]
High Pak	Asgrow	LG	SS	T	1	3	1
Early Hy 7	Asgrow	LG	SS	T	4	4	1
Marathon	Asgrow	G	S	M	1	1	1
Packer	Asgrow	G	S	T	4	1	1
Seven R	Asgrow	LG	SS	T	5	4	1
Grandstand	Asgrow	G	S	T	2	2	1
Hy 7	Ferry-Morse	LG	SS	M	3	1	1
Savoy Supreme	Ferry-Morse	G	S	M	1	2	1

Variety	Company	Color[1]	Leaf Character[2]	Plant Size[3]	Bolting[4]	White Rust[5]	Blue Mold[6]
Hy 612	Ferry-Morse	G	S	T	5	2	1
Dixie Market	Ferry-Morse	G	S	T	5	2	1
Hy Chesakeake	Ferry-Morse	G	S	M	1	1	3
Cold Resistant Savoy	Stokes	G	S	M	1	1	3
Bloomsdale Long-standing D.G.	Stokes	G	S	S	1	1	3
America	Stokes	DG	S	S	1	1	2
Bounty	Dessert	DG	S	T	1	3	1
Dixie Market S.R.	Dessert	G	SS	T	4	1	1
Dixie Market	Dessert	G	S	T	5+	1	1
Bloomsdale Long standing	Dessert	G	S	M	1	2	3
Bonus	Dessert	G	S	M	1	1	1
Hy 8	Dessert	LG	SS	T	5	1	1
Savoy Supreme	Dessert	LG	S	M	3	2	1
Resistoflay	Dessert	LG	F	T	4	1	1
Bounty	Northrup King	DG	S	S	1	1	1
Chesapeake	Northrup King	G	SS	T	1	4	2
Hy 7	Northrup King	G	S	T	3	2	2
Hy 621	Northrup King	G	S	T	4	1	1
Norgreen	Northrup King	G	SS	M	1	1	1
Savoy Supreme	Northrup King	G	S	M	1	1	1
Dixie Market	Northrup King	G	S	T	4	1	1
Nores	Northrup King	G	S	M	1	2	2
Bloomsdale Long-standing	Keystone	G	S	M	1	2	2
Exp. Hy 1727	Keystone	LG	F	T	3	2	1
Hy 424	Keystone	LG	F	T	3	2	1
Exp. Hy 1726	Keystone	DG	S	M	1	1	1
Hy 7	Keystone	G	SS	T	1	1	2
Exp. Hy 7241	Keystone	LG	SS	S	1	1	1
Winter Bloomsdale	Swaan	G	S	M	1	1	2
71105	Herbst	G	SS	M	1	1	1
71466	Herbst	G	SS	M	1	1	1

[1]Color: LG = Light Green
G = Green
DG = Dark Green

[2]Leaf Characters: S = Savoy
SS = Semi-Savoy
F = Flat

[3]Plant Size: T = Tall (18-24 inches)
M = Medium (12-18 inches)
S = Small (2-11 inches)

[4]Bolting: 1 = No bolting
5 = 90-100% of plants with flower stalks

[5]White Rust Rating: 1 = No White Rust
2 = Isolated lesions on scattered foliage
3 = Numerous lesions on scattered foliage
4 = Numerous lesions on most of the foliage
5 = Severe infection

[6]Blue Mold Rating: 1 = No lesions
2 = Isloated lesions on scattered foliage
3 = Numerous lesions on foliage

SOIL FUNGICIDE DEMONSTRATION ON SPINACH

Location: Crystal City

County Extension Agent: Ray Caraveo, Zavala County

Supporting Specialists: Jerral D. Johnson, Extension Plant Pathologist
Sam D. Cotner, Extension Horticulturist
Ran Newman, R & D Representative, PPG Industries

Treatments: Na Azide 0 lb./A.
30 lb./A.
40 lb./A.

Plot Size: 50 feet

Replication: 4

Type of Application: Preplant (2 weeks)
1. Bed
2. Apply Azide granules
3. Disc
4. Bed and Shape

Rainfall between treatment date and planting - 0.87 inches

Date Treated: September 12, 1974

Date Planted: September 27, 1974

Date Evaluated: October 11, 1974

Date Replanted: October 11, 1974

Date of Second Evaluation: November 15, 1974

Vegetable Varieties: Spinach - S-72-2
Beans - Nia. 773

Conclusions: The early toxic levels of Azide were removed from the soil by the second planting. At the time of the second planting, the soil temperature was reduced to a level marginal for green bean germination and growth. This made beans more susceptible to soil problems; thus, the early effect of the Azide in reducing soil fungi was demonstrated in increased development of the beans.

The spinach, although adapted to the cool soil, is subject to a number of soil fungi and the use of the Azide earlier reduced this problem.

Although the Azide appeared to be effective, due to the cost and extended waiting periods, its use would be doubtful at this time.

First Evaluation (October 11, 1974): In all cases the Azide plots were marked by poor stands while the control plots came up to an excellent stand of beans. The spinach control plots were somewhat slower than the beans, but were coming up to a stand. The Azide plots were again marked by poor stands. The Azide plots that did come up were stunted and dark green in color. The bean leaves were mouse-eared in shape. The spinach did not come up.

Second Evaluation (November 15, 1974):

Effect of Sodium Azide on Stand and Plant Vigor of Spinach and Beans Planted at Crystal City

Material	Rate/A.	Stand[1]	Plant Vigor[1]
Na Azide			
Spinach	40 lbs.	Good	Moderately Vigorous
Beans	40 lbs.	Good	Moderately Vigorous
Na Azide			
Spinach	30 lbs.	Good	Moderately Vigorous
Beans	30 lbs.	Good	Moderately Vigorous
Control			
Spinach	0	Poor	Weak
Beans	0	Poor	Weak

[1]These evaluations were made on November 15. The plots were treated on September 12 and planted on September 26. On October 11 the plots were replanted. This evaluation is on the second planting.

SOIL FUNGICIDE DEMONSTRATION ON SPINACH

Grower: Jack Chiodo

Location: Dilley

County Extension Agent: Eldred Jordan, Frio County

Supporting Specialists: Jerral D. Johnson, Extension Plant Pathologist
Sam D. Cotner, Extension Horticulturist

Method of Application:
1. Terraclor and Terraclor Super X: Applied on soil surface with Gandy Distributor. Disked to a depth of 3 to 4 inches.
2. Benlate, Difolatan: Applied as a surface spray using a John Bean model R-10-25 sprayer. Fungicide applied in 30 gallons of water per acre. Fan nozzles used. Disked to a depth of 3 to 4 inches.

Replications: 3

Length of Plot: 75 feet

Dated Treated: October 4, 1974

Date Planted: Approximately October 8, 9, 10

Date Watered: October 12 (rain - ½ inch)

Herbicide Information: All fungicide plots treated with Ro Neet.

Date Evaluated: November 14, 1974

Treatments

Material	Rate	Company
Terraclor	150 lbs./A.	Olin
Terraclor Super X	30 lbs./A.	Olin
Benlate	1½ lbs./A.	Dupont
Difolatan	5 pts./A.	Chevron
Difolatan + Benlate	5 pts./A. 1 lb./A.	------- -------

Conclusions: Based on the results of the demonstration, Rhizoctonia appears to be more commonly observed as a soil borne fungus occurring on spinach. The materials Terraclor and Terraclor Super X appear to be the most effective materials used. The Terraclor in both fungicides is especially effective against Rhizoctonia.

