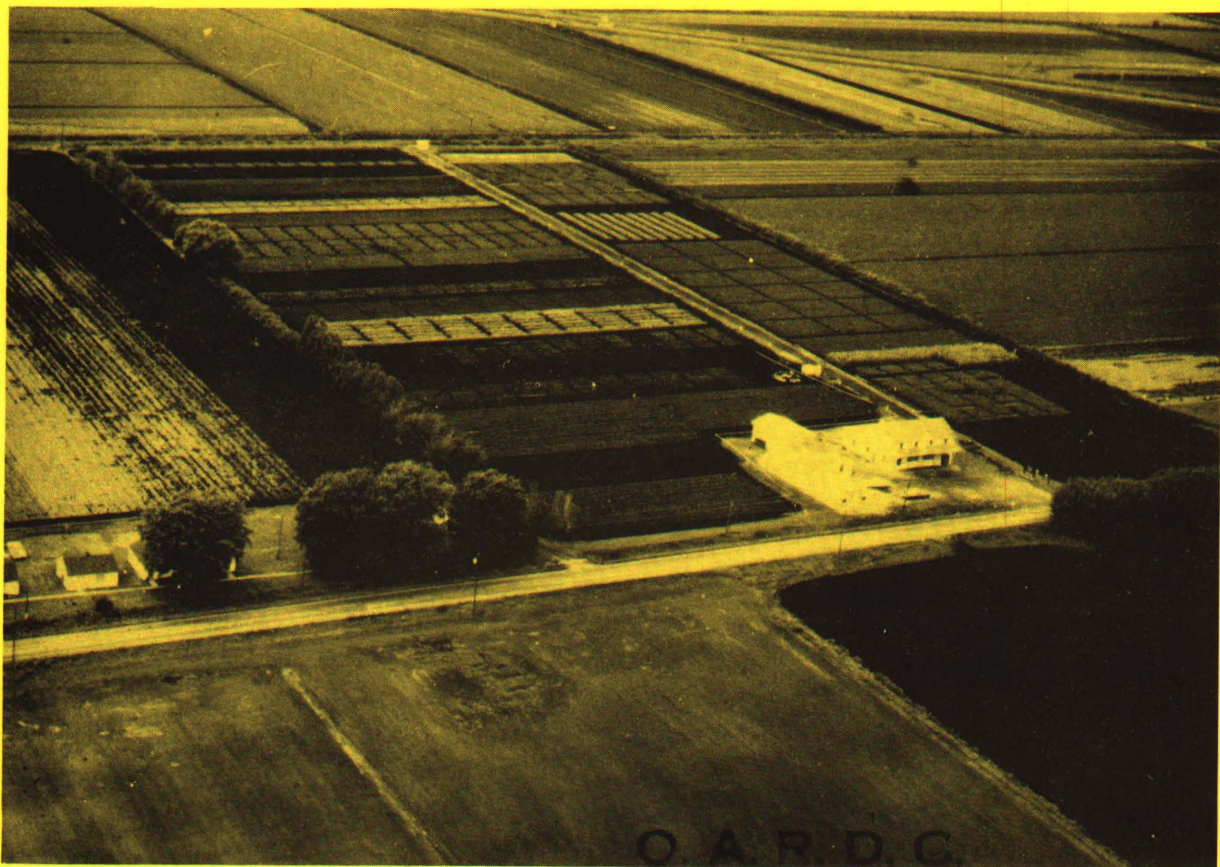


**Compilation of Selected Vegetable Crop Reports
Dealing with Research and Demonstration Plots
Located at the Muck Crops Branch, 1983**

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This report was prepared for distribution at the Celeryville Muck Crops School, January 20-21, 1983.

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RAINFALL RECORD

Recorder: O.A.R.D.C. MUCK CROPS BRANCH
 Location: Willard, Ohio

Date	April	May	June	July	Aug.	Sept.
1			.34			
2	.50		.20			
3						.15
4					.40	
5				1.70	.67	
6	4" snow .10					
7			.10			
8				.40		
9	5" snow .10					
10		.63	.30		.74	
11						
12						
13						
14						
15						
16			.92			
17			1.25			
18						
19	.56					
20	.12			.27		
21	.05	.58	.45		.57	
22			.10			
23			.10			1.00
24		.95				.24
25						
26						
27						1.18
28		.70				.25
29			1.50			
30			.08			
31						
Month Total	1.43	2.86	5.34	2.37	2.38	2.82

Spinach Cultivar Trials - 1982

Muck Crops Branch, Celeryville, Ohio
James M. Pisarczyk¹ and Richard L. Hassell²

Sixteen cultivars or promising breeding lines of spinach were compared in replicated trials at the Muck Crops Branch in 1982 season. Cultural information and tabular data summary are included in this report.

Cultural Information

Eight hundred pounds of a 6-24-12 fertilizer were applied and disced in prior to planting. Seed was sown on April 21 for the spring planting, July 1 for summer planting, and early September for the fall planting, at a rate of 16 pounds of seed per acre. Plot size was three rows 18 feet long and spaced 15 inches apart, and each cultivar was replicated four times. No insecticide or fungicide was used in this plot. CIPC was the herbicide used.

Ten feet of the middle row of each plot was harvested on May 27.

Seed Sources

We would like to acknowledge that each seed company donated the seed for this trial:

- Herbst Seed Co. - America, Dixie Market
- Harris Seed Co. - Savoy Hybrid 612, Dark Green Bloomsdale,
Winter Bloomsdale, Savoy Hybrid 621, Melody,
Vienna
- (AGRI) Keystone Seed Co. - Avon, Jade, Skookum
- Asgrow Seed Co. - Virginia Savoy, Packer, Marathon, Grandstand,
Early Hybrid 7, Kent.

Results

Spring - Table 1 lists yields, savoy, color, and bolting characteristics of the sixteen cultivars. Early Hybrid 7 and Packer were the highest yielding cultivars. Kent, Savoy Hybrid 621, Winter Bloomsdale, Dark Green Bloomsdale, Dixie Market, Virginia Savoy, and America all had well-savoyed leaves. Melody, Winter Bloomsdale, Skookum, and America stood longest without bolting.

Summer - All cultivars went to seed very quickly except Melody and Jade which produced an acceptable crop. Jade's leaves are rather flat but Melody's leaves were semi-savoyed.

Fall - Down mildew infected most of the cultivars in the fall planting. Cultivars were rated on the amount of disease on October 12 and ratings are listed in Table 2.

-
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 2. Manager, Muck Crops Branch, Ohio Agricultural Research and Development Center, Willard, OH 44890 and Assistant Professor of Horticulture, The Ohio State University.

TABLE 1. Spinach cultivar trials - Spring 1982

Cultivar	Lbs/10' of row	Savoy	Color	% Seeders - June 10
Early Hybrid 7	7.8	3.5	3.5	100
Packer	7.7	3.5	3.5	100
Kent	7.0	1.5	3.0	100
Grandstand	7.0	4.5	3.5	100
Melody	6.9	3.2	3.0	0
Marathon	6.7	3.5	3.0	70
Savoy Hybrid 612	6.6	2.0	3.0	100
Vienna	6.5	2.0	3.0	40
Savoyd Hybrid 621	6.2	1.5	3.0	100
Winter Bloomsdale	6.1	1.2	1.8	0
Dark Green Bloomsdale	6.1	1.0	2.2	10
Avon	6.0	3.5	3.5	10
Skookum	5.6	2.5	3.2	0
Dixie Market	5.5	1.5	3.0	90
Virginia Savoy	5.5	1.0	2.5	80
America	5.0	1.0	1.2	0
LSD 5%	1.4	1.3	1.1	18.7

Savoy: 1 = heavily savoyed; 5 = flat
 Color: 1 = dark green; 5 = light green

TABLE 2. Spinach cultivar trials - Fall, 1982

Cultivar	Disease rating ¹
Grandstand	2.3
Melody	2.5
Early Hybrid 7	2.5
Marathon	2.9
Packer	3.1
Kent	3.2
Vienna	3.8
Savoy Hybrid 621	3.9
Winter Bloomsdale	4.1
Dark Green Bloomsdale	4.3
Dixie Market	4.9
America	4.9

1. Downey Mildew: 1 = none; 3 = 50% dead plants; 5 = 100% dead plants.

CELERY CULTIVAR TRIALS -1982

Muck Crops Branch, Celeryville, Ohio
James M. Pisarczyk¹ and Richard L. Hassell²

Sixteen cultivars or promising breeding lines of celery were compared in replicated trials at the Muck Crops Branch in the 1982 season. Cultural information and tabular data summary are included in the following:

Cultural Information

Seed was sown in flats in the greenhouse in early April, seedlings were transplanted into 080A Speedling flats, and the celery was transplanted into the field on June 11, 1982.

Eight hundred pounds of a 6-24-12 fertilizer were applied and disced in prior to planting. Side-dressing of ammonium nitrate (100 lb/A) was made twice during the second and fourth week of planting.

