

30530

O. A. R. D. C.

FEB 14 1983

LIBRARY

1981

CUCUMBER CULTIVAR EVALUATION TRIALS

Dale W. Kretchman, Mark A. Jameson and Charles C. Willer

C690

DEPARTMENT OF HORTICULTURE
OHIO AGRICULTURAL RESEARCH AND DEVELOPMENT CENTER
U.S. 250 and Ohio 83 South
Wooster, Ohio 44691

639
Oh3

30223

O. A. R. O. C.

FEB 14 1983

LIBRARY

PICKLING CUCUMBER CULTIVAR EVALUATION TRIALS - 1981

The pickling cucumber cultivar evaluation trials were conducted at the OARDC Vegetable Crops Branch near Fremont. Twenty-four cultivars or lines were evaluated in a non-replicated observational trial.

Cultural Information

The soil is classed as a sandy loam. A broadcast application of 10-20-20 at 750 lbs/A was made and incorporated prior to planting. The plants were seeded on June 18 using a Stan-Hay seeder which seeds 4 to 5 seed per ft. of row. Plants were thinned to 3 single plants per foot of row at the first true leaf. Rows were 30 ft. long on 30-in. centers. Alanap + Prefar at 2 lb/A each were incorporated before planting. One active hive of honey bees was placed in the plot area when the plants started to bloom. All other cultural practices during the growing season were according to standard recommendations. Weed control was excellent and no serious problems with insects or diseases developed during the season.

The plots were harvested by hand and the cucumbers were graded and sized using a commercial sizer. Fruits were classed into the following sizes and values placed on each size according to the following values:

<u>Size</u>	<u>\$/Ton*</u>	
	<u>PCIC</u>	<u>Ohio</u>
1. Less than 1 1/6 in.	120	240
2. 1 1/6 to 1 1/2 in.	60	120
3. 1 1/2 to 2 in.	40	60
4. 2 to 2 1/4 in.	20	10

Time and labor limitations prevented harvesting each cultivar or line when it had reached optimum maturity for maximum returns (a few over-sized fruits in each plot). This undoubtedly influenced the first harvest yields and values, but it was felt that data from subsequent harvests would compensate for the lack of correct timing of the first harvest. Harvest started on July 27 and continued through August 17.

Growing conditions were generally good throughout the season with near normal temperatures, but below normal rainfall in July and August. Rainfall from planting on June 18 to the end of June was 2.98 in.; July rainfall was 1.80 in.; rainfall to August 17 was 0.55 in. rain.

Seed companies and others who provided the seed for the trials included: Northrup, King and Co., Gilroy, CA; Asgrow Seed Co., Kalamazoo, MI; Ferry-Morse Seed Co., Mountain View, CA; Petoseed Co., Inc., Saticoy, CA; Agr. Canada, Harrow, Ontario; Dessert Seed Co., Brooks, OR; A.L. Castle, Inc., Morgan Hill, CA.

* PCIC values established by the Pickling Cucumber Improvement Committee of Pickle Packers International. Ohio values based upon estimated average prices in 1975-79 period.

All publications of the Ohio Agricultural Research and Development Center are available to all on a nondiscriminatory basis without regard to race, color, national origin, sex, or religious affiliation.

TABLE 1. First harvest yield from Observation Trial of pickling cucumbers - 1981

Line	Source	Lot. No.	Size	Tons/A				Total	Culls
				1	2	3	4		
XPH-1304	Asgrow	M8088		.20	.29	.14	.00	.63	.00
XPH-1191	Asgrow	VGR7070		.23	.00	.00	.00	.23	.06
Tamor	Asgrow	VGR7071		.03	.00	.00	.00	.03	.00
Spartan Wonder	Asgrow	M8074		.20	.20	1.16	.00	1.56	.09
Chemset	Asgrow	VGV4992		.06	.00	.00	.00	.06	.00
PSX-10780	Peto Seed	131-1000		.03	.00	.00	.00	.03	.00
Improved Pioneer	Dessert Seed	B6-21P		.14	.00	.00	.00	.14	.00
Harrow 77.01	Agr. Canada	80-455-456		.00	.00	.00	.00	.00	.00
Harrow 80.05	Agr. Canada	80-200-201		.09	.00	.00	.00	.09	.03
FX-4320	Ferry-Morse	---		.32	.00	.00	.00	.32	.00
FX-4290	Ferry-Morse	E0210		.09	.00	.00	.00	.09	.00
FX-4539	Ferry-Morse	18726		.00	.00	.00	.00	.00	.00
FX-4551	Ferry-Morse	---		.00	.00	.00	.00	.00	.00
VIP	Ferry-Morse	---		.09	.00	.00	.00	.09	.03
Castlehy - 2012	A.L. Castle	80C-1ACD		.03	.06	.00	.00	.03	.14
Castlehy - 2014	A.L. Castle	32		.20	.06	.09	.11	.46	.14
NKX - 2025	Northrup-King	10500		.03	.00	.00	.00	.03	.00
NKX - 1900	Northrup-King	10300		.03	.00	.00	.00	.03	.00
NKX - 823	Northrup-King	70200		.00	.00	.00	.00	.00	.00
NKX - 2000	Northrup-King	05100		.03	.00	.00	.00	.03	.00
NKX - 1902	Northrup-King	81500		.00	.00	.00	.00	.00	.00
NKX - 1901	Northrup-King	05200		.00	.00	.00	.00	.00	.00
Pioneer	Northrup-King	37559-5300		.21	.08	.05	.00	.34	.02
Carolina	Northrup-King	37532-21003		.43	.10	.00	.00	.53	.01