Although some of the fungicides used are currently cleared on spinach, it appears that Terraclor has the potential for reducing stand losses in spinach.

Effect of Soil Fungicides on the Stand and Growth of Four Week Spinach

Material	Rate/A.	Number Plants/ 1 ft. Row[1]	Percent Increased Over Control	Growth Index of Seedling[2]
Terraclor	150 lbs.	4.1	26	66
Terraclor Super X	30 lbs.	4.0	22	44
Benlate	1½ lbs.	3.7	13	57
Difolatan	5 pts.	3.7	13	59
Benlate + Difolatan	1 lb. 5 pts.	3.5	9	53
Control	--------	3.3	-	41

[1]Represents the mean of 3 replications with two random 42-inch areas counted in each replication

[2]Growth Index = $\frac{\text{Number of Plants in Rosette}}{\text{Total Number of Plants}}$ X 100

Counts were made in the two random 42-inch subsamples used in stand determination

SPINACH WHITE RUST VARIETY DEMONSTRATION

Grower: Byrd Farms

Location: Crystal City

County Extension Agent: Dwight Harkey, Zavala County

Supporting Specialists: Jerral D. Johnson, Extension Plant Pathologist
Sam D. Cotner, Extension Horticulturist

Date Planted: November 16, 1974

Date Evaluted: February 8, 1975

Conclusion: The USDA White Rust resistant varieties showed some resistance, but were not immune to the disease. S72-2 is the best of the USDA lines. Hy 612 and Hy 621 continue to be superior with regard to overall characteristics.

Variety	Seed Company	Leaf Characteristics[1]	Height[2]	Color[3]	Texture[4]	White Rust[5]
Early Hy 30	Agway	S	M	G	G	4
Winter Wonder	Harris	S	S	DG	G	7
Dixie Market	Ferry-Morse	S	M	G	G	5
Medania	Harris	SS	MS	G	F	5
Hy 621	Harris	S	MS	G	G	7
Savoy Supreme		S	M	G	G	6
Fadris	Harris	SS	MS	G	F	4
S72-2	USDA (Dr. Webb)	S	M	G	F	3
Avon	Ferry-Morse	S	MS	G	F	8
S72-4	USDA (Dr. Webb)	F	L	LG	FG	3
768	Ferry-Morse	SS	M	G	F	5
Nores	Northrup King	S	M	G	F	7
Exp. 73563	Herbst	S	ML	G	FG	6
61466		S	M	DG	FG	7
Hy 612	Harris	S	ML	G	G	7

Variety	Seed Company	Leaf Characteristics	Height	Color	Texture	White Rust
S72-1	USDA (Dr. Webb)	S	MS	G	F	5
71105	Herbst	S	M	DG	G	6
Exp. Hy 7241	Keystone	SS	ML	G	F	5
Exp. Hy 563	Agway	SS	M	G	F	8
Pay Day	Niagara	S	MS	G	F	9
Hy 612	Harris	S	M	G	G	8
Hy 7	Northrup King	S	ML	G	G	9
73565	Agway	S	MS	G	F	10
Dixie Market	Ferry-Morse	S	M	G	G	8

[3]Color: DG = Dark green
G = Green

[1]Leaf Characteristics: SS = Semi Savoy
S = Savoy
F = Flat

[2]Height: ML = Moderately Long
MS = Moderately Short
L = Long
M = Moderate
S = Short

[4]Texture: G = Good
FG = Fair to Good
F = Fair

[5]White Rust Rating: 1 = No White Rust
10 = All plants killed by White Rust

SPINACH VARIETY DEMONSTRATION

Grower: Mario Siller

Location: Pearsall

County Extension Agent: Eldred Jordan, Frio County

Supporting Specialists: Jerral D. Johnson, Extension Plant Pathologist
Sam D. Cotner, Extension Horticulturist
Jerry M. Parsons, Area Vegetable Specialist

Planting Data: Date Planted - September 30, 1975
Date Watered - October 2 and 3
4 row plots (2 rows/bed)
Fertilizer - 450 lbs./A., 20-10-4 + Zinc
Insecticide - Disyston with fertilizer
Planted with Planet Junior
Depth of Planting - 3/4 inch
Planter Setting - 18
Plot Length - 100 feet

Date Evaluated: November 27, 1975

Conclusions: No white rust was evident on any varieties in this trial. Savoy Supreme was heavily infected with anthracnose. Hybrids 612 and 621 were the best entries in the trial. Hybrid 424 was by far the best flat-leaf variety.

Evaluation of 14 Varieties of Spinach

Variety	Seed Company	Leaf Character[1]	Plant Character[2]	Color[3]	Maturity[4]	Yield Rating[5]	Overall Rating[6]
114	Harris	S	MF	DG	M	4	5
Payday	FMC	SS	F	G	M	4	8
Savoy Supreme	F-M	S	UR	DG	M	5	7
Cheasepeake	F-M	SS	UR	DG	E	1	6
Hy 621	Harris	S	UR	DG	E	1	4
Hy 424	NK	F	F	G	E	1	6

Variety	Seed Company	Leaf Character[1]	Plant Character[2]	Color[3]	Maturity[4]	Yield Rating[5]	Overall Rating[6]
Hy 612	Harris	S	UR	DG	E	4	3
Hy 4721	Keystone	F	MF	G	L	6	8
Dixie Market	Pieters-Wheeler	S	MF	DG	M	6	6
Dixie Market	F-M	S	MF	DG	M	6	7
Hy 621	NK	S	UR	DG	M	6	5
Hy 424	FM	F	F	G	L	1	8
Hy 612	FM	S	UR	DG	E	2	4

[1]Leaf Character: S = Savoy
SS = Semi Savoy
SS-F = Semi Savoy to Flat
F = Flat

[2]Plant Character: UR = Upright
MF = Moderately Flat
F = Flat

[3]Color: DG = Dark Green
G = Green

[4]Maturity: E = Early
M = Medium
L = Late

[5]Yield Rating: Potential yield, includes stand.
1 = Highest
10 = Lowest

[6]Overall Rating: Includes only plant characteristics
Flat leaves or low plant habit lowered rating.
1 = Highest
10 = Lowest

SPINACH FOLIAGE FUNGICIDE DEMONSTRATION

Grower: E. W. Ritchie, Jr.

Location: Crystal City

County Extension Agent: Ray Caraveo, Zavala County

Supporting Specialists: Jerral D. Johnson, Extension Plant Pathologist
Jerry M. Parsons, Area Extension Vegetable Specialist

Spraying Information: Rate - 8 gal./A.
Pressure - 25 psi
Back Pack Sprayer
Nozzel - 2-6x hollow cone, 12 inches apart

Plot Information: Size - 10 ft. wide x 27 ft. long
Replications - 2

Date Applied: December 8, 1975

Date Harvested: January 6, 1976

Treatments: Cyprex 3/4 lb./A.
Manzate 200 2 lb./A.
Bravo 1½ pts./A.
Control

Conclusions: The use of Manzate 200 did reduce the occurrance of white rust and also increased the yield of Hy 424 spinach. Bravo did not control the disease as well as Cyprex or Manzate 200. Due to low disease pressure the results are somewhat misleading. With increased disease pressure the control plots would be seriously reduced in yield.

Effect of Fungicide Applications on Yields and Disease Occurrange of Hy 424 Spinach

Treatment	Yield in Bu./A.[1]	Increase Due to Fungicide	Disease Ratings	
			White Rust[2]	Anthracnose[3]
Cyprex	609	2	2.0	2.3
Manzate 200	573	66	1.5	1.3
Bravo	551	56	3.3	2.3
Control	607	--	2.8	2.0

[1]Yield based on a 10x10 cut area. Method of cutting simulated machine harvest.