Randomized replicated plots consisted of paired rows spaced 34 inches, with 40 inches between the paired rows for equipment clearance. Plants were spaced 6.5 inches in the row, with 110 plants per 30 foot double-row plot and replicated five times for each cultivar.

Standard insecticide and fungicide sprays were applied regularly throughout the season.

Celery was harvested on September 10, 1982. Data on total yield, stalk size, trim loss, length and number of petioles are listed in Table 1.

Seed Sources

We would like to acknowledge that each seed company donated the seed for these celery cultivar studies.

Harris Seed Co. - Clean Cut, Tall Green Light
(AGRI) Keystone Seed Co. - Grande, Earlibelle, June Bell
Ferry-Morse Seed Co. - Tall Utah 52-70 R Improved, Tall Utah 52-75,
Tendercrisp, Florida 683, Surepak, Summit,
FM 1213, 15C-41
Abbott & Cobb, Inc. - ACX 80281, Strain 2.13
Asgrow Seed Co. - Florigreen

Results

Florida 683, FM 1213, Tall Utah 52-70 R Improved, and Tall Green Light were the four highest yielding cultivars. Other cultivars also had excellent yields. The cultivar with the longest petiole first node length were FM 1213, Tall Green Light, Florigreen, and Clean Cut.

-
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TABLE 1 - CELERY CULTIVARS - 1982

Rank & Variety	Average Yield/Plot-Marketable				Petiole	Petiole	Petiole
	trimmed weight lb.	untrimmed weight lb.	trim loss %	Avg. stalk lb.	count above butt no.	4" length 1st node in.	overall length in.
1. Florida 683	204	296	31	2.1	8.5	8.8	22.5
2. FM 1213	202	318	36	2.1	7.9	10.6	24.
3. Tall Utah 52-70 RImp.	190	321	41	2.2	8.1	9.5	24
4. Tall Green Light	187	323	42	1.9	9.6	10.4	23
5. Junebell	185	289	36	2.0	8.6	8.9	21
6. Clean Cut	184	303	39	2.1	8.5	10.2	22
7. Tendercrisp	184	289	36	2.2	8.9	9.9	21
8. Earlibell	178	316	44	1.9	8.3	8.8	22
9. Strain 2.13	174	307	43	2.1	9.1	9.7	22
10. Grande	162	280	42	1.8	6.4	8.8	23
11. 15C-41	153	257	40	1.4	9.0	7.3	21.5
12. Summit	149	260	43	2.1	8.0	9.0	22
13. ACX 80281	149	282	47	1.7	10.7	8.6	22
14. Surepak	146	294	50	1.7	8.6	9.7	21
15. Tall Utah 52-75	140	245	43	1.6	7.7	8.6	19
16. Florigreen	140	273	49	1.7	7.4	10.3	21.5
LSD 5%	27.0	30.9	NS	.45	NS	1.6	1.4

POTATO CULTIVAR TRIALS - 1982

Muck Crops Branch, Celeryville, Ohio
James M. Pisarczyk¹

Introduction

Ten entries were evaluated at the OARDC Muck Crops Branch at Celeryville in 1982. These included Katahdin as a mid-season standard.

Procedure

Plots were planted on May 13. The spacing in the plots was a double row 32 inches apart, skip 40 inches to the next double row, and seedpieces were spaced 11 inches apart in the row. Plots were a double row 25 feet long. Fertilizer was broadcast before planting at a rate of 850 pounds per acre of 6-24-12. Temik was the systemic insecticide used at planting.

Plots were harvested on September 22. The tubers were graded for B's and culls. Five tubers from each replicate were cut to evaluate hollow heart and internal necrosis.

Results

NY 59, Belchip, Neb. A129.69-1, and W 718 produced the highest yields in that order. NY 59 did not show any internal necrosis in the tubers. 1982 was the first year it was in the trial on muck. Belchip had good shape and few culls on the muck. Neb. A129.69-1 has generally had low yields in this trial. W 718 had led in yield for 6 years in this trial and had an excellent yield this year. Denali has generally produced low yields on muck soils. The cultivars with the most hollow heart were Russette, 56%; W 718, 52%; Jemseg, 32%; and Neb. A129.69-1, 30%.

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TABLE . Yield and grade characteristics of entries in Celeryville Muck Trials.

Entry	Total	U.S. No. 1	U.S. No.1	B-Size	Cull	H.H.	Nec.
NY 59	563	530	94.0	3.6	2.3	4.0	0
Belchip	505	475	94.1	2.3	3.6	0	0
Neb. A129.69-1	493	468	94.8	3.2	2.0	30.0	0
W 718	469	444	94.7	2.8	2.5	52.0	0
AK 114	500	442	88.4	8.8	2.8	0	0
Jemseg	450	423	94.0	1.9	4.1	32.0	0
Rosa	466	410	87.9	9.2	2.9	16.0	0
Katahdin	412	388	94.2	4.3	1.4	20.0	0
Denali	437	388	88.9	6.3	4.8	20.0	0
Russette	334	251	75.2	7.6	17.2	56.0	0

CELERY TRANSPLANT STUDY - 1982

Muck Crops Branch, Celeryville, Ohio
Richard L. Hassell¹

Six different types and size trays were compared to the standard bare-root celery transplant. Three varieties were used to provide a broader inference.

Cultural Information

Eight hundred sixty pounds of a 6-24-24 fertilizer was applied and disced in prior to planting. Seeds were presprouted in a pan and later transplanted into the various treatments.

All trays were fed liquid fertilizer once weekly with Peter's 15-16-17 fertilizer. Soil media was Redi-Earth provided by W. R. Grace Company.

All transplanting into the field was accomplished by using the standard bare-root planter. Standard cultural practices were applied to the plots as needed. Side dressing of ammonium nitrate (100 lb/acre) was made twice during the growing season, four and six weeks after field transplanting.

Treatment evaluations were conducted in the field as celery was cut.

Results

Transplanting into the flats versus transplanting into muck beds is much slower. However, as time went on the difference was greatly reduced.

Growing time was cut by as much as two weeks, depending on fertilizer practices, with the soilless mix over the muck beds.

Direct seeding in the various trays were tried and found to produce eighty percent germination. Transplanting into the field could be done with the standard bare-root planter except for the jiffy pots, which were set by hand. However, a slight adjustment is needed to support the root system on the various trays, so speed can be maintained with that of the bare-root.

Harvest time was not reduced using the transplant over bare-root. However, uniformity was greater in all the various tray sizes over the bare-root. This was the reason for the difference in the weight per stalk as found in the table.

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The difference between the various trays were not felt to be significant. Because of size of the tray and the number of cells per tray the Todd Planter flat 080A would be the most economical.

The soilless mix used should contain a wetting agent along with vermiculite for easy handling in the trays. Sand should not be a part of the mix. It makes the plants hard to remove from the tray.

<u>TRAY SIZES</u>	
Todd Flat 080A:	1-3/16" X 1-3/16" X 1-3/4"
Todd Flat 125:	1-1/4" X 1-1/4" X 1-3/4"
Todd Flat 100A:	1" X 1" X 3"
Plastermore:	1" X 1" X 3"
Jiffy Grays:	1" X 1" X 3"
Jiffy Pots:	1-1/4" X 1-1/4" X 2"

CELERY TRANSPLANT STUDY 1982

Treatment ↓	UTAH 52-70H			UTAH 52-70R			FLORIDA 683		
	untrimmed wt.(lb.)/stalk			untrimmed wt.(lb.)/stalk			untrimmed wt.(lb.)/stalk		
	July 8	Aug. 1	Aug. 10	July 8	Aug. 1	Aug. 10	July 8	Aug. 1	Aug. 10
Bare Root	2.01	---	2.13	2.31	2.43	2.39	1.58	2.41	2.05
080A	2.41	---	2.60	2.61	2.63	2.50	2.44	2.87	3.30
125	2.11	---	2.83	2.53	3.22	3.45	2.28	3.09	3.39
100A	2.26	---	3.58	2.71	3.37	3.53	2.11	3.10	3.27
Plastermore	2.16	---	---	2.49	3.39	---	1.91	3.40	---
Jiffy Gray	2.25	---	3.17	2.94	3.34	3.21	1.86	3.16	2.65
Jiffy Pots	2.36	---	2.23	2.93	3.53	2.66	2.01	3.03	2.37

-10-

Harvest dates represent: July 8 = Paper Celery

August 1 = Transplanted the day Paper ended

August 10 = Transplanted two weeks after Paper ended

PARSLEY 1982 VARIETY TRIALS

Muck Crops Branch, Celeryville, Ohio
Richard L. Hassell¹

Twenty-one cultivars of parsley varieties were compared in a replicated trial at the Muck Crops Branch in the 1982 season. Cultural information and tabular data summary are included in this report.

Cultural Information

Eight hundred sixty pounds of a 6-24-24 fertilizer was applied and disced in prior to planting. Seed was premeasured at the rate of sixteen pounds per acre and sown with a cone planter on June 3. Plots size consisted of three rows, eighteen feet long, spaced fifteen inches apart. Each cultivar was replicated four times. Standard cultural practices were applied to this plot as needed. Variety evaluations were conducted August 8, with the help of Holthouse Farms. Plots (10 feet of middle row) were harvested August 9.

