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MUSKMELON CULTIVAR EVALUATION TRIALS

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Muskmelon Cultivar Evaluation Trials for 1977

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Muskmelon cultivars were evaluated during the summer of 1977 at the Ohio State University Horticulture Farm in Columbus and at the Ohio Agricultural Research and Development Center Crops Research Unit at Green Springs. Eight lines and hybrids were compared in replicated plots at Columbus and 20 were compared in the replicated trial at Green Springs. Sixteen lines and hybrids were observed in non-replicated plots at Columbus and 10 were observed at Green Springs.

Cultural Information

Green Springs

Plant Growing: Seeds were sown in 2 1/4 in. sq. peat pots on May 4. Pots contained a mixture of 1/3 each, soil, peat and sand. Two plants were grown per pot. Plants were field set by hand on May 25.

Field Culture: 780 lb/A of 6-24-24 was broadcast and worked in prior to planting. Also, 200 lb/A of 5-30-15 was drilled in the row prior to laying the plastic. Four-ft. wide, 1.5 mil black plastic mulch was laid on 6 ft. centers immediately before transplanting. Rows were 25 ft. long and the 2-plant pots were spaced 30 in. apart. There were 4 replications of each cultivar in the replicated trial. One-half pint of starter solution of 6 lb/100 gal. of 10-52-17 was added to each hill at planting. Vegiben 2E was sprayed between the plastic at 2 lb/A for weed control. All other cultural practices during the season were according to standard recommendations and no serious insect, disease or weed problems occurred.

<u>Rainfall:</u>	May, after 25th	.13 in.
	June	5.44 in.
	July	3.34 in.
	August	4.46 in.
	to Sept. 12	0.51 in.

Harvest: Started Aug. 1 and continued through Sept. 12.

Columbus

Plant Growing: Seeds were sown on May 10 into 2 1/2 in. Cel-Packs. Two plants were grown in each pot. Plants were field set by hand on May 31.

Field Culture: 800 lb/A of 12-12-12 was broadcast and plowed down prior to planting. Four-ft. wide, 1.5 mil black plastic mulch was laid on 6-ft. centers before planting. Rows were 25 ft. long and hills were spaced 30 in. apart. There were 4 replications of each cultivar in the replicated trial. One-half pint per hill of a starter solution of 6 lb/100 gal. of 10-52-8 was applied at planting. Dacthal at 8 lb/A was applied to the unmulched area between the rows for weed control. Cultural operations during the growing season were according to recommended

practice.

<u>Rainfall:</u>	June	4.02
	July	2.52
	August	4.76
	September	3.48

Harvest: Harvest started on August 2 and continued through September 15.

Results and Discussion

Yield, grade and fruit size results for the first 10 days after the start of the harvesting of the earliest cultivar and the total season's harvest from the replicated trials are summarized in Tables 1 and 2. There are some obvious differences between cultivars and lines. There are also some very great differences between locations which illustrates the importance of evaluating lines under specific conditions and to use these data as guidelines for selecting new lines for grower trial.

The fine, sandy loam soil at Green Springs averages 3-4% organic matter. Rainfall in 1977 was adequate to excess at times and vegetative growth was generally excessive. This undoubtedly caused some of the reduction in factors associated with quality such as soluble solids, color and flavor and an increase in fruit cracking and associated breakdown. Excessive vigor and rainfall was generally not a problem at the Columbus site.

Yield, grade and fruit size results from the observational trials are summarized in Tables 3 and 4. Space limitations at the Columbus location prevented the inclusion of more of the named cultivars in the replicated trial and thus, many were in the observational trial.

Fruit quality evaluation data are presented in Tables 5 and 6. Quality ratings vary greatly between cultivars and locations. Obviously ripeness has a great influence on these quality factors and it is not always possible to evaluate all cultivars and lines with the same degree of ripeness. Nevertheless, these data should give a general indication of the quality of the lines evaluated. An additional discussion of fruit quality is presented in Table 7.

Some of the cultivars and lines do not have deep ribbing or sutures, or heavy netting and growers should consider their market requirements when selecting some of these lines or cultivars. Occasionally, a cultivar or line may have some other exceptional attribute such as earliness, very high quality, very good holding or shipping ability or resistant to certain diseases that would make it highly desirable for certain locations or uses.

SEED SOURCES

Cultivar	Lot No.	Source
Alaska Hybrid	---	Peto Seed Co., Saticoy, CA.
Ambrosia Hybrid	5016	W.Atlee Burpee Co., Philadelphia, Pa.
Ball "1776" Hybrid	410661	Geo. J. Ball, Inc. West Chicago, Ill.
Burpee Hybrid	6137	W.Atlee Burpee Co., Philadelphia, Pa.
Canada Gem Hybrid	199B	Stokes Seed, Inc., Buffalo, N.Y.
Classic F1 Hybrid	---	R.L. Holmes Seed Co., Canton, OH
Delicious 51	41037-60600	Northrup, King & Co., Minneapolis, Minn.
Dixie Jumbo Hybrid	B-7	Otis S. Twilley Seed Co., Salisbury, Md.
Early Dawn Hybrid	559	Joseph Harris Co., Rochester, N.Y.
Earlisweet Hybrid	---	R.L. Holmes Seed Co., Canton, OH
Edisto No. 47	41057-20400	Northrup, King & Co., Minneapolis, Minn.
Eureka	41058-20200	Northrup, King & Co., Minneapolis, Minn.
Gold Star Hybrid	562	Joseph Harris Co., Rochester, N.Y.
Harper Hybrid	190	Stokes Seed, Inc., Buffalo, N.Y.
Iroquois	41139-20500	Northrup, King & CO., Minneapolis, Minn.
Morgan	---	University of Florida, Bradenton, Fla.
Northern Queen Hybrid	B-8	Otis S. Twilley Seed Co., Salisbury, Md.
Roadside F1 Hybrid	1517 J	Letherman's, Inc., Canton, OH
Saticoy Hybrid	199 A	Stokes Seed, Inc., Buffalo, N.Y.
Star Headliner Hybrid	B-7	Otis S. Twilley Seed Co., Salisbury, Md.
Harris EXP #1	7-894	Joseph Harris Co., Rochester, N.Y.
Harris EXP #2	7-895	Joseph Harris Co., Rochester, N.Y.
EXP 1202	41267-20400SS	Northrup, King & Co., Minneapolis, Minn.
G-25B	5226	Joseph Harris Co., Rochester, N.Y.
G-25VB	5216	Joseph Harris Co., Rochester, N.Y.
HXP-2472	1568-195	Joseph Harris Co., Rochester, N.Y.
PSR-1574	---	Peto Seed Co., Saticoy, CA.
PSR-8374	---	Peto Seed Co., Saticoy, CA.
PSX-575	---	Geo. J. Ball, Inc., West Chicago, Ill.
XP-764	WTG 120	Asgrow Seed Co., Orange, Conn.