[2]White Rust Rating: 1 = No disease
2 = Isolated lesions on scattered lower leaves
3 = Numerous lesions on lower leaves
4 = Isolated lesions on upper and lower foliage
5 = Numerous lesions on upper and lower foliage

[3]Anthracnose Rating: 1 = No disease
2 = Simple lesions on scattered leaves
3 = Multiple lesions on scattered leaves

SPINACH FUNGICIDE DEMONSTRATION

Grower: Dr. Bell

Location: Pearsall

County Extension Agent: Eldred A. Jordan, Frio County

Supporting Specialists: Jerral D. Johnson, Extension Plant Pathologist
Sam D. Cotner, Area Extension Vegetable Specialist

Treatment:
1. Bravo 6F - 2 pts./A.
2. Bravo 6F - 3 pts./A.
3. Cyprex 65W - 1 lb./A.
4. Cyprex 65W - 1 1/2 lbs./A.
5. Manzate 200 - 2 lbs./A.
6. Control

Sprayer Information: Rate of water per acre - 60 gal.
Pressure - 100 psi
Boom Spacing - 20 inches
Nozzles - 8002E
Sprayer - Model R10-125. John Beam Sprayer furnished, courtesy of John Beam Division, FMC Corporation and Stull Chemical Company

Spray Dates: November 12
November 19
December 4

Plot Information: Plot length approximately 600 ft. long with 100-ft. plot left between plot 1 and 2 to serve as a check.

Each material replicated twice.

Conclusions: Fungicide Efficiency - All fungicides were found to reduce the occurrence of white rust; however, Cyprex was found to be the most effective (Table 1). Manzate 200 and Bravo were effective during periods of low disease occurrence yet did not control the disease when the innoculum pressure increased. In all cases when fungicides were applied as the air temperature became cooler the new foliage did not become infected with white rust. The old foliage which was infected dried and abcissed. The young

foliage in the control plots continued to be infected even though the climatic condition changed. Cyprex appeared to have the ability to stop infection once it had started (Table 3).

Phytotoxicity - Manzate 200 did not cause burn on spinach foliage. Bravo did cause some damage yet not enough to cause economic losses. Cyprex was found to be highly phytotoxic to spinach foliage even when used alone. Even at the one pound level the foliage was damaged enough to cause loss.

Tank Mix - Cyprex and Bravo were found to still be effective when mixed with selected insecticides. When mixed with Orthine the control of white rust was greater than when the fungicides were used alone. The most severe burn occurred in the Dyfonate + Cyprex, Diazinon + Cyprex, Lanate and Dyfonate + Bravo plots.

Weather and Disease Occurrence - The occurrence of white rust was found to be positively correlated with the air temperature. No other correlations could be made from the data.

Table 1. Effect of Fungicides on the Occurrence of White Rust in Hybrid 621 Spinach at Pearsall

Material	Rate/A	Number Infected Plants in 100 Feet of Row			
		Nov. 19	Nov. 27	Dec. 4	Dec. 11
Manzate 200 80W	3 lbs.	15	58	14	9
Cyprex 65W	1 lb.	6	3	14	2
Cyprex 65W	1 ½ lb.	12	2	8	1
Bravo 6F	2 pts.	46	82	25	4
Bravo 6F	3 pts.	29	37	18	4
Control	------	31	All Plants	All Plants	All Plants

Table 2. Phytotoxicity of Fungicides on Foliage of Hybrid 621 Spinach

Material	Rate/A	Phytotoxicity Rating 1 - 10
Manzate 200	3 lb.	1.0
Cyprex	1 lb.	6.5
Cyprex	1½ lb.	8.0
Bravo 6F	2 pt.	2.0
Bravo 6F	3 pt.	2.0
Control		1.0

Rating: 1 = No burn; 5 = Economic loss would occur; 10 = Maximum loss

Table 3. Effect of Tank Mixes on White Rust and Phytotoxicity of Fungicides and Insecticides on Spinach

Material	Rate/A	White Rust[1]	Phytotoxicity[2]
Galecron	1 pt.	10	5
Galecron +	1 pt.		
Cyprex	1½ pt.	4	3
Galecron +	1 pt.		
Bravo	3 pt.	10	1
Dyfonate	1½ qt.	6	3
Dyfonate +	1½ qt.		
Cyprex	1½ lb.	6	8
Dyfonate +	1½ qt.		
Bravo	3 pt.	9	6
Diazinon	1 pt.	6	1
Diazinon +	1 pt.		
Cyprex	1½ lb.	8	5
Diazinon +	1 pt.		
Bravo	3 pt.	5	2

Material	Rate/A	White Rust	Phytotoxicity
Lanate	1 qt.	8	4
Lanate + Cyprex	1 qt. 1½ lb.	5	3
Lanate + Bravo	1 qt. 3 pt.	5	3
Bravo	3 pt.	5	3
Orthine	1 lb.	5	1
Orthine + Cyprex	1 lb. 1½ lb.	4	1
Orthine + Bravo	1 lb. 3 qt.	5	1

[1]Rating System: 1 - No White Rust
10 - All Foliage Infected

[2]Rating System: 1 = No Foliage Injury
10 = Majority of Foliage Showing Damage

Table 4. Effect of Environmental Factors on the Occurrence of White Rust in Spinach

Date of Observation	Average Temperature[1]	Av. Relative Humidity[1]	Average Precipitation	Av. Hours Leaf Surface Wet[1]	Disease Occurrence (Non-Infected) Plots in 100 Ft. Row Sprayed	Unsprayed
November 19	65.6	94.6	0.23	6.5	21	31
November 27	63.8	92.3	0.32	4.38	36	200 (Approx.)
December 4	52.6	95.3	0.15	4.57	16	200 (Approx.)
December 11	46.8	100.0	0.50	1.4	4	200 (Approx.)

[1]The values represent the average figures for the seven days prior to the day the disease occurrence counts were made.

SPINACH SEED TREATMENT DEMONSTRATION

Location: Crystal City

County Extension Agent: Ray Caraveo, Zavala County

Supporting Specialist: Jerral Johnson, Extension Plant Pathologist

Plot Information: Date Planted - October 22, 1976
Fertilizer - 39-117-0
Herbicide - None
Planted with - Planet Jr., using a cone seeder
Irrigation - ¼-inch 24 hr. after planting and ¼-inch rainfall 24 hr. after planting
Seed per plot - 50 seed
Replication - 3 and 1 row/bed
Plot Length - 20 ft. with 5-ft. alleys
Date Evaluated - November 16
December 1

Conclusions: Captan and Thiram currently are the two fungicides used to prevent damping off in spinach. In the demonstration conducted, Captan had more plants per plot than did the other treatments except for Captan + Benlate. The Captan plots were also growing off well as shown by the December 1 evaluation. The Thiram plots were somewhat reduced in vigor and had a slightly poorer stand.

Of the new combinations and materials evaluated, Demosan - T, Captan + Benlate and Captan + Thiram appear to have the most promise as new seed treatments. Demosan 65 was used at one half the rate of Demosan - T and this may explain the difference in the stand counts.

Captan + Botran, Vitavax and Terra-Coat appeared to be toxic to the spinach as shown by the poor stand count and growth of the plants.