Results

Moss Curl, Banquet and Deep Green were the best overall performing varieties. It was also important to note that varieties with the same name, but various sources performed differently. There was only one cut made on these varieties, therefore, their future grow back and harvests are not known.

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PARSLEY 1982 VARIETY TRIAL

Variety Name	Variety Source	Leaf Color 5=dark 1=light	Variety Uniformity 5=uniform 1=uneven	Plant Size 5=large 1=small	Leaf Curl 5=heavy 1=light	Crates/acre (40 lb./crate)	Comments
Moss Curled	Northrup King Co.	4.00	3.38	3.38	4.00	542	
Banquet	Harris	4.13	4.38	4.13	4.00	511	
Moss Curled	Keystone	3.00	4.00	3.88	3.75	550	Too Light
Deep Green	Harris	4.00	3.63	3.63	4.00	479	
Champion Moss Curled	Stokes	3.17	3.83	3.67	4.00	390	No Color
Deep Green	Northrup King Co.	3.75	3.63	3.63	3.88	320	
Extra Triple Curl	Ferry Morse	3.50	2.88	3.13	4.25	340	
Deep Green	Keystone	4.00	3.75	3.63	3.88	314	
Forest Green	Harris	3.88	4.25	4.25	3.75	307	
French Perfection	Harris	4.13	3.50	3.38	3.88	270	
Unicurl	Stokes	3.38	2.88	2.63	4.50	260	

Date Seeded: June 3, 1982
 Seed Rate: 16 lb. Acre
 Row Spacing: 15 inches between Rows
 Plot Length: 18 Feet/3 rows per plot
 No. of Replication: 4
 Date Harvested: August 9

PARSLEY 1982 VARIETY TRIAL

Variety Name	Variety Source	Leaf Color 5=dark 1=light	Variety Uniformity 5=uniform 1=uneven	Plant Size 5=large 1=small	Leaf Curl 5=heavy 1=light	Crates/acre (40 lb./crate)	Comments
Darki	Stokes	3.13	3.00	3.00	5.00	260	
Paramount	Ferry Morse	3.75	3.25	3.50	3.75	256	
Evergreen	Ferry Morse	2.88	2.75	2.63	3.50	190	
Perfection	Harris	3.63	3.38	3.25	3.88	181	
Improved Market Gardner	A & C	4.50	3.88	3.13	3.88	171	
Bravour	Stokes	3.25	2.50	2.38	4.75	171	Too Short
Curlina	Stokes	2.50	2.38	2.63	5.00	136	Too Short
Decorator	A & C	3.63	2.75	2.63	5.00	118	
Decora	Northrup King Co.	3.38	2.63	2.38	5.00	117	Too Short
Decora	Keystone	3.63	2.38	2.25	5.00	106	

Date Seeded: June 3, 1982
 Seed Rate: 16 lb. Acre
 Row Spacing: 15 inches between Rows
 Plot Length: 18 Feet/3 rows per plot
 No. of Replication: 4
 Date Harvested: August 9

ONION 1982 VARIETY TRIALS

Muck Crops Branch, Celeryville, Ohio
Richard L. Hassell¹

Ninety-nine cultivars or promising breeding lines of onions were compared in replicated trials at the Muck Crops Branch in the 1982 growing season. Cultural information and tabular data summary are included in this report.

Cultural Information

Eight hundred sixty pounds of a 6-24-24 fertilizer was applied and disced in prior to planting. Seed was premeasured at the rate of three and one-half pounds per acre and sown with a cone planter on April 26 and 27. Plot size consisted of three rows, eighteen feet long, spaced fifteen inches apart. Each cultivar was replicated three times. Standard cultural practices were applied to this plot as needed. Variety evaluations were conducted throughout the growing season. Onions were harvested mid-September, graded and then placed in storage.

Results

Onion evaluations were conducted with the help of Wiers Farm, Inc., Buurma Farms, and Stambaugh Company. This was done in order to achieve a more uniform and useful evaluation. Yields were as high as 1,540 bags per acre (CKR N11) and as low as 260 bags per acre. The desired skin color was a medium color. The top 32 storage onions and the top 7 spanish onions are listed in order.

Two varieties that continue to rank in the top ten are Tecumseh and Russett. Spartan Banner 80 and Sweet Sandwich show a lot of promise due to the uniformity of both shape and size.

The spanish onions showed the greatest size and greatest percent of jumbos with Cima leading with the highest overall percentage. However, it was seeded at a lesser rate, requested by seed source. If jumbo onions are desired, seeding at the rate of two to two and one-half pounds per acre are recommended. It was also noted that a great percentage of the spanish varieties showed a high number of doubles.

For early harvests, Pronto S and Progress are the first to fall over and make size with Pronto S showing the highest yields.

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STORAGE ONIONS 1982 VARIETY TRIALS

Variety Source	Variety Source	Overall Appear. 1=poor 1=good	External Characteristics					Firm- ness 1=soft 5=firm	Marketable per acre 50 lbs. per bag	"B" (Small) per acre 50 lbs. per bag	Jumbo's (Greater than 3") % of Mar- ketables
			Skin Color 1=lt. 5=dk.	Scale Reten- tion 1=poor 5=good	Bulb Size 1=sm. 5=lg.	Uniformity Shape Size 1=poor 5=good					
XPH 3223	Asgrow	5.00	3.00	4.33	4.33	4.67	4.67	4.50	1,192	14	0
Russett 214A	Stokes	4.67	3.17	3.67	4.00	4.33	4.00	4.33	1,136	49	12
XPH 738	Asgrow	4.50	3.67	4.00	2.67	4.33	4.00	4.67	941	118	1
ABCO	A & C	4.50	3.33	4.33	3.17	3.67	3.33	4.67	919	88	0
210A Tecumseh	Stokes	4.33	3.00	3.67	3.67	3.67	3.67	4.33	1,236	91	4
Sweet Sandwich (3 mos.)	USDA	4.33	3.67	4.00	3.33	4.00	4.33	4.33	1,029	40	0
EXP MCX 1008	Moran	4.33	3.33	4.00	3.67	4.33	3.67	4.67	1,071	16	3
Northern Oak 213A	Stokes	4.25	2.92	4.00	3.83	3.33	4.00	3.83	1,087	41	2
Brown Beauty "80"	Crookham Co.	4.17	2.67	3.33	3.00	3.33	4.00	4.00	1,001	125	2
XPH 3207	Asgrow	4.00	2.92	4.00	3.33	3.33	3.33	3.67	1,168	137	0
XPH 3230	Asgrow	4.00	3.33	4.57	3.67	4.00	4.33	4.33	1,199	58	0
H81 ACX 58-6	Nickerson DPB	4.00	3.33	2.67	3.00	3.67	3.33	4.17	855	135	0
D 275162	Harris	4.00	3.50	4.33	3.00	4.33	4.00	4.00	945	142	0
D 5537 P	Harris	4.00	2.67	4.33	3.67	4.00	4.17	4.00	1,080	286	0

Date Seeded: April 26 and 27, 1982
 Seed Rate: 3.5 lb. acre
 Row Spacing: 15 inches between rows
 Plot Length: 18 feet/3 rows per plot
 No. of Replication: 3

STORAGE ONIONS 1982 VARIETY TRIALS

Variety Source	Variety Source	Overall Appear. 1=poor 5=good	External Characteristics					Firm- ness 1=soft 5=firm	Marketable per acre 50 lbs. per bag	"B" (Small) per acre 50 lbs. per bag	Jumbo's (Greater than 3") % of Mar- ketables
			Skin Color 1=lt. 5=dk.	Scale Reten- tion 1=poor 5=good	Bulb Size 1=sm. 5=lg.	Uniformity Shape Size 1=poor 5=good					
DEXP 81-479-4	Dessert	4.00	3.33	4.33	4.00	4.33	4.33	4.67	1,141	158	5
121-81	U. of Wisconsin	3.83	3.75	4.50	4.00	3.67	3.67	4.42	969	46	0
149-81	U. of Wisconsin	3.83	3.17	4.33	2.33	3.67	4.00	5.00	813	149	0
CKR N11	Crookham Co.	3.83	2.58	3.50	4.17	2.67	2.67	3.67	1,540	101	2
614 Nutmeg	Harris	3.83	3.33	3.67	2.83	3.67	3.00	4.67	785	93	0
XPH 23	Asgrow	3.67	3.33	3.33	3.00	4.00	3.67	3.67	706	77	0
Spartan Banner 1	Asgrow	3.67	4.17	3.00	3.33	3.33	3.33	4.33	854	153	1
XPH 538	Asgrow	3.67	3.67	3.50	3.17	4.00	4.00	4.17	897	65	0
H81 ACX 755	Nickerson DPB	3.67	4.00	4.00	3.00	4.33	3.33	4.33	1,141	125	0
115-82	U. of Wisconsin	3.67	3.67	3.67	2.67	4.00	4.00	4.33	950	202	0
141-81	U. of Wisconsin	3.67	3.50	4.00	3.00	3.00	3.33	4.17	913	158	0
D 5542	Harris	3.67	3.17	3.67	3.17	3.67	3.67	4.50	1,182	95	12
D 5562 - super sleeper	Harris	3.67	3.67	4.33	2.00	4.00	4.33	4.67	976	192	0
613 Mustang	Harris	3.67	4.33	4.33	3.00	3.33	3.00	4.33	945	146	0