TABLE 1.--Harvest Date, Yield, Grade and Fruit Size of Cultivars of Muskmelon, Replicated Trial, Green Springs

Cultivar	First Harvest Date	Yield for Period Aug. 1-10			Season Total Yield		
		Mktble cwt/A	Fruit Size (1b)	% Culls	Mktbl cwt/A	Fruit Size (1b)	% Culls
Alaska	8/1	268.9	4.9	24.0	366.8	5.1	27.2
Ambrosia	8/15	0	0	0	538.1	5.9	22.8
Ball "1776"	8/9	6.9	7.2	0	408.0	5.2	14.1
Burpee	8/8	103.6	4.9	3.1	338.9	4.8	22.0
Canada Gem	8/8	20.9	5.4	21.5	345.6	5.7	17.7
Classic	8/10	21.7	5.7	16.1	349.1	5.7	22.2
Delicious 51	8/8	41.5	4.8	72.4	202.1	5.0	63.7
Dixie Jumbo	8/1	14.8	3.8	17.6	488.7	4.5	25.9
Early Dawn	8/1	321.1	5.5	15.8	432.4	5.6	26.0
Earlisweet	8/1	191.3	2.4	9.7	388.8	2.7	15.6
Edisto No. 47	8/9	15.6	5.4	26.9	299.7	6.6	40.4
Eureka	8/10	6.1	6.1	0	156.8	5.3	58.9
Gold Star	8/8	67.3	4.6	0	481.8	5.4	13.7
Harper	8/10	45.3	6.7	36.2	393.2	4.6	26.4
Iroquois	8/8	24.1	8.4	0	300.6	6.5	23.5
Morgan	8/1	4.9	5.1	20.1	295.0	6.0	30.9
Northern Queen	8/3	302.0	5.1	19.3	399.0	5.4	24.9
Roadside	8/10	43.8	7.6	21.7	281.7	7.0	49.0
Saticoy H	8/15	0	0	0	276.5	5.6	30.6
Star Headliner	8/8	12.7	4.5	22.5	342.9	5.4	18.8
LSD .05		49.39	---	----	43.08	1.23	----

TABLE 2.--Harvest Date, Yield, Grade and Fruit Size of Cultivars of Muskmelon, Replicated Trial, Columbus

Cultivar	Fruit Harvest Date	Yield for Period Aug. 2-11			Season Total Yield		
		Mktbl cwt/A	Fruit Size (lb)	% Culls	Mktbl cwt/A	Fruit Size (lb)	% Culls
Burpee	8/5	109.7	4.9	3.0	388.3	4.6	19.8
Classic	8/8	153.9	6.1	0.9	440.8	5.5	9.7
Delicious 51	8/5	68.2	4.3	69.0	230.5	3.4	57.6
Early Dawn	8/2	361.8	5.8	5.1	624.3	5.1	13.0
Edisto No. 47	8/15	0	0	0	389.1	5.5	17.1
Gold Star	8/5	119.6	5.0	2.6	428.0	4.9	13.6
Northern Queen	8/2	266.5	5.0	13.2	450.9	4.8	25.0
Saticoy	8/8	22.6	5.2	0	502.4	4.8	5.1
LSD	.05	56.0	1.7	----	53.9	.63	---

TABLE 3.--Harvest Date, Yield, Grade and Fruit Size of Lines of Muskmelon, Observational Trial, Green Springs.

Line	First Harvest Date	Yield for Period Aug. 1 to 10			Season Total Yield		
		Mktbl cwt/A	Fruit Size (lb)	% Culls	Mktbl cwt/A	Fruit Size (lb)	% Culls
PSX 575	8/10	26.1	3.0	65.1	99.3	2.6	34.9
EXP 1202	8/22	0	0	0	266.6	3.6	44.8
EXP #1	8/1	165.8	3.3	41.4	296.2	3.7	44.4
EXP #2	8/9	189.6	5.0	3.8	307.8	5.0	23.3
PSR 1574	8/19	0	0	0	237.5	4.5	18.8
PSR 8374	8/9	172.2	2.7	2.6	438.5	3.1	23.3
HXP 2472	8/15	0	0	100.0	374.6	4.8	19.4
G25VB	8/10	147.8	5.6	25.6	392.0	5.2	21.5
XP 764	8/10	62.4	5.4	14.3	421.1	4.7	23.7
G 25B	8/10	55.5	6.4	0	254.4	7.3	10.6

TABLE 4.--Harvest Date, Yield, Grade and Fruit