Table 1. Seed Treatment Demonstration

Treatment	Rate/100 lb. seed	% of seed planted that were growing on Nov. 16[1]	Visual evaluation[2] on Dec. 1
Captan (25%) + Benlate (50%)	1 + ½ lb.	89	2.3
Captan (25%)		88	2.0
Demosan - T (62%)	2/3 lb.	88	2.3
Captan (25%) + Thiram (50 red)	1 + ½ lb.	87	2.0
Thiram (50 red)	½ lb.	80	2.8
Demosan (65%)	1/3 lb.	80	2.8
Captan + Botran (30% + 30%)	½ lb.	79	2.6
Control	-------	75	3.3
Vitavax (75w)	¼ lb.	74	2.5
Terra-Coat (SD 205)	½ lb.	72	2.6

[1]50 seed planted on October 23, 1976

[2]Visual evaluation based on plant growth and stand (December 1): 1 = Excellent growth and stand
2 = Good growth and stand
3 = Weak growth and fair stand
4 = Weak growth and poor stand
5 = Poor growth and isolated stand

SPINACH SOIL FUNGICIDE DEMONSTRATION

Location: Crystal City

County Extension Agent: Ray Caraveo, Zavala County

Supporting Specialists: Jerral Johnson, Extension Plant Pathologist
Sam Cotner, Extension Horticulturist
Jerry Parsons, Area Extension Vegetable Specialist

Plot Information:
Date Planted: October 22, 1976
Fertilizer: 39-117-0
Herbicide: None
Planted with: Planet Jr. using #15 plate
Date Evaluated: November 16
December 1

Watering: ¼-inch 24 hr. after planting and ¼-inch rainfall 24 hr. after planting
Replication: 5 and 2 rows/Bed
Plot Size: 30 ft. with 4-ft. alleys.

Method of Application: Captan and Benlate (infurrow) = Infurrow 16 gal./A using Delevan No. 3 flat fan, tractor speed 1.8 mph.
All other treatments = applied over top and then watered down. 30 gal. of water/A using a Tee Jet Flat Fan #3006, tractor speed 1.8 mph.

Conclusion: Demosan, Difolatan, Thylate, Benlate, Topsin M and Terraclor were all found to significantly increase the spinach stand when analyzed statistically. The visual evaluation further enforced this difference. The control was found to be close to the top on visual evaluation; however, this can be partially explained by the growth habit of spinach. Where they are widely spaced, the plants will tend to spread giving the appearance of a greater stand than is actually present. The Captan plots had significantly lower stands than did the other treatments. The use of Bivert further reduced the stand. None of the materials used were cleared for spinach except for Captan.

In future demonstrations the treatments of Demosan 65, Difolatan, Thylate, Benlate, Topsin M and Terraclor should be included to verify the findings of this demonstration.

Surface Applied Fungicides for the Control of Spinach Damping Off

Treatment	Rate/A	Stand Counts[1]	Visual Evaluation[2]
Demosan 76	2 lb.	51.0	1.4
Difolatan	5 pt.	48.5	1.5
Thylate	3 lb.	47.9	1.4
Benlate	1 lb.	45.3	1.9
Topsin M	1 lb.	44.6	1.9
Terraclor	13 lb.	43.6	1.2
Benlate (infurrow)	1 lb.	42.6	1.9
Control	----	39.4	1.6
Captan (infurrow)	6 lb.	24.9	2.0
Captan +	6 lb.		
Benlate	1 lb.	24.0	3.4
Captan +	6 lb.		
Bivert	1 pt.	19.5	3.2
Captan	6 lb.		
Demosan +	2 lb.		
Bivert	1 pt.	18.0	2.9

[1]Average no. of plants per 3 ft. of row

[2]Visual evaluation based on plant growth and stand (December 1)
1 = Excellent growth and stand
2 = Good growth and stand
3 = Weak growth and fair stand
4 = Weak growth and poor stand
5 = Poor growth and isolated stand

Summary of Spinach Soil Fungicide Demonstrations

From the results of the demonstrations, it is concluded that a species of Rhizoctonia is the primary fungus involved in reducing spinach stand. The materials Terraclor, Difolatan, Demosan 65, Benlate and Topsin M are known to have activity against this organism. The other materials were less effective or did not have any effect on this fungus. Isolations made from plant tissue earlier revealed Rhizoctonia species to be a part of the seedling disease complex.

Based on the results of these demonstrations it would appear that seed treated with Captan would have the best chance of surviving and growing off well. Terraclor and Demosan T are the better materials for planter box treatments; however, they are not currently cleared by EPA. Captan is the next best treatment, but also lacks EPA clearance.

Demosan 76 was the best surface application; however, it was not statistically better than Difolatan, Thylate, Benlate, Topsin M or Terraclor. Terraclor, Demosan 76 and Difolatan treated plots had the more vigorous plants when evaluated visually.

SPINACH PLANTER BOX DEMONSTRATION

Location: Crystal City

County Extension Agent: Ray Caraveo, Zavala County

Supporting Specialist: Jerral Johnson, Extension Plant Pathologist

Plot Information: Date Planted - October 23, 1976
Herbicide - None
Irrigation - ¼-inch within 24 hr. after planting + ¼-inch rainfall within 25 hr. of planting.
Fertilizer - 39-117-0
Planted with - Planet Jr. using Plate #15
Replication - 3 and 2 rows/bed
Dates Evaluated - November 16
December 1

Conclusions: The material Terraclor resulted in the highest stand count, but was lower in growth evaluations. The Captan and Thiram plots exhibited the best growth and had stands comparable to the Terraclor plots. Captan + Botran and Terraclor Super X plots had the poorest stands and were also showing signs of possible phytoxicity.

Future demonstrations should consider Terraclor, Demosan - T, and Captan as possible planter box treatments. Currently there are no materials cleared for this use by EPA.

Unicoat is a pelleted seed being used by Ferry-Morse Co. It currently contains no fungicide. Future work should look at Captan in combination with the pelleted material. This would put the chemical in direct contact with the seed and should provide better protection.

Table 2. Planter Box Fungicide Treatments

Treatment	Rate/100 lb. seed	Stand Counts[1]	Visual Evaluations[2]
Unicoat	-----	6.0	1.3
Terraclor	6¼ lb.	5.3	2.9
Demonsan - T	6¼ lb.	4.3	2.9
Captan	6¼ lb.	4.3	2.7
Thiram	6¼ lb.	4.0	2.3
Captan + Botran	6¼ lb.	3.5	3.3
Terraclor Super X	6¼ lb.	3.3	3.6

[1]Number of plants per 1 ft. of row (November 16)

[2]Visual evaluation of plant growth and stand (December 1): 1 = Excellent growth and stand
2 = Good growth and stand
3 = Weak growth and fair stand
4 = Weak growth and poor stand
5 = Poor growth and isolated stand

SQUASH VARIETY DEMONSTRATION

Grower: Palmer Brothers

Location: Pleasanton

County Extension Agent: Hollis D. Duke, Atascosa County

Supporting Specialists: Sam Cotner, Area Extension Vegetable Specialist
Jerral D. Johnson, Extension Plant Pathologist

Date Planted: March 30, 1973

Plot Size: 50 ft.

Replication: 3

Soil Type: Sand

Herbicide: None

Date First Harvested: May 8, 1973

Date Last Harvested: June 22, 1973

Date Evaluated for Disease Reaction: June 22, 1973

Conclusion: Butter Pak and Sunbeam were the two best yellow straight next varieties. Sunbeam and Gold Strike had the greatest resistance to Powdery Mildew. Butter Pak and NCX 7001 were the most susceptible to Powdery Mildew. Sunbeam, Butter Pak, Slendergold and 16CX2 were the most resistant to Downy Mildew. Hyrific and NCX 7001 were the most susceptible to this problem. Most of the varieties were resistant to Chenophora fruit rot except for Butter Pak and 16CX2.