TABLE 2. Yield from Observation Trial of Pickling Cucumbers - 1981.

Line	Yield at 7 Harvest Dates - Tons/A								Sex Expression (%)*			
	7/27	7/30	8/3	8/6	8/10	8/13	8/17	Total	GY	PF	PM	M
XPH-1304	.63	1.28	2.75	2.29	2.35	2.81	1.97	14.08	80	10	--	10
XPH-1191	.23	2.00	2.75	1.74	2.32	3.10	1.39	13.53	50	30	20	--
Tamor	.03	1.48	3.22	1.48	2.52	.84	1.68	11.25	90	10	--	--
Spartin Wonder	1.56	2.09	3.16	1.45	3.22	1.97	1.16	14.61	100	--	--	--
Chemset	.06	1.13	2.96	1.74	2.96	1.65	2.35	12.85	90	10	--	--
PSX-10780	.03	.81	2.55	1.45	2.26	2.93	2.00	12.03	10	40	40	10
Improved Pioneer	.14	.99	2.87	.87	1.97	2.40	2.17	11.41	50	30	10	10
Harrow 77.01	.00	.67	3.22	1.39	2.26	2.98	2.87	13.39	20	50	30	--
Harrow 80.05	.09	1.04	3.10	1.91	2.64	2.29	2.06	13.13	--	40	50	10
FX-4320	.32	1.53	2.93	1.91	3.07	.72	2.03	12.51	64	40	--	--
FX-4290	.09	1.25	2.58	1.83	2.96	2.49	2.17	13.37	60	20	20	--
FX-4539	.00	.64	2.47	1.65	3.68	1.42	2.55	12.41	60	10	30	--
FX-4551	.00	.81	2.67	2.84	3.19	2.08	2.26	13.85	50	30	10	10
VIP	.09	1.25	2.93	1.89	2.90	1.71	1.65	12.42	80	20	--	--
Castlehy-2012	.03	1.80	4.35	2.00	3.71	2.06	2.05	16.00	50	40	10	--
Castlehy-2014	.46	1.28	3.62	2.38	3.54	1.88	2.08	15.24	70	30	--	--
NKX-2025	.03	.84	3.45	2.20	3.51	.99	3.71	14.73	100	--	--	--
NKX-1900	.03	1.07	2.96	2.55	2.49	1.39	2.52	13.01	40	60	--	--
NKX-823	.00	1.16	2.23	1.80	2.37	.93	1.91	10.40	90	10	--	--
NKX-2000	.03	.61	3.08	1.91	2.64	1.45	1.97	11.69	100	--	--	--
NKX-1902	.00	1.62	2.61	1.86	3.13	1.39	2.26	12.87	90	--	--	10
NKX-1901	.00	.40	2.26	1.51	2.78	1.04	2.55	10.54	70	30	--	--
Pioneer	.34	1.49	3.36	2.04	2.13	2.08	2.21	13.65	60	36.7	3.3	--
Carolina	.53	1.62	3.15	1.83	2.57	2.82	2.30	14.92	60	33.3	6.7	--

* Sex expression data taken on July 22 from a sample of 10 plants per row:

GY = All flowers were pistillate (female) on first 6 nodes

PF = Less than 3 staminate (male) flowers on first 6 nodes

PM = 3 or more staminate flowers on first 6 nodes

M = All staminate flowers on first 6 nodes

TABLE 3. Value of harvested cucumbers from Observation Trial based on PCIC values - 1981.