Date Seeded: April 26 and 27, 1982
 Seed Rate: 3.5 lb. acre
 Row Spacing: 15 inches between rows
 Plot Length: 18 feet/3 rows per plot
 No. of Replication: 3

STORAGE ONIONS 1982 VARIETY TRIALS

Variety Source	Variety Source	Overall Appear. 1=poor 1=good	External Characteristics					Firm- ness 1=soft 5=firm	Marketable per acre 50 lbs. per bag	"B" (Small) per acre 50 lbs. per bag	Jumbo's (Greater than 3") % of Mar- ketables
			Skin Color 1=lt. 5=dk.	Scale Reten- tion 1=poor 5=good	Bulb Size 1=sm. 5=lg.	Uniformity Shape Size 1=poor 5=good					
Spartan Banner 80	USDA	3.67	3.00	3.67	3.00	4.33	4.00	4.33	1,278	81	3
SIMCOE	Dessert	3.67	3.67	4.00	3.00	4.00	3.00	4.33	973	107	1
DEXP 79-293-3	Dessert	3.67	3.00	4.00	3.00	3.33	3.00	4.67	894	107	0
608 Harvestmore	Harris	3.67	4.00	3.67	3.00	3.17	3.33	4.33	1,376	81	0
Tavrus	Asgrow	3.00	3.25	3.33	2.67	3.67	3.67	4.00	873	156	0
X 3231	Asgrow	3.17	3.67	3.00	3.67	3.17	3.33	3.67	1,248	91	2
Topas	Asgrow	2.50	2.33	2.00	2.00	3.00	3.33	2.33	897	176	0
XPH 194N	Asgrow	3.33	3.67	4.00	3.00	3.67	3.33	4.00	1,007	70	1
XPH 210	Asgrow	3.33	3.67	3.67	2.50	3.67	3.33	4.67	866	160	0
Rocket	Asgrow	3.17	3.33	3.00	3.00	3.17	3.33	4.33	781	125	2
XPH 688	Asgrow	3.50	4.33	4.00	3.00	3.33	4.00	4.67	955	23	0
XPH 737	Asgrow	3.17	4.00	4.00	3.00	4.33	3.67	4.33	1,122	98	0
Fawn Preview	Ferry Morse	2.67	4.08	3.50	3.50	3.33	3.67	3.33	969	149	0
Mucker	Stokes	3.33	3.33	4.33	3.00	3.00	3.00	4.00	839	98	3

Date Seeded: April 26 and 27, 1982
 Seed Rate: 3.5 lb. acre
 Row Spacing: 15 inches between rows
 Plot Length: 18 feet/3 rows per plot
 No. of Replication: 3

STORAGE ONIONS 1982 VARIETY TRIALS

Variety Source	Variety Source	Overall Appear. 1=poor 1=good	External Characteristics					Firmness 1=soft 5=firm	Marketable per acre 50 lbs. per bag	"B" (Small) per acre 50 lbs. per bag	Jumbo's (Greater than 3") % of Marketables
			Skin Color 1=lt. 5=dk.	Scale Retention 1=poor 5=good	Bulb Size 1=sm. 5=lg.	Uniformity Shape Size 1=poor 5=good					
Gringo 222B	Stokes	2.33	3.00	3.00	3.00	2.33	2.67	2.67	806	102	20
Downing Yellow Globe	Northrup King Co	2.67	5.00	4.67	3.67	3.33	2.67	3.67	757	70	0
FPOCH 38433 92000	Northrup King Co	3.00	3.33	2.50	3.00	3.67	4.00	4.33	685	51	0
AV 3365	Keystone	1.67	2.33	2.33	2.33	2.67	2.33	3.33	260	0	0
Gladiator	Keystone	3.00	3.00	3.42	3.33	3.67	3.00	4.00	1,173	74	2
H81 ACX 576	Nickerson DPB	3.50	3.50	3.83	3.00	3.17	3.00	4.67	1,008	84	3
H81 ACX 454	Nickerson DPB	2.83	3.33	3.00	2.83	3.00	4.00	4.00	945	149	0
H81 ACX 555	Nickerson DPB	3.17	3.00	3.00	3.00	3.67	3.67	4.67	971	114	5
134-81	U. of Wisconsin	3.33	3.67	3.33	2.83	3.33	3.33	3.67	934	118	0
117-81	U. of Wisconsin	2.50	4.50	4.00	2.00	4.50	4.00	4.50	790	74	0
123-81	U. of Wisconsin	2.67	3.67	3.67	2.83	3.50	3.67	3.67	882	202	0
135-81	U. of Wisconsin	3.33	3.83	4.33	3.00	3.00	3.50	4.33	723	84	0
101-81	U. of Wisconsin	3.17	3.83	3.67	3.00	3.67	3.67	4.33	1,071	91	0
119-81	U. of Wisconsin	2.67	4.17	4.00	3.33	3.33	3.33	4.00	950	104	0

Date Seeded: April 26 and 27, 1982
 Seed Rate: 3.5 lb. acre
 Row Spacing: 15 inches between rows
 Plot Length: 18 feet/3 rows per plot
 No. of Replication: 3

STORAGE ONIONS 1982 VARIETY TRIALS

Variety Source	Variety Source	Overall Appear. 1=poor 5=good	External Characteristics					Firm- ness 1=soft 5=firm	Marketable per acre 50 lbs. per bag	"B" (Small) per acre 50 lbs. per bag	Jumbo's (Greater than 3") % of Mar- ketables
			Skin Color 1=lt. 5=dk.	Scale Reten- tion 1=poor 5=good	Bulb Size 1=sm. 5=lg.	Uniformity Shape Size 1=poor 5=good					
Autumn Pride	Crookham Co.	3.00	2.00	2.67	2.67	2.67	3.00	3.33	1,245	79	1
Golden Treasure	Crookham Co.	3.33	4.00	4.00	3.00	3.33	3.00	4.33	1,194	104	5
CKR N65	Crookham Co.	3.00	3.00	2.33	4.00	3.33	3.33	2.00	1,399	84	6
CRK W943	Crookham Co.	2.58	3.00	3.33	3.33	2.67	2.67	3.33	1,329	60	3
CRK H405	Crookham Co.	2.00	2.00	2.00	3.00	3.00	3.00	3.17	1,303	185	0
Apollo	A & C	2.33	2.50	1.67	3.33	2.67	2.67	2.33	1,071	49	5
Better Banner	A & C	3.17	3.67	4.00	3.83	4.00	4.33	4.33	637	97	0
A & C #192	A & C	2.67	3.17	3.67	4.00	3.33	3.67	3.67	945	35	8
A & C #195	A & C	1.67	5.00	2.67	4.33	2.67	4.33	2.00	713	93	13
611 Progress	Harris	2.00	2.33	1.67	1.67	2.33	2.33	2.00	827	153	1
628 Surecrop	Harris	3.50	3.67	3.67	3.33	3.33	3.67	4.33	1,117	123	0
509 Elite	Harris	3.17	3.33	4.33	3.83	3.00	3.83	3.33	1,020	114	3
Copper Cache	Ferry Morse	2.50	4.00	3.83	3.33	2.83	3.33	3.33	1,013	128	0
615 Early Yellow Globe	Harris	2.50	2.17	1.00	3.50	2.67	2.67	2.67	1,239	118	2

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Date Seeded: April 26 and 27, 1982
 Seed Rate: 3.5 lb. acre
 Row Spacing: 15 inches between rows
 Plot Length: 18 feet/3 rows per plot
 No. of Replication: 3

STORAGE ONIONS 1982 VARIETY TRIALS

Variety Source	Variety Source	Overall Appear. 1=poor 1=good	External Characteristics					Firm- ness 1=soft 5=firm	Marketable per acre 50 lbs. per bag	"B" (Small) per acre 50 lbs. per bag	Jumbo's (Greater than 3") % of Mar- ketables
			Skin Color 1=lt. 5=dk.	Scale Reten- tion 1=poor 5=good	Bulb Size 1=sm. 5=lg.	Uniformity Shape Size 1=poor 5=good					
605 Sentinal	Harris	2.67	4.17	3.33	3.83	3.67	3.67	4.33	1,089	52	0
Spartin Sleeper	USDA	3.33	4.17	4.33	3.00	3.33	3.00	4.50	1,129	104	0
Hyb EXP MOX 1012	Moran	3.50	2.50	3.00	3.00	3.50	3.50	4.50	873	146	0
CUPRUM	Dessert	3.33	3.00	4.00	4.00	3.67	3.67	4.33	1,020	72	4
CAPABLE	Dessert	3.17	3.33	3.67	3.50	3.33	4.00	4.00	978	63	1
Bronze Age	Ferry Morse	3.00	3.00	3.00	3.00	3.00	3.00	3.67	1,034	67	5
DYG 156	Dessert	2.50	3.00	3.00	4.33	3.67	4.33	3.67	1,022	65	10
SPARTAN	Dessert	2.33	4.00	3.00	4.33	4.00	3.83	3.33	592	108	12
ORO	Dessert	3.50	3.33	3.33	4.33	4.00	3.33	4.67	1,013	111	7
Keepsweet	A & C	1.83	2.17	2.00	4.00	2.67	3.33	3.33	1,157	53	22