All of the Crook neck varieties were susceptible to all these diseases evaluated. Dixie appeared to be the best overall variety; however, it was thin skinned and should be handled with care in picking and grading.

The Zucchini selections were separated into two groups, dark green and mottled. Ambassador and Aristocrat were the two dark green types which were found to be the best. They were characterized by high yields and good disease resistance. Blackjack was one of the highest yielding varieties but its fruit was short and stubby.

Senator, Seneca Zucchini and Zucco were the three better mottled-type zucchini squash. Senator was somewhat higher in yield than the other selections. Most varieties of the Zucchini type were resistant to Powdery Mildew, Downy Mildew and Chenophora Fruit Rot.

The varieties Slendergold, 16CX2, Ambassador, Chefini, Seneca Zucchini, Balls Zucchini, Zucco, XP 1076 and NCX 7101 were infected with a virus which resembled watermelon mosaic. This does not necessarily mean the other varieties are resistant, but could be a result of the distribution of the insect vectors. This area needs further evaluation before any valid conclusions can be made.

Variety	Seed Company	Plant Size[1]	Maturity[2]	Color[3]	Fruit Set[4]	Powdery Mildew[5]	Downy Mildew[6]	Chenophora Fruit Rot[7]
Straight neck								
Butter Pak	Ferry-Morse	M	L	L	3.7	4.3	1.3	3.3
Early Prolific Straightneck	Asgrow	M	VL	LY	2.5	2.0	3.0	1.0
Gold Strike	Ferry-Morse	M	E	Y	3.0	1.5	2.0	1.0
Hyrific	Ferry-Morse	L	M	Y	4.0	3.0	5.0	2.0
Seneca Prolific	Asgrow	M	E	Y	2.0	3.5	2.0	1.0
Slendergold	Niagara	M	ME	Y	3.5	4.5	1.5	1.5
Sunbeam	Dessert	M	L	Y	3.0	1.3	0.3	0.5
NCX 7001	Niagara	L	M	Y	3.8	6.5	5.5	1.0
16CX2	Ferry-Morse	M	E	Y	2.8	3.6	1.3	4.5
Crookneck								
Dixie	Asgrow	M	E	LY	3.0	5.0	1.0	2.5
Early Summer Crookneck	Ball	L	M	Y	3.0	3.0	2.0	0.0

Variety	Seed Company	Plant Size[1]	Maturity[2]	Color[3]	Fruit Set[4]	Powdery Mildew[5]	Downy Mildew[6]	Chenophora Fruit Rot[7]
Early Yellow Summer Crockneck	Asgrow	L	M	Y	3.2	4.3	2.0	0.0
Gold neck (1)	Herbst	S	ME	OO	3.3	---	---	0.5
Gold neck (2)	Peto	S	ME	OO	3.3	---	---	0.0
Yellow Summer Crockneck	Ferry-Morse	S	L	Y	1.0	8.0	6.0	1.0
Zucchini								
Ambassador	Peto	L	L	G	2.7	1.0	0.6	0.0
Aristocrat	Peto	L	M	DG	2.8	0.6	1.0	0.0
Black Zucchini	Asgrow	S	L	DG	1.3	2.0	1.0	0.0
Blackie	Dessert	M	VL	DG	1.5	0.6	0.6	0.0
Blackjack	Peto	L	VL	DG	3.3	1.5	1.0	0.0
Chefini	Peto	L	L	G	2.7	0.6	0.3	0.3
Diamate	Peto	L	M	DG	2.5	0.0	0.0	0.0
Diplomat	Peto	L	M	DG	2.0	0.6	0.6	1.5
Hyzini	Ferry-Morse	L	M	DG	2.0	1.6	2.3	0.0
Senator	Asgrow	L	M	G	3.5	0.5	0.0	0.0
Seneca Zucchini	Asgrow	L	L	G	2.7	0.6	0.0	0.0
Verdue	Dessert	-	-	-	-	1.6	1.3	0.0
Balls Zucchini	Ball	L	M	G	2.7	0.3	0.0	0.0
Zucchini (2)	Burpee	L	L	DG	2.0	0.3	1.6	0.0
Zucco	Ferry-Morse	L	M	DG	2.3	0.3	0.6	0.6
XP1076	Asgrow	L	M	DG	1.5	1.0	0.0	0.0
NCX 7101	Niagara	L	L	DG	2.3	0.6	2.6	0.0

[1]Plant Size: S = 24 inches tall or less
M = 25 to 30 inches tall and spreading
L = Above 30 inches tall and dense spreading growth

[2]Maturity: E = Early (45-50 days to first harvest)
ME = Moderately Early (50-55 days to first harvest)
M = Mid-season (56-65 days to first harvest)
L = Late (65-75 days to first harvest)
VL = Very Late (75+ days to first harvest)

[3]Color: Y = Yellow
LY = Light Yellow
O = Orange-Gold
G = Green
DG = Dark Green

[4]Fruit Set: 1 = No Fruit
5 = Heavy Fruit Set

[5]Powdery Mildew: 0 = No Powdery Mildew
5 = Foliage Injury Throughout Plant
10 = Severe Damage, Plants Nearly Dead

[6]Downy Mildew: 0 = No Downy Mildew
5 = Foliage Injury to Both Upper and Lower Leaves
10 = All Foliage Injured by Lesions

[7]Blossom Blight: 0 = No Fruit Decayed
5 = 50% Decayed
10 = 100% Fruit Loss

SQUASH VARIETY DEMONSTRATION

Grower: Palmer Brothers

Location: Pleasanton,

County Extension Agent: Hollis D. Duke, Atascosa County

Supporting Specialists: Jerral D. Johnson, Extension Plant Pathologist
Sam D. Cotner, Extension Horticulturist
Jerry M. Parsons, Area Extension Vegetable Specialist

Date Planted: September 1, 1975

Date Evaluated: October 22, 1975

Plot Size: 50 feet (one row per bed - 40 inches)

Replication: 2

Conclusions: Yellow Crookneck. Keystone 1758, NK 520, Slendergold and Sundance were the earliest varieties planted and were also the highest in potential yield. These varieties also showed less damage from squash mosaic. Sundance, Slendergold and Keystone 1758 were also resistant to Powdery Mildew. Golden Rebel, although grown in many areas, was found to be low in production and late in maturing. It was resistant to Powdery Mildew, but highly susceptible to the virus problem. The hybrid 16CX11 was an excellent selection both horticulturally and from a pathological standpoint.

Yellow Straight Neck. The selections Golden Girl, Keystone 1759 and NCX 7001 were the higher yielding varieties. Golden Girl and Keystone 1759 were two of the earlier selections. Keystone 1759 was fairly resistant to Powdery Mildew and had a low occurrance of the virus complex. It did receive the highest level of leafminer damage of any variety evaluated. Keystone 1759, Hyrific, Hy 7C and Golden Girl were four of the better selections evaluated in the yellow straight neck group.

Zucchini. Diplomat, Zucchini Elite, Greenzini and Zucco appear to be four of the better zucchini selections evaluated. Diplomat and Zucchini Elite appeared to have some resistance to Powdery Mildew. Diplomat had the lowest level of virus. Zucco was the next lowest in virus occurrance.