Line	Values of 7 Harvest Dates - \$/A							Total
	7/27	7/30	8/3	8/6	8/10	8/13	8/17	
XPH-1304	47	114	206	146	171	227	114	1025
XPH-1191	28	168	204	133	166	236	95	1030
Tamor	3	128	198	107	178	75	112	801
Spartin Wonder	82	147	213	111	197	202	78	1030
Chemset	7	113	214	135	199	162	132	962
PSX-10780	3	76	179	122	147	226	118	871
Improved Pioneer	17	90	214	73	119	198	116	827
Harrow 77.01	0	62	198	100	156	224	153	893
Harrow 80.05	10	94	217	166	186	206	136	1015
FX-4320	38	132	211	132	174	66	111	864
FX-4290	10	118	170	139	172	155	143	907
FX-4539	0	52	167	116	212	81	148	776
FX-4551	0	76	195	7	159	132	107	676
VIP	10	98	206	134	192	147	107	894
Castlehy-2012	38	139	308	161	192	105	103	1046
Castlehy-2014	33	110	218	169	173	113	96	912
NKX-2025	3	83	263	162	230	82	192	1015
NKX-1900	3	97	217	166	176	125	167	951
NKX-823	0	107	175	125	169	76	127	779
NKX-2000	3	62	230	155	162	99	131	842
NKX-1902	0	118	191	144	184	112	131	880
NKX-1901	0	42	170	122	182	70	145	731
Pioncer	32	127	239	133	128	152	139	950
Carolina	58	135	221	150	167	188	141	1060

TABLE 4. Values of harvested cucumbers from Observation Trial based on Ohio values - 1981

Line	Values of 7 Harvest Dates - \$/A							Total
	7/27	7/30	8/3	8/6	8/10	8/13	8/17	
XPH-1304	92	229	402	276	337	444	217	1997
XPH-1191	55	332	398	258	318	454	181	1996
Tamor	7	257	376	205	353	148	215	1561
Spartin Wonder	142	281	416	217	367	402	151	1976
Chemset	14	226	412	261	384	322	250	1869
PSX-10780	6	153	348	243	279	431	226	1686
Improved Pioneer	35	181	412	146	226	386	207	1629
Harrow 77.01	0	125	369	198	301	433	276	1702
Harrow 80.05	21	188	417	330	363	411	264	1994
FX-4320	76	264	411	261	316	132	203	1663
FX-4290	21	236	323	273	320	285	275	1733
FX-4539	0	104	316	229	397	146	278	1470
FX-4551	0	153	379	323	275	243	185	1558
VIP	21	183	400	255	363	290	210	1722
Castlehy-2012	76	278	590	320	337	168	185	1954
Castlehy-2014	62	219	412	323	302	205	158	1681
NKX-2025	7	167	513	313	444	161	335	1940
NKX-1900	7	195	428	316	336	247	320	1849
NKX-823	0	215	350	245	327	149	243	1529
NKX-2000	7	125	449	308	313	184	249	1635
NKX-1902	0	235	364	282	340	221	244	1686
NKX-1901	0	83	337	242	355	132	269	1418
Pioneer	63	253	466	253	239	289	262	1825
Carolina	116	269	428	297	323	351	261	2045

TABLE 5. Observations on fruit characteristics from Observation Trial of pickling cucumbers - 1981.

Lines	Fruit	L/D*	Spine color**	Seed cavity size***
XPH-1304	Very light green color	2.8	W	S
XPH-1191	Fairly dark stippled color	3.1	W	S
Tamor	Fairly dark stippled color	2.8	W	-
Spartin Wonder	Very dark green color, too long	3.3	W	+
Chemset	Very dark green color	2.8	W	S
PSX-10780	Green color, short, warty	2.7	W	+
Pioneer Improved	Light color	2.6	B	+
Harrow 77.01	Fairly good color	2.9	W	+
Harrow 80.05	Light color	2.8	W	-
FX-4320	Fairly dark color	3.2	W	S
FX-4290	Dark uniform color	2.9	W	S
FX-4539	Dark uniform color, warty	2.9	W	S
FX-4551	Fairly dark uniform color	2.9	W	+
Castlehy-2012	Dark uniform color	3.2	W	+
Castlehy-2014	Dark uniform color	2.8	W	+
VIP	Dark stippled color	2.9	W	S
NKX-2025	Dark uniform color	2.8	W	S
NKX-1900	Medium green color	3.1	W	+
NKX-823	Medium green color	2.7	W	+
NKX-2000	Dark uniform color, bit crooked	2.8	W	S
NKX-1902	Fairly dark stippled color	2.7	W	S
NKX-1901	Medium dark color	2.8	W	+

* L/D ratio - taken from fruit sample of size 2 fruits

** Spine color - W = white; B = black

*** Seed cavity compared to Carolina = S = same size; + = larger; - = smaller

FRESH MARKET CUCUMBER CULTIVAR EVALUATION TRIALS - 1981

Eight cultivars or lines were evaluated in a replicated trial and 6 lines were evaluated in a non-replicated observational test.

Cultural Information

Seeds were sown in 2 1/4 in. sq. peat pots on May 12. Pots contained a mixture of 1/3 each soil, sand and peat. Two plants were grown per pot. Plants were field set by hand on June 2.