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Date Seeded: April 26 and 27, 1982
 Seed Rate: 3.5 lb. acre
 Row Spacing: 15 inches between rows
 Plot Length: 18 feet/3 rows per plot
 No. of Replication: 3

STORAGE ONIONS 1982
COMMENTS ON FIELD OBSERVATIONS

August 15 - Varieties down
100 percent - 611 Progress
50 percent - 121-81
613 Mustang

August 23 - Varieties down
100 percent - 121-81
FPOCH 38433 92000
Tavrus
614 Nutmeg
ABCO
611 Progress
615 Early Yellow Globe
XPH 194N
Topas
Mucker
DEXP 79-293-3
613 Mustang
75 percent - 115-82
CRK H405
XPH 688
XPH 23
D 5542
Apollo
210A Tecumseh
Spartan Banner 1
50 percent - Better Banner

September 8 - Still standing
134-81
A & C #195
Gringo 222B
Keepsweet
EXP MCX 1008
AV 3365
141-81
628 Surecrop

Poor stand -
SPARTAN
Better Banner
DYG 156
DEXP 81-479-4
A & C #195

Variety defects at grading -
613 Mustang - doubles
AV 3365 - growth and doubles
H81 ACX 555 - rotten and doubles
DVG 156 - doubles
614 Nutmeg - doubles
Gringo 222B - growth and doubles
Bronze Age - doubles
H81 ACX 58-6 - rotten
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SPANISH CROSSED ONIONS 1982 VARIETY TRIALS

Variety Source	Variety Source	Overall Appear. 1=poor 1=good	External Characteristics					Firm- ness 1=soft 5=firm	Marketable per acre 50 lbs. per bag	"B" (Small) per acre 50 lbs. per bag	Jumbo's (Greater than 3") % of Mar- ketables
			Skin Color 1=lt. 5=dk.	Scale Reten- tion 1=poor 5=good	Bulb Size 1=sm. 5=lg.	Uniformity Shape Size 1=poor 5=good					
XPH 419 (Vega)	Asgrow	3.33	3.00	3.00	3.00	2.67	3.33	3.33	1,410	58	24
XPH 537	Asgrow	3.33	3.00	2.67	3.33	3.67	3.67	3.33	1,287	0	22
AV 1241	Keystone	3.33	2.92	2.67	3.83	3.67	3.67	4.33	1,106	18	37
CIMA*	Keystone	3.33	3.50	3.33	4.17	3.67	3.67	3.17	1,361	0	64
DEXP G2	Dessert	3.17	3.50	3.67	2.83	2.67	3.00	3.75	1,090	77	5
DEXP G1	Dessert	3.17	3.83	3.00	3.50	2.67	2.67	3.67	1,396	46	14
XPH 553	Asgrow	3.00	3.00	2.67	3.00	3.67	3.33	3.33	1,152	35	17
Pronto S	Asgrow	2.67	3.00	2.33	2.67	3.00	3.00	3.00	1,113	49	0
RIALTO	Asgrow	2.67	2.67	2.67	2.33	3.00	3.33	3.00	1,043	93	3
XPH 673 (Yula)	Asgrow	1.83	2.50	2.00	2.33	3.00	3.67	2.00	1,431	100	10
XPH 428 (Armada)	Asgrow	2.50	3.00	2.67	3.00	3.33	3.00	3.00	1,515	42	26
XPH 25	Asgrow	2.00	3.50	3.00	2.83	3.00	2.67	3.33	1,117	95	10
Granada	Asgrow	2.67	3.00	3.00	2.00	2.33	3.00	3.00	1,561	65	2
XPH 691	Asgrow	2.67	4.17	4.00	2.33	3.00	3.00	4.00	1,055	97	0

Date Seeded: April 26 and 27, 1982
 Seed Rate: 3.5 lb. acre *2.5 lb. acre
 Row Spacing: 15 inches between rows
 Plot Length: 18 feet/3 rows per plot
 No. of Replication: 3

SPANISH CROSSED ONIONS 1982 VARIETY TRIALS

Variety Source	Variety Source	Overall Appear. 1=poor 1=good	External Characteristics					Firm- ness 1=soft 5=firm	Marketable per acre 50 lbs. per bag	"B" (Small) per acre 50 lbs. per bag	Jumbo's (Greater than 3") % of Mar- ketables
			Skin Color 1=lt. 5=dk.	Scale Reten- tion 1=poor 5=good	Bulb Size 1=sm. 5=lg.	Uniformity Shape Size 1=poor 5=good					
XPH 739	Asgrow	2.67	3.00	2.67	2.50	3.33	2.67	3.33	1,529	53	17
Reliance	Dessert	2.33	3.33	2.67	3.33	2.67	2.67	3.83	1,078	28	29
Ultimate	Dessert	2.67	3.00	2.67	2.83	2.33	2.33	3.00	1,159	30	33
Magnum	Dessert	2.83	3.00	2.50	4.17	2.67	3.33	2.67	1,579	0	43
Golden Cascade	Dessert	2.67	3.00	2.00	3.83	3.00	3.00	3.00	1,375	0	38

Date Seeded: April 26 and 27, 1982
 Seed Rate: 3.5 lb. acre *2.5 lb. acre
 Row Spacing: 15 inches between rows
 Plot Length: 18 feet/3 rows per plot
 No. of Replication: 3

SPANISH CROSSED ONIONS 1982
COMMENTS ON FIELD OBSERVATIONS

August 15 - Varieties down
100 percent - Pronto S
75 percent - XPH 25
50 percent - XPH 691
XPH 673 (Yula)

August 23 - Varieties down
100 percent - XPH 537
XPH 691
Pronto S
XPH 25
75 percent - RIALTO
XPH 673 (Yula)
Granada
50 percent - Golden Cascade
DEXP G1
XPH 739

September 8 - Still standing
XPH 428 (Armada)
XPH 419 (Vega)
Reliance
AV 1241
CIMA

Varieties with "NO" doubles -
DEXP G2
Magnum
Golden Cascade
DEXP G1
XPH 691

BROCCOLI VARIETY TRIALS - 1982

Muck Crops Branch, Celeryville, Ohio
Richard L. Hassell¹

Fifty-five cultivars or promising breeding lines of broccoli were compared on three different planting dates in replicated trials at the Muck Crops Branch in the 1982 growing season. Cultural information and tabular data summaries are included in this report.

Cultural Information

Eight hundred sixty pounds of 6-24-24 fertilizer was applied and disced in prior to planting.

Transplants were grown in Todd Planter Flats 125. Soilless media was Redi Earth provided by W. R. Grace Company. Liquid fertilizer was applied weekly (15-16-17). Greenhouse temperatures were maintained at 75°F. - 65°F. Transplanting was accomplished with a standard bare-root planter.

Direct seeding in the field was done with a cone planter. Seed was premeasured in advance. Summer planting was done on raised beds while the fall sowing was not.

Side dressing of ammonium nitrate (100 lb/acre) was made twice during the growing season on each of the three plantings. The second was made just prior to head formation.

Standard cultural practices were applied to each plot as needed. All harvesting was done by hand and each head was handled separately.

Results

Green Surf was the earliest spring maturing variety with good uniformity in both head size and number harvested. However, the quality was not there in the summer and fall trials. Prominence, Green Hornet, Excalibur, and Premium Crop shows a great deal of promise in all three plantings with tight heads and uniform harvests.

The tables indicate only those varieties that show promise with exceptible yields.

1. Assistant Professor of Horticulture, The Ohio State University, Muck Crops Branch, Willard, OH 44890.

BROCCOLI VARIETY TRIALS - 1982
(Spring Transplant)

Variety Name	Harvest Period	Head Color	Bead Size	Head Dia. (in.)	Stem Length (in.)	Average Weight per Head (lbs.)	Comments
Green Surf	6/17-24	Blue-green	Medium	6	5	1/2 - 3/4	Very tight head, uniform and attractive.
Prominence	6/21-24	Blue-green	Small-Medium	6	7	1/2 - 3/4	Very tight head, uniform and attractive.
Green Comet	6/21	Blue-green	Medium	5	5	1/2	Tight head, very uniform and attractive.
Premium Crop	6/28-7/1	Blue-green	Medium	6	6	1/2 - 3/4	Tight head and attractive.
Green Hornet	6/21-24	Blue-green	Small	5	5½	1/2	Tight head, uniform and attractive.
Green Duke	6/24-7/1	Green	Small	5	6	3/4	Tight head and very attractive.
Emperor	6/24-7/1	Blue-green	Small-Medium	5	5	1/2	Tight head, fairly uniform and attractive.
Excaliber ^v	6/17-21	Blue-green	Medium-Large	6	3 - 4	3/4	Tight, leafy head, fairly uniform.
(XP 1287 (Pc 81466))	6/21-24	Blue-green	Medium	5	5	1/2	Leafy head, fairly uniform.
Apollo	6/21-24	Green	Small	6	6	1/2	Leafy head.
AP 931 (Pc 81460)	6/17-24	Blue-green	Medium	5 - 6	6½	3/4	Loose, leafy head.
Futura	6/17-7/1	Blue-green	Medium	5	7	1/2	Tight, leafy head and not uniform.
VG 3362	6/17-7/5	Blue-green	Medium	6	6	1/2	Loose head and not very attractive.