Yellow Zucchini. Although both Golden Zucchini and New Gold were damaged by the virus complex, New Gold was slightly lower and had a higher level of Powdery Mildew resistance. It was somewhat later in production, however, and was higher in yield and vine vigor.

Scallop. Patty Pan Green Tint was more resistant to Powdery Mildew, but was damaged by the virus to a greater extent than the other selections. Scallopini had the highest potential yield and was resistant to the virus, but was fairly susceptible to Powdery Mildew. Patty Pan, Patty Pan Green Tint and Scallopini were three of the better varieties in this group.

Hubbard. Table Ace was the best variety evaluated. Green Warted Hubbard was marked by low yield.

Horticultural Characteristics of Squash Varieties

Variety	Seed Company	Potential Yield[1]	Vine Vigor[2]	Bloom[3]	Fruit[4]
Yellow Crookneck					
Sundance	Harris	5	5.25	7.5	+
Slendergold	FMC	4.5	3.5	5.5	+
Golden Rebel	FM	8.5	4.25	2	-
Butter Pak	FM	4.5	4.5	5	-
Golden Swann	Peto	5	4.5	7	-
NK 520	NK	4.5	7	5.5	+
Key 1758	Keystone	5	5	8	+
16CX11	FM	3.5	5.25	7.5	-
Yellow Straight Neck					
Goldbar	Peto	5	3.75	4	-
Hyrific	FM	6	2.25	7	-
Summer Sun	FM	5	4.75	8	+

Variety	Seed Company	Potential Yield[1]	Vine Vigor[2]	Bloom[3]	Fruit[4]
Hy 7C	Harris	5	7.5	8	-
NCX 7001	FMC	4.5	3	2.5	-
Gold Strike	FM	5	5.5	6.5	+
Key 1759	Keystone	4.5	6.75	9	+
Peto 3273	Peto	6	6.5	10	-
NK 522	NK	5	4	4.5	-
Peto 471	Peto	6	5	4	+
Goldzini	Peto				
Golden Girl	Harris	4	4.5	6.5	+
PSX 1771	Peto	7.5	5.25	7	+
Zucchini					
Diplomat	Peto	5.5	3.75	5	-
Zucco	FM	7	4.5	7	+
Greenzini	FM	5	2.5	6.5	+
Ambassador	Peto	7	4.25	4.5	+
President	Peto	7	3.75	5.5	+
Burpee Zucchini	Burpee	6	3.5	3.5	+
Dark Green Zucchini	Harris	5.5	5.5	5.5	-
Zucchini Elite	Harris	5.5	4	6	+
Market King	Keystone	6	3.25	4	-
Chefini	Peto	5.5	3.75	6	-
CIAGN	Harris	7	4.5	3.5	+
NK 513	NK	6	5	6.5	-
PSR 2072	Peto	5	4	7	-
ZAGB	Harris	7.5	4.5	3.5	-
Yellow Zucchini					
Golden Zucchini	Burpee	8	6	6	+
New Gold	Harris	4	2.25	3.5	-

Variety	Seed Company	Potential Yield[1]	Vine Vigor[2]	Bloom[2]	Fruit[4]
Scallop					
Patty Pan	Peto	5	4	2	-
Scallopini	Peto	4	4	3	-
PSR 3572	Peto	4	4	3	-
Patty Pan Green Tint	Peto	6	7	7	-
PSR 173	Peto	4	4.5	6	-
Hubbard					
Green Warted Hubbard	Herbst	9	2.5	7	-
Table Ace	Peto	6	4.5	8	-

[1]Potential Yield: 1 = Highest yield
10 = No fruit set

[2]Vine Vigor: 1 = Large, vigorous plant
10 = Severely dwarf plant

[3]Bloom: 1 = Large number of blossoms on each plant on October 22 (62 days after planting)
10 = No blossoms on each plant on October 22 (52 days after planting)

[4]Fruit: + = Fruit set 25 days after planting
- = No fruit present

Reaction of Squash Varieties to Disease and Insect Infestation

Variety	Powdery Mildew[1]	Percent Damage[2]	Virus Ratings: Severity[3]	Virus Ratings: Pythium[4]	Leaf-Miner[5]
Yellow Crookneck					
Sundance	3	36	4	2	5
Slendergold	3.5	40	3	1	5
Golden Rebel	2.5	75	5	1	3
Butter Pak	3.5	50	3	1	6
Golden Swann	5	50	3	5	7
NK 520	7	20	3	1	5
Key 1758	2	14	3	1.5	7
16CX11	5	40	4	1.5	7
Yellow Straight Neck					
Goldbar	2	51	4	1.5	5
Hyrific	1.5	22	3	2	6
Summer Sun	5.5	13	3	1	6
Hy 7C	3.5	25	1	1	6
NCX 7001	2	40	2	2	5
Gold Strike	5.5	40	4	2.5	8
Key 1759	2.5	15	2	3	9
Peto 3273	4	10	1	3	5
NK 522	2.5	30	2	1	5
Peto 471	3	50	3	3	5
Goldzini	5	20	1	1	6
Golden Girl	5	40	5	1	7
PSX 1771	2	25	3	3.5	7
Zucchini					
Diplomat	2	15	1	1	5
Zucco	3	26	4	1	5
Greenzini	4.5	40	4	1	5
Ambassador	3.5	41	4	1	6
President	3.5	44	5	1	6

Variety	Powdery Mildew[1]	Percent Damage[2]	Virus Ratings: Severity[3]	Virus Ratings: Pythium[4]	Virus Ratings: Leaf-Miner[5]
Burpee Zucchini	4.5	69	5	1	4
Dark Green Zucchini	5.5	50	4	1	5
Zucchini Elite	2.5	45	4	1	4
Market King	4.5	50	3	1	4
Chefini	3.5	40	3	1	6
CIAGB	2	42	4	1	4
NK 513	8	65	4	1	7
PSR 2072	7	90	5	1	3
ZAGB	6.5	80	5	1	4
Yellow Zucchini					
Golden Zucchini	2	100	5	1.5	2
New Gold	1.5	60	3	1	3
Scallop					
Patty Pan	5	11	4	1	3
Scallopini	5	9	3	1	6
PSR 3572	5	10	1	1	4
Patty Pan Green Tint	2	80	5	1	4
PSR 173	2	70	4	1	5
Hubbard					
Green Warted Hubbard	1	13	2	1	3
Table Ace	2	11	3	2	3

[1]Powdery Mildew: 1 = No disease
10 = Maximum

[2]Percent Damage: Percent of plants infected with virus

[3]Severity: 1 = Light damage
5 = Severe damage

[4]Pythium: 1 = No damage
10 = All fruit lost to fruit rot

[5]Leafminer: 1 = No damage
10 = Severe losses, all leaves show damage

TOMATO VARIETY DEMONSTRATION

Grower: Cyril Van Damme

Location: Hondo

County Extension Agent: Glenn Bragg, Medina County

Supporting Specialists: Sam Cotner, Area Extension Vegetable Specialist
Jerral D. Johnson, Extension Plant Pathologist

Date Planted: March 8, 1972

Plot Length: 50 ft.

Replication: 3

Conclusions: The fresh market varieties MH-1, Walters, Monte Grande and Y-320 all appear adapted to production in the Winter Garden area. The pear-shaped Saladette is well adapted as a processing type. None of the varieties were resistant to Early Blight but Homestead 500, Supermarket, Better Boy and Y-338 showed fewer disease symptoms.