A broadcast application of 10-20-20 of 750 lb/A was made and incorporated prior to laying the plastic. Four-ft. wide 1.5 mil black plastic mulch was laid on 6 ft. centers before transplanting. Rows were 22.5 ft. long and the 2-plant pots were spaced 18 in. apart. Cultivars were replicated 3 times in the replicated trial. Alanap and Prefar at 2 lb/A were incorporated before planting. One active hive of bees was placed in the plot area when the plants started to bloom. All other cultural practices during the growing season were according to standard recommendations. Weed control was good and no serious problems with insects or diseases developed during the season.

The plots were harvested by hand and the cucumbers were graded according to U.S. grade standards as No. 1, No. 2, and culls. Harvest started on July 7 and continued through August 14.

Rainfall from planting on June 2 to the end of June was 9.25 in; July rainfall was 1.80 in; rainfall to August 14 was 0.55 in.

Seed sources were Joseph Harris Co., Inc., Rochester, NY; Asgrow Seed Co., Kalamazoo, MI; Ferry-Morse Seed Co., Mountain View, CA; Stokes Seeds, Inc., Buffalo, NY

TABLE 1. Early yield of fresh market cucumbers from Replicated Trial - first 4 harvests 7-7 to 7-15, 1981.

Variety	Source	U.S. No. 1			U.S. No. 2		Culls	
		(cwt/A)	(%)	Fruit Wt. (lbs)	(cwt/A)	(%)	(cwt/A)	(%)
Raider	Harris	74	83	.48	7	11	2	6
Slicemaster	Harris	72	80	.46	11	17	2	3
Sprint-440	Asgrow	69	77	.51	12	16	4	7
FX-4289	Ferry-Morse	67	80	.45	11	17	2	3
Marketmore-76	Harris	51	87	.48	6	11	.6	2
Pacer	Harris	45	85	.45	5	13	.6	2
Marketmore-70	Harris	42	90	.43	3	10	0	0
Medalist	Harris	42	74	.39	7	22	1	4
LSD .05 =		18	--	.06	5	--	-	-

TABLE 2. Total yield of fresh market cucumbers from Replicated Trial yield from 17 harvests - 7-7 to 8-14, 1981.

Variety	U.S. No. 1			U.S. No. 2		Culls	
	(cwt/A)	(%)	Fruit Wt. (lbs)	(cwt/A)	(%)	(cwt/A)	(%)
Slicemaster	262	73	.60	49	17	29	10
FX-4289	261	75	.59	46	16	21	9
Raider	243	75	.60	43	16	21	9
Sprint-440	228	68	.62	62	20	31	12
Marketmore-76	225	80	.61	33	14	10	6
Marketmore-70	205	82	.59	25	14	8	4
Medalist	197	71	.58	35	17	21	12
Pacer	195	74	.60	37	17	17	9
LSD .05 =		34	5	--	19	--	--

TABLE 3. Early yield of fresh market cucumbers from Observational Trial - first 4 harvests 7-7 to 7-15, 1981.

Variety	Source	<u>U.S. No. 1</u> (cwt/A)	Fruit Wt. (lbs)	<u>U.S. No. 2</u> (cwt/A)	<u>Culls</u> (cwt/A)
Harvest Prince	Stokes	71	.66	7	8
GMUS	Harris	51	.59	5	1
G8GD	Harris	43	.61	6	.6
New Market #2	Stokes	39	.64	7	3
Green Bowl	Stokes	38	.39	13	0
G8M	Harris	26	.43	6	0

TABLE 4. Total yield of fresh market cucumber from Observational Trial - 17 harvests 7-7 to 8-14, 1981.

Variety	<u>U.S. No. 1</u> (cwt/A)	Fruit Wt. (lbs)	<u>U.S. No. 2</u> (cwt/A)	<u>Culls</u> (cwt/A)
GMUS	224	.63	20	23
G8M	185	.62	35	25
Harvest Prince	180	.78	36	67
G8GD	159	.70	51	19
New Market #2	174	.82	57	40
Green Bowl	130	.66	43	41

TABLE 5. Fruit characteristics from Replicated fresh market cucumber trial - 1981.

Cultivar	Fruit
Raider	Good color, and shape
Slicemaster	Striped color, good shape some restriction on stem end
Sprint 440	Striped at blossom end, good shape
FX-4289	Light green color, good shape
Marketmore-76	Good color and shape
Pacer	Good color and shape
Marketmore-70	Good color and shape
Medalist	Good color and shape

TABLE 6. Fruit characteristics from Observation fresh market cucumber trial - 1981.

Lines	Fruit
Harvest Prince	Dark green color, smooth, some scars, thin skin
GMUS	Very light color, good shape
G8GD	Good color and shape
New Market #2	Dark green color, smooth, thin skin
Green Bowl	Dark green color, smooth, some scars, thin skin
G8M	Good color and shape