Greenhouse seeded: March 3, 1982
 Field transplanted: April 23, 1982
 Row spacing: 32 inches between rows
 12 inches between plants
 Plot Length: 20 feet long
 No. of replication: 4

BROCCOLI VARIETY TRIALS - 1982
(Spring Transplant)

Variety Name	Harvest Period	Head Color	Bead Size	Head Dia. (in.)	Stem Length (in.)	Average Weight per Head (lbs.)	Comments
VGV 349	6/17-24	Blue-green	Medium	5	6	1/4	Loose head, not very uniform.
Cursair	6/17-7/1	Blue	Large	5	5	1/2	Loose head, not uniform.
No. 2	6/21-24	Blue-green	Small	5	6	1/2	Very tight head, not uniform.

Greenhouse seeded: March 3, 1982
 Field transplanted: April 23, 1982
 Row spacing: 32 inches between rows
 12 inches between plants
 Plot Length: 20 feet long
 No. of replication: 4

BROCCOLI VARIETY TRIALS - 1982
 (Summer Trials)
 (Direct Seeded)
 Harvested July 12-15

Variety Name	Head Color	Bead Size	Head Dia. (in.)	Stem Length (in.)	Average Weight per Head (lbs.)	Comments
Prominence	Green-blue	Medium	5	6	1/2	Very tight head, very uniform size and attractive.
Green Hornet	Blue-green	Medium	5	6½	1/2	Tight head, very uniform size and attractive.
Green Comet	Blue	Large	6	7	1/2	Tight head, uniform size, saleable.
Excalibur	Blue-green	Large	5	8	1/2	Average tightness, uniform size and attractive.
Emperor	Blue-green	Medium	4	5	1/4	Average tightness, uniform size and saleable.
Green Umbrella	Blue-green	Medium	5	7	1/2	Loose head, very uniform and saleable.
Premium Crop	Blue-green	Medium	6	6	1/2	Average tightness, uniform size and saleable.

Field seeded: May 4, 1982
 Seed rate: 1 lb. per acre
 Row spacing: 13 inches between rows
 8 inches between plants
 Plot length: 18 feet/2 rows per plot
 No. of replication: 3

BROCCOLI VARIETY TRIALS - 1982
(Fall Trials)
(Direct Seeded)

Variety Name	Harvest Period	Head Color	Bead Size	Head Dia. (in.)	Stem Length (in.)	Average Weight per Head (lbs.)	Comments
Corsair	10/5-12	Green	Small	4½	6	1/2	Loose head, not saleable.
Green Surf	10/5-12	Green	Small	6	6	3/4	Loose head, very uniform, saleable.
235 Prominence	10/5-12	Blue	Small	6½	6	1/2	Tight head, very uniform and attractive.
Premium Crop	10/12-15	Blue-green	Medium	6	5½	3/4	Tight head, very uniform and very attractive.
Excalibur	10/5-15	Blue-green	Large	6	5	1/2	Leafy head, fairly uniform and saleable.
Bravo 51D	10/5-8	Blue-green	Medium	5	6	1/2	Uniform and attractive.
Green Hornet (51E)	10/5-15	Blue-green	Medium	7	5	1/2	Tight head and very attractive.
Experimenta YHYB No. 7631	10/8-15	Blue-green	Small-Medium	5	6	1/2	Leafy head and very attractive.
Citation	10/12-15	Blue-green	Small	6	5	1/2	Uniform and attractive.
Hyb. No. 7631	10/12-15	Blue-green	Small	6	6	3/4	Tight head, uniform and saleable.
Dandy Early	10/5-15	Blue-green	Small-Medium	7	5½	1/2	Attractive and fairly uniform.
Surfer Fl RS	10/12-15	Blue-green	Medium	5	5	3/4	Tight head and very attractive.

Field seeded: July 21, 1982
Seed rate: 1 lb. per acre
Row spacing: 13 inches between rows
8 inches between plants
Plot length: 18 feet 13 rows per plot
No. of replication: 3

BROCCOLI VARIETY TRIALS - 1982

	<u>Variety</u>	<u>Source</u>
1.	No. 1	Stokes
2.	No. 2	"
3.	No. 66S	"
4.	Corsair	Harris
5.	Green Surf.	"
6.	235 Prominence.	"
7.	Green Comet	"
8.	Premium Crop.	"
9.	Excaliber	"
10.	(X P1287) (Pc 81466).	Asgrow
11.	Gem VG-) 3492) (5.5).	"
12.	XP1127) Pc 81464)	"
13.	Apollo) VGV244-2 (6.5).	"
14.	XP 931) Pc81460).	"
15.	Orlon (VGY 336.2 (6.5).	"
16.	XP1117) Pc80 344)	"
17.	(Futura) (VGV 2272) (6.5)	"
18.	Cleopatra 51A	Stokes
19.	Bravo 51D	"
20.	Green Hornet (51E).	"
21.	Premium Crop (51C).	"
22.	Em Peror) 40028-8A03)	Northrup King Company
23.	Shogun) 88201) 400ZZ.	"
24.	NK X 501) 40025-8-7902)	"
25.	NK X 502) 40025-90Z00	"
26.	Prominence.	Abbott & Cobb
27.	Green Comet	"
28.	Green Valiant Xize 5.5.	"
29.	Green Duke.	"
30.	VGV3362 (5.5)	Asgrow
31.	VGV 2201.	"
32.	VGV 349 Size 6.5.	"
33.	VGV 4093 Size 5.5	"
34.	Experimenta YHYB No. 7631	Keystone
35.	Emperor 40028-87903	"
36.	Green Valiant	"
37.	Green Duke.	"
38.	Shogun Exp.	"
39.	Excalibur	Moran
40.	Cursair	"
41.	Citation.	"
42.	Bravo	Northrup King Company
43.	Artic	Dessert
44.	Green Umbrella.	"
45.	Prominence.	Takii
46.	Hyb. No. 7631	Keystone
47.	Rex	Ferry Morse
48.	Dandy Early	Keystone
49.	Buncher	Stokes
50.	Parasol	"
51.	Irish Head.	"
52.	Surfer Fl RS.	Liberty
53.	Laser Fl RS	"
54.	Kayak Fl RS	"
55.	Cruiser Fl RS	"

CARROT VARIETY TEST 1982

Muck Crops Branch, Celeryville, Ohio
R. Mack Riedel¹ and Richard C. Henne²

Results

The yields were very good this year from this site, and we were comparable to carrot yields in other parts of the state. The stands were good to high (actual stand counts were not made but several plots checked gave approximately 16 roots/ft. of row). There were no growth cracks or rot so all culls were due to forking. In general, I did not observe the severe gauling we have observed at this site in past years. It may be that the nematode population was low in 1982, and the main effect was induction of forking and some stubby roots.

No variety or line had significantly fewer forks than the standards, Danvers or Camden; Emperor had significantly more forks.

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1. Professor of Plant Pathology, The Ohio State University, Columbus, OH 43210
 2. Director, Pest Management Research, Campbell Institute for Research and Technology, Napoleon, OH 43545

Table 1. Evaluation of Several Carrot Varieties Grown in Nematode-infested Soil at Celeryville, Ohio -- 1982.

Variety	Yield, Tons/Acre		% Forks	No. of Bolters per 20' plot (\bar{x} of 4 reps)
	Total	Marketable		
SDc 843	65	39	12.0	5.2
SDc 955	47	30	18.8	4.5
SDc 971	39	21	20.5	10.5
SDc 972	36	20	17.0	3.5
SDc 973	48	29	15.5	6.0
SDc 974	51	31	23.7	10.5
SDc 975	54	32	23.0	6.8
SDc 977	48	33	12.75	2.2
Camden (Key '81)	46	27	15.7	13.8
Imperator B11B (81-26)	43	23	33.5	0
Danvers 126	49	33	15.7	3.8
Bayes LSD 5%	11.2	8.9	8.7	3.8
C.V.	9.8%	12.8%	20%	31%

Note: This trial was a cooperative study with Dr. M. Riedel, The Ohio State University, and Mr. R. Hassell, Station Manager at Celeryville, Ohio. This area is a muck soil that has been set aside as a nematode nursery and has a history of high nematode populations.