Variety	Seed Company	Blossom Drop[1]	Fruit Set[2]	Early Blight Rating[3]
Early Pak 707	Ferry-Morse	1.7	1.0	4.0
Homestead 500	Ferry-Morse	2.0	1.0	3.0
MH-1	Ferry-Morse	1.0	1.7	5.0
Tropic	Ferry-Morse	2.3	1.0	5.3
Supermarket	Ferry-Morse	2.0	1.3	3.0
Walters	Ferry-Morse	1.3	2.0	5.7
Monte Grande	Ferry-Morse	1.0	1.7	7.3
Royal Ace	Ferry-Morse	1.6	1.6	3.3
Better Boy	Ball	2.3	1.3	3.0
Saladette	TAMU (Leeper)	1.0	2.0	6.3

Variety	Seed Company	Blossom Drop[1]	Fruit Set[2]	Early Blight Rating[3]
Y-320	TAMU (Harrison	1.0	1.5	2.6
Y-240	TAMU (Harrison)	1.3	1.3	6.3
Y-338	TAMU (Harrison)	1.3	1.7	2.3
Y-283	TAMU (Harrison)	1.3	1.3	6.7

[1]Blossom Drop: 1 = No blossom drop
3 = All blossoms dropping

[2]Fruit Set: 1 = No fruit set
2 = Large clusters set

[3]Early Blight Rating: 1 = No infection
5 = Severe infection throughout plant
10 = Complete loss of foliage

TOMATO VARIETY DEMONSTRATION

Growers: Henry Verstuyft & Sons

Location: San Antonio

County Extension Agent: Thurman Kennedy, Bexar County

Supporting Specialists: Jerry Parsons, Area Extension Vegetable Specialist
Sam Cotner, Extension Horticulturist
Jerral Johnson, Extension Plant Pathologist

Date Transplanted: March 15 and April 1, 1975

Date Evaluated: Throughout the growing season

Conclusions: Seed of the varieties Spring Giant, Supersonic, Supersonic B, Spring Set, Homestead 24, Terrific, Bonus, Jet Star, Fantastic Hybrid, Park's Whopper, Beefmaster, Vineripe, Asgrow XP271, Asgrow 2011, Early Summer, Mid Summer, Late Summer, Better Boy and Early Girl obtained from different seed companies were grown by Peterson Brothers Nursery. Growers were impressed by the high quality transplants and, since all varieties were grown at the same time by the same nurseryman, the many variables of producing transplants were eliminated. All varieties were planted on two separate planting dates, March 15 and April 1, with transplants of equal size. Three hundred pounds of fertilizer (8-16-8) and a side dress of anhydrous ammonia (82%) at 50 pounds per acre were used. Weed control was accomplished by using the herbicide Prefar.

Cloudy, wet weather at the beginning of the season caused blossom drop and disease infestations. After the cloudy, wet weather came the hot, dry period--a very poor year for commercial tomato production but an excellent year for tomato variety trial evaluations.

1. Differences exist in varietal adaptation to certain regional environments. Specific yield data was not recorded, but varieties soon separated themselves into "acceptable" and "unacceptable" categories. Acceptable yielding varieties included, in order of productivity: Supersonic, Spring Giant, Bonus, Terrific, Spring Set, Mid Summer, Better Boy, Fantastic, Homestead 24 and Supersonic B.

Unacceptable yielding varieties, in order of yield, were: Early Summer, Late Summer, Jet Star, Vineripe, Park's Whopper, Early Girl, Beefmaster, Asgrow XP271 and XP2011.

2. For greater profits over a longer period of time "early tomatoes" such as Spring Giant and Spring Set, with a short production duration yet with abilities to set fruit during periods of cool, cloudy weather, should be planted along with later-maturing varieties. The early varieties provide quantities of fruit for early, high value marketing while the later-maturing varieties add longevity and quality.

3. The cultural practice of caging tomatoes tended to increase yields and marketable fruits of all varieties tested.

4. Healthy transplants were essential for rapid plant growth and early production.

5. None of the large-fruited varieties tested were tolerant of the summer temperatures of South Central Texas. Supersonic showed the greatest resistance to fruit cracking of any variety tested; Better Boy showed most cracks.

6. No significant differences in insect and disease resistance could be observed among varieties. All were subjected to high infestations of septoria leaf spot, stem phylium (gray leaf spot), phytophthora (late blight) and spotted wilt virus. The main insect problem encountered was the tomato hornworm. Sevin insecticide with Maneb-Kocide fungicide was used when needed.

SPRING TOMATO VARIETY DEMONSTRATION

Grower: Henry Verstuyft and Sons

Location: Von Ormy

County Extension Agent: Thurman Kennedy, Bexar County

Supporting Specialists: Jerry Parsons, Area Extension Vegetable Specialist
Sam Cotner, Extension Horticulturist
Jerral Johnson, Extension Plant Pathologist

Date Established: March 15 and April 10 (Transplanted)

Date Evaluated: April 2, May 15 and June 15

Conclusions: Because this trial was a commercial planting, precise quantitative data could not be feasibly obtained; however, grower satisfaction rates the tested varieties as follows (in order of performance):

Early and medium-maturing varieties: Spring Giant, Big Set, Jet Star

Late-maturing varieties: Bonus, Red Pak, Terrific, A10C6F, Supersonic, Wonder Boy

All data collected was from uncaged plants, but growers noted that yields are exactly doubled in caged versus uncaged plants of all varieties.

Variety	Company	Maturity[1]	Fruit Count[2] 60 Days After Transplant	Fruit Count[2] 90 Days After Transplant	Size[3]
Spring Giant	Dessert	Early	17	37	3.25
Supersonic	Harris	Late	10	21	2.75
Terrific	Parks	Late	11	23	2.75
Bonus	Parks	Late	10	25	3.00
Red Pak	Harris	Late	12	30	3.50

Variety	Company	Maturity[1]	Fruit Count[2] 60 Days After Transplant	Fruit Count[2] 90 Days After Transplant	Size[3]
Big Set	Peto	Medium	22	36	3.25
Jet Star	Harris	Medium	9	17	2.50
A10C6F	Harris	Late	12	21	3.00
Wonder Boy	Peto	Late	2	11	2.50

[1]Maturity - evaluated by noting when first bloom opened and first fruit was harvested

[2]Fruit count was calculated by averaging a count of all fruit larger than a marble on three uncaged transplants established March 15

[3]Average of 10 fruit; inches in diameter

FALL TOMATO VARIETY DEMONSTRATION

Grower: Henry Verstuyft and Sons

Location: Von Ormy

County Extension Agent: Thurman Kennedy, Bexar County

Supporting Specialists: Jerry Parsons, Area Extension Vegetable Specialist
Sam Cotner, Extension Horticulturist
Jerral Johnson, Extension Plant Pathologist

Date Established: July 20, 1977

Conclusions: This trial contained and compared all tomato varieties available on local markets for fall plantings plus varieties which had proven to be superior in previous trials. Grower satisfaction and collected data rated the tested varieties as listed:

Early and medium-maturing varieties: Spring Giant, Big Set, Nematex, Porter's Improved and Early Girl

Late-maturing varieties: Bonus, Red Pak, Floramerica, Homestead and Big Boy

Results indicate that Spring Giant and Big Set are the best varieties for fall plantings, especially in an unusually cool, cloudy year. Superior varieties in this test were clearly Spring Giant, Big Set, Bonus, Red Pak, with Floramerica showing great potential.

Growers and buyers were disturbed by the green shoulder characteristic of Spring Giant and Big Set.