The trial was harvested by hand and roots were graded as marketable (over 1½" diameter), small (under 1½" diameter), and culls. There were virtually no growth cracks or rot, so culls represent forked roots only. There was not a great deal of root galling in this test.

CELERY (Apium graveolens var. dulce
'Florida 683')
Early blight; Cercospora apii

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CONTROL OF EARLY BLIGHT OF CELERY WITH FUNGICIDES, 1982: A plot was established on organic "muck" soil (Rifle Peat) at Celeryville, Ohio to test several fungicides for early blight control. A completely randomized design with four replications was used. Each replicate consisted of two rows 50 ft long and 32 inches apart separated by two unsprayed rows. Eight-week-old transplants were set 6 inches apart on May 17. Standard commercial fertility, weed and insect control procedures were used throughout the test. Fungicides were applied weekly beginning on Jul 1 with a tractor-mounted, 2-row, boom sprayer with two Tee Jet disc-core D4-25 nozzles per row. Sprays were applied at 70 psi at a rate of 50 gal/A. Rainfall was near normal in June (5.34 inches) but quite low in Jul (2.37 inches) and Aug (2.38 inches). Supplimentary irrigation was applied during dry periods. Temperatures were near normal for this location. Cercospora lesions were first observed in the plot on Jul 6 and all treatments were evaluated on Aug 23.

Early blight development in the plot was severe. The best control occurred with Benlate plus Bravo. Other combinations of Benlate or Topsin M with Bravo or Dithane M-45 were also effective. Interestingly, increasing the spray interval to 14 days greatly decreased control with the Benlate/Bravo combination but not with Topsin M/Bravo. Dyrene gave poor control in the wetttable formualtion but reasonably good control as a flowable.

Treatment	Rate/A	Spray interval (days)	Disease index ¹
Tilt 3.6EC	4 oz	7	2.4 ABC ²
Tilt 3.6EC	8 oz	7	1.4 AB
Dyrene 4F	6 pt	7	1.4 AB
Dyrene 50W	3 lb	7	2.8 BC
Super - Tin 4F	4.7 oz	7	2.3 ABC
Bravo 500F	2.5 pt	7	2.0 ABC
Dithane M-45 80W	2.0 lb	7	3.7 C
Benlate 50W	8 oz	7	1.8 AB
Benlate 50W + Dithane M-45 80W	8 oz 1 lb	7	1.3 AB
Benlate 50W + Bravo 500F	8 oz 1 pt	7	0.6 A
Benlate 50W + Bravo 500F	8 oz 2 pt	14	2.8 BC
Topsin M 70W	8 oz	7	1.4 AB
Topsin M 4F	11.2 oz	7	2.1 ABC
Topsin M 4F + Bravo 500F	11.2 oz 1 pt	7	1.3 AB
Topsin M 4F + Bravo 500F	11.2 oz 2 pt	14	1.0 AB
Untreated check	-	-	6.0 D

1

Each figure represents the average of four 2-row plots rated: 0=(no visible infection); 1=($<$ 5% leaves with lesions); 2=(5 to 20%); 3=(20 to 40%); 4=(40 to 60%); 5=(60 to 80%); and 6=($>$ 80%).

²Letters indicate Duncan's multiple range groupings of treatments which do not differ significantly at $P=0.05$.

BROCOLLI (Brassica oleraceae var.
botrytis 'Shogun')
TURNIP (Brassica rapa 'Purple Top')
Downy mildew; Peronospora parasitica

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CONTROL OF CRUCIFER DOWNY MILDEW WITH FUNGICIDE SPRAYS, 1982: A plot was established on organic "muck" soil (Rifle Peat) at Celeryville, Ohio to test several fungicides for control of Downy Mildew on brocolli and turnips. A completely randomized design with four replications was used. Each replicate consisted of three rows 20 ft long and 15 inches apart with data taken from the center row. Brocolli was direct seeded on May 4 and turnips on Jun 3. Standard commercial fertility, weed and insect control procedures were used throughout the test. Drench treatments were applied with a watering can immediately following seeding. Foliar sprays were applied at 70 psi and 50 gal/A with a tractor-mounted, 3-row, boom sprayer containing four Tee jet disc-core D4-25 nozzles. A total of seven weekly and four biweekly sprays were applied beginning on Jun 8. Rainfall was near normal in Jun (5.34 inches) but quite low in Jul (2.37 inches) and Aug (2.38 inches). Supplimentary irrigation was applied during dry periods. Temperatures were near normal for this location. Downy mildew was not seen in the plot until mid-July and disease sufficient to evaluate did not occur until early August when plants were over-mature. Disease ratings were taken on Aug 6.

Downy mildew development in the plot was very light. All treatments had a little effect on disease development, but differences were too small to make confident evaluations. Super-Tin 4L caused a necrotic flecking of lower leaves on brocolli which could be seen by late June, but had no effect on the head or on turnip greens.

Treatment	Rate/A	Spray interval (days)	Disease Index ³	
			Broccoli	Turnips
Ridomil 2E	1 pt	Drench ¹	1.5 a	0.5 a
Ridomil 2E	4 pt	Drench ¹	0.8 a	1.2 a
Ridomil 2E	1 pt	Drench ²		
	1 pt	14	1.1 a	0 a
Ridomil 2E	1 pt	14	0.6 a	1.0 a
Ridomil 2E	2 pt	14	0.8 a	1.0 a
Ridomil MZ-58	2 lb	14	1.0 a	0.8 a
Dithane Z-78 75W	4 lb	7	1.2 a	1.0 a
Dithane Z-78 75W	6 lb	7	0.6 a	1.5 a
Bravo 500F	2.25 pt	7	1.0 a	1.5 a
Super-Tin 4L	4.7 oz	7	0.8 a	1.0 a
Unsprayed check	-	-	1.9 a	1.8 a

¹
Drenched over row at planting.

²Drenched over row at planting followed by 14-day spray at same rate.

³Each figure represents the average of four, 3-row plots rated on Aug 6 as: 0=no disease; 1=slight chlorotic flecks, (no sporulation); 2=a few lesions with sporulation; 3=up to 10% of leaf surface with sporulating lesions; 4=11 to 49% of leaf surface with sporulating lesions; and 5= >50% of leaf surface with sporulating lesions.

⁴Numbers within a column followed by the same letter are not significantly different according to the Duncan's New Multiple Range Test (P=0.05).

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SYNERGISTIC INTERACTION BETWEEN SPECIES OF LESION NEMATODES AND
VERTICILLIUM DAHLIAE, 1982

Tests in microplots for synergistic interactions between three species of lesion nematodes (Pratylenchus penetrans, P. scribneri and P. crenatus) and Verticillium dahliae were conducted at Celeryville in 1982. Preliminary data are given in Table 1 or P. penetrans and in Table 2 for the other species. As in previous years, the combination of P. penetrans and Verticillium decreased tuber yields and caused Early Dying Disease symptoms. Neither organism alone caused significant yield loss or symptoms of Early Dying. Other nematode-fungus combinations did not cause yield loss on Early Dying Symptoms. This year's data at Celeryville indicate that the synergistic interaction between lesion nematodes and Verticillium dahliae is dependent on species of nematodes.

Table 1

Treatments	Initial V microsclerotia (per 10/g soil)	Populations of <i>Pratylenchus</i>			Final disease severity ^v	Effects on plants		
		Initial (per 100 cm ³ soil)	Final ³ (per 100 cm ³ soil)	Final (per g root)		Fresh wt (g) per plant:		
						Shoot	Root	Tuber
<u>1982^z</u>								
Uninoculated control					0.5	659	7.4	821
Low P		25			0.6	664	9.7	878
Medium P		92	DATA NOT YET AVAILABLE		0.5	646	8.6	871
High P		229			0.7	703	9.8	919
Low V	10				0.7	626		941
High V	100				1.1	464		978
					1.4	503	7.8	767
Low P/low V	10	25			1.8	386	7.7	714
Low P/high V	100	25			0.7	759	11.1	824
Medium P/low V	10	92			1.9	337	7.0	550
Medium P/high V	100	92			1.7	417	8.5	697
High P/low V	10	229			2.4	276	7.2	659
High P/high P	100	229						

^v Plants were rated on a scale of 0(no disease) to 3(complete necrosis) based on a combination of wilting, chlorosis, and necrosis.

^w Values are the means of 40, 10-g soil replicates (10, 10-g soil replicates from each of four high-V or four low-V treatments).

^x Values in columns two to eight are the means of 15 samples.

^y Values followed by the same letter are not significantly different (DMRT, P = 0.05).

^z Statistical analysis of 1982 data not yet available.