WATERMELON VARIETY DEMONSTRATION

Grower: Jack Chiodo

Location: Dilley

County Extension Agent: Eldred A. Jordan, Frio County

Supporting Specialists: Jerral D. Johnson, Extension Plant Pathologist
Jerry M. Parsons, Area Extension Vegetable Specialist
Sam D. Cotner, Extension Horticulturist

Date Planted: February 28, 1975

Date Evaluated: June 25, 1975

Conclusions: Results of this trial indicate Charleston 76 and Charleston Gray are highly adapted to production in the Winter Garden Area. Crimson Sweet produced an excellent quality melon with the highest sugar content. Black Diamond and Jubilee produced the heaviest melons.

Variety	Average Weight	Rind Thickness	%Soluble Solids	Color	Anthracnose Rating[1]	Quality
Peacock	15.8 lb.	1.3 cm	7.3	Dark Green	2	Fair
Charleston Gray 133	22.2 lb.	1.5	7.3	Green	1	Fair
Charleston 76	23.4 lb.	1.8	7.7	Green	1	Good
Royal Charleston	18.6 lb.	1.6	7.8	Green	3	Poor
Sugar Baby	10.8 lb.	1.1	7.5	Dark Green	3	Poor
Jubilee	33.3 lb.	2.0	8.5	Striped	4	Good
Crimson Sweet	23.2 lb.	1.4	9.3	Striped	2	Good
Black Diamond	41.8 lb.	2.0	8.0	Dark Green	2	Good
Charleston Gray	22.3 lb.	1.6	7.7	Green	1	Good

[1]Anthracnose Rating: 1 = No disease
5 = Severe disease, plant death

Variety	Company	Fruit Size[1]	Maturity	Heat Tolerance[2] at Transplanting	Rating of Productivity[3]
Spring Giant	Dessert	1	Early	1	1
Red Pak	Harris	1	Late	3	1
Bonus	Peto	1	Late	5	1
Big Set	Peto	1	Early-medium	1	1
Floramerica	Peto	2	Late	2	2
Early Girl	Ball	3	Early	1	3
Homestead		2	Late	1	3
Nematex		2	Medium	1	4
Big Boy	Ball	1	Late	3	5
Porter's Improved		3	Medium	1	5

[1]Fruit Size: 1 = Large (3 inches or more)
2 = 2.5 inches
3 = 2 inches

[2]Heat Tolerance at Transplant: 1 = 100% survival
5 = 40% killed

[3]Visual evaluations: 1 = Excellent
5 = Poor

WATERMELON VARIETY DEMONSTRATION

Grower: Mario Siller

Location: Derby

County Extension Agent: Eldred Jordon, Frio County

Supporting Specialists: Jerral Johnson, Extension Plant Pathologist
Sam Cotner, Extension Horticulturist
Jerry Parsons, Area Extension Vegetable Specialist

Date Planted: February 24, 1977

Row and Design: 3 beds/200 ft. long

Replication: 1

Fertilizer: 700 lbs. 12-12-4 preplant
250 lbs. 21-0-0 sidedress

Date Evaluated: June 24, 1977

Conclusions: The variety Sunshade appears to have potential as a melon for South Texas; however, it was somewhat lower in production than the Charleston Gray selections. It did exhibit the most resistance to Downy Mildew of the selections evaluated. Super Sweet and Peacock WR60 also showed good resistance to Downy Mildew. Some of the selections of Charleston Gray 133, Charleston Gray, Peacock Imp., Crimson Sweet and All Sweet were found to be seriously damaged by Downy Mildew.

Of the melons evaluated Charleston Gray, Charleston Gray 133 and Jubilee appear to be the three standard varieties that still will continue to perform well in Texas. Sunshade is a new melon that should be planted in small plantings and further evaluations made. If the yield can be increased this could be an excellent melon for South Texas.

Characteristics of 14 Watermelon Selections Grown Near Pearsall, Texas

Variety	Seed Company	Downy Mildew[1] Rating	Potential[2] Yield	Weight/Melon (lbs.)	Soluble Solids
Charleston Gray 133	Ferry-Morse	3.0	F	18.3	9.3
Charleston Gray	Asgrow	4.0	G	19.8	8.8
Charleston Gray 133	Ferry-Morse	4.0	G	19.8	9.8
Charleston Gray 133	Ferry-Morse	3.0	G-E	20.4	9.0
Peacock Imp.	Ferry-Morse	4.5	L	23.8	9.5
Peacock WR60	Ferry-Morse	2.5	L-F	20.5	9.0
Jubilee	Ferry-Morse	3.5	F-G	31.0	8.7
Jubilee	Ferry-Morse	3.0	F-G	29.2	8.3
Crimson Sweet	Ferry-Morse	4.0	G	24.0	8.0
Crimson Sweet	Northrup King	4.0	L	28.9	8.2
All Sweet	Northrup King	4.0	F-G	27.4	9.7
All Sweet	Ferry-Morse	4.0	F-G	27.4	8.8
Super Sweet	Northrup King	2.5	F	30.0	10.2
Sun Shade	Asgrow	2.5	L-F	24.5	10.2

[1]Downy Mildew Rating: 1 = No disease
5 = Severe disease, death of plant

[2]Potential Yield: G-E = Good to Excellent
G = Good
F = Fair
F-G = Fair to Good
L = Low
L-F = Low to Fair

WATERMELON FUNGICIDE DEMONSTRATION

Grower: Mario Siller

Location: Pearsall

County Extension Agent: Eldred Jordon, Frio County

Supporting Specialist: Jerral D. Johnson, Extension Plant Pathologist

Application information: Rate of Water/A - 5 gal.
No. of Applications - 5
Plant Age First Application - plants with 18-20 inch runners
Spray Interval - 5 to 7 days
Sprayer - Ag Cat with conventional boom
Dates Sprayed - May 27, June 3, June 10, June 17, June 24
Ground Applications Made With KinKelder Mist Blower

Plot Size: 80 ft. wide and 3000 ft. (approximately) long

Replication: 1 (with 4 subplots used for disease and yield information)

Date Planted: February 24, 1977

Row Spacing: 12 ft. in middle and 6 ft. between rows

Weather During Spray Period: Hot and dry

Herbicide: Treflan

Irrigation: Yes (overhead)

Date Evaluated: June 24, 1977

Conclusions: The use of Difolatan effectively controlled Downy Mildew. The aerial plots received 5 applications while the ground plots only received 4 applications. This explains the wide difference between ground and aerial methods of applications. It would appear from this demonstration that the number of applications and regularity of applications is more important than the material used. All treatments increased the yield of melons.

Results of Foliage Fungicide Demonstration on Charleston Gray Watermelons

Treatment	Method of Application	Rate/Ac.	Downy Mildew[1]	No. of Fruit/50 ft. Row[2]
Difolatan	Air	2½ pt.	2.8	7
Difolatan	Air	2½-5 pt.[3]	2.0	12
Difolatan	Air	5 pt.	1.8	6
Difolatan	Ground	2½ pt.	3.5	12
Bravo	Ground	1½ pt.	4.0	10
Manzate	Ground	2 lb.	4.0	11
Control	------	Average		
		Average	4.4	

[1]Downy Mildew: 1 = No disease
2 = Isolated spots around crown of plant
3 = Leaves severely damaged 12-18 inches out from crown of plant
4 = Crown destroyed and runner showing severe leaf loss
5 = Dead plants

[2]Yield: Is based on actual marketable fruit in 50 ft. of row

[3]2½-5 pt.: 2½ pt. first 3 application and 5 pt. last 2 applications

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