Table 2. Initial and final populations of *Pratylenchus scribneri* (S), *P. crenatus* (C) and *Verticillium dahliae* (V) and their effects on plant shoot, root, and tuber weight and disease severity at harvest of potatoes grown in microplots on Rifle peat in Ohio in 1982

Treatments	Initial V microsclerotia (per 10/g soil)	Populations of <i>Pratylenchus</i>			Effects on plants			
		Initial (per 100 cm ³ soil)	Final (per 100 cm ³ soil)	Final (per g root)	Final disease severity ^w	Fresh wt (g) per plant:		
						Shoot	Root	Tuber
<u><i>P. scribneri</i></u>								
Uninoculated control					0.7	520	DATA NOT YET AVAILABLE	610
Low S		22 ^y	DATA NOT YET AVAILABLE		0.7	611	AVAILABLE	703
Medium S		42			0.9	487		596
High S		124			0.9	589		736
Low V	10 ^{xz}				0.5	907		817
High V	100				0.7	741		815
Low S/low V	10	22			0.5	739		766
Low S/high V	100	22			0.2	975		784
Medium S/low V	10	42			0.5	792		857
Medium S/high V	100	42			0.5	797		844
High S/low V	10	124			0.5	725		780
High S/high V	100	124			0.6	720		756
<hr/>								
<u><i>P. crenatus</i></u>								
Uninoculated control					0.5	698	DATA NOT YET AVAILABLE	607
Low C		9	DATA NOT YET AVAILABLE		0.6	543	AVAILABLE	764
Medium C		27			0.5	640		817
High C		65			0.3	742		749
Low V	10				0.8	621		862
High V	100				0.6	701		929
Low C/low V	10	9			0.9	631		917
Low C/high V	100	9			0.7	632		968
Medium C/low V	10	27			0.7	651		847
Medium C/high V	100	27			0.7	704		936
High C/low V	10	65			0.9	645		891
High C/high V	100	65			0.9	497		806

w
Plants were rated on a scale of 0(no disease) to 3(complete necrosis) based on a combination of wilting, chlorosis, and necrosis.

x
Values are the means of 40, 10-g soil replicates (ten 10-g soil replicates from each of four high-V or four low-V treatments).

y
Values in remaining columns are the means of 15 samples.

z
Statistical analysis of 1982 data not yet available.

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TRANSPLANTS vs. BARE-ROOT IN CONTROLLING ROOT-KNOT NEMATODE

Root-knot nematode traditionally causes most serious damage when high populations attack young plants with restricted root systems. A test was made to determine if the increased size of the root ball of "Speedling" celery transplants compared to that of greenhouse (bare root) transplants proved to be a benefit when plants were transplanted into root knot infested soil. Three foliar sprays of oxamyl (2 lb ai/20 gal water/A) applied at transplant, and thereafter at monthly intervals, were applied to half of each plot as a check on nematode losses. Initial nematode populations were 125 larvae/500 cc soil. No increase in yield was correlated with any treatment. This may have resulted from the low nematode populations in the test plot.

8/10/82

CELERYVILLE

CELERY

Treatment	Row #	Weight (lbs.)	Count	Total Weight	Average Weight	Total Count	Average Count
Vydate (bare root)	1	70.3	17				
	2	68.2	16				
	3	68.4	17				
	4	74.6	17	281.5	70.4	67	16.8
Check (bare root)	1	68.4	17				
	2	63.3	16				
	3	71.3	17				
	4	72.6	17	275.6	68.9	67	16.8
Check (Speedling)	1	69.3	17				
	2	70.6	18				
	3	73.0	18				
	4	88.0	23	300.9	75.2	76	19
Vydate (Speedling)	1	79.4	21				
	2	68.5	21				
	3	71.2	18				
	4	58.7	16	277.8	69.5	76	19

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ROTATIONS FOR CONTROL OF ROOT-KNOT NEMATODE

Meloidogyne hapla can be controlled by including non-host plants in the rotation. Any crop in the grass family is a non-host for this nematode. Control of root-knot nematode in the Celeryville mucks by rotation was tested by growing radishes (susceptible crop) after sweet corn. Sweet corn produced 1200 marketable ears/A on August 6, 1982. Sale value on that date was \$600/A. Radishes seeded 3 days after corn harvest were produced without nematode damage. Initial root knot populations (before seeding corn) were 98 larvae/500 cc soil. Final nematode populations (after radish harvest, September 17, 1982) were 2 larvae/500 cc soil. Final populations under a continuous host crop (carrots) was 52/500 cc. Average yield was 19.4 lbs/80' row (=8.4 T/A). Average saleable weight was 14.4 lbs/80' row (=6.3 T/A). Weight included fresh tops.

Weed control is vital to successful control of nematodes since many weeds in the Celeryville area are hosts of root knot.

Table 1. Radishes produced on root-knot infested soil following one crop of sweet corn.

		# Saleable	Wt (lbs) Saleable	Total #	Total Wt
Rep	I ^a	449	17.0	600	21.8
	II	360	10.5	531	14.1
	III	321	11.1	484	15.7
	IV	413	19.1	682	26.1

a) each rep is total of radishes harvested from 80' of row.

COMMON MEASUREMENTS

Number of Feet of Row Per Acre
at various Row Spacings

Distance between Rows in inches		Feet of Row Per Acre
12	=	43,560
15	=	34,848
18	=	29,040
20	=	26,136
21	=	24,891
24	=	21,780
30	=	17,424
36	=	14,520
40	=	13,068
42	=	12,445
48	=	10,890
60	=	8,712
72	=	7,260
84	=	6,223
96	=	5,445

Length

1 centimeter	=	10 millimeters
1 centimeter	=	0.4 inch (0.394)
1 inch	=	25.4 millimeters or 2.54 centimeters
1 foot	=	30.48 centimeter
1 yard	=	91.44 centimeters
1 yard	=	0.914 meters
1 meter	=	100 centimeters
1 kilometer	=	1000 meters
1 kilometer	=	0.621 mile

Area

1 square meter	=	10.8 square feet (10.76)
1 square meter	=	1.2 square yards (1.196)
1 square meter	=	0.0001 hectare
1 hectare	=	10000 square meters
1 hectare	=	2.47 acres
1 hectare	=	395 square rods (395.4)
1 acre	=	0.405 hectare (0.4047)
1 square mile	=	2.59 square kilometers
1 square kilometer	=	0.39 square mile (0.386)

Weight

1 gram	=	1000 milligrams
1 ounce	=	28 grams (28.35)
1 pound	=	454 grams (453.6)
1 kilogram	=	1000 grams
1 kilogram	=	2.2 pounds (2.205)
1 metric ton	=	2205 pounds (2204.6)
1 metric ton	=	1.1 short tons (1.102)
1 metric ton	=	0.98 long ton (0.9842)
1 short ton	=	2000 pounds
1 long ton	=	2240 pounds

Volume (liquid)

1 teaspoon	=	5 milliliters (approx)
1 tablespoon	=	15 milliliters (approx)
1 ounce	=	30 milliliters (approx)
1 pint or 2 cups	=	473 milliliters (473.2)
1 quart	=	946 milliliters (946.3)
1 gallon	=	3785 milliliters (3785.3)
1 liter	=	1000 milliliters
1 pint	=	0.47 liter (0.473)
1 quart	=	0.95 liter (0.946)
1 gallon	=	3.8 liters (3.785)

FERTILIZER GUIDELINES FOR VEGETABLE CROPS GROWN ON MUCK SOILS IN OHIO

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Crop	Available Phosphorus**			Available Potassium**			Nitrogen*
	Below 75	75-120	Over 120	Below 200	201-300	Over 300	Amount to Apply lbs/A
	Amount to Apply			Amount to Apply			
	lbs/A	lbs/A	lbs/A	lbs/A	lbs/A	lbs/A	N
	P ₂ O ₅	P ₂ O ₅	P ₂ O ₅	K ₂ O	K ₂ O	K ₂ O	
1. Beets, Red	150-200	100-150	50-100	175-225	125-175	75-125	25-60
2. Carrots	150-175	125-150	75-125	250-300	200-250	150-200	70-100
3. Celery	250-300	200-250	150-200	375-425	350-375	300-350	50-125
4. Celery Cabbage	150-200	100-150	75-100	175-225	150-175	100-150	35-45
5. Dill	175-200	150-175	125-150	175-200	150-175	125-150	40-90
6. Endive	125-175	100-125	75-100	125-175	100-125	75-100	25-90
7. Escarole	125-175	100-125	75-100	125-175	100-125	75-100	25-90
8. Greens	125-150	100-125	75-100	150-175	125-150	100-125	40-90
9. Lettuce	125-175	100-125	75-100	125-175	100-125	75-100	25-90
10. Onions (Dry)	150-200	100-150	50-100	200-250	125-200	100-125	25-90
11. Green Onions	100-150	75-100	50-75	100-150	75-100	50-75	25-40
12. Parsley	125-175	100-125	75-100	125-175	100-125	75-100	25-90
13. Potatoes	150-175	125-175	75-125	225-275	175-225	125-175	75-125
14. Radishes	125-150	100-125	75-100	100-150	75-100	50-75	25-75
15. Spinach	150-175	125-150	100-125	125-150	100-125	75-100	50-125
16. Sweet Corn	125-175	100-125	75-100	100-150	75-100	40-75	50-140

*Amount of nitrogen to apply will vary with crop, time of year, soil temperature, water applied, type of muck, residue being incorporated into soil and related factors.

**REAL Lab Soil Test Values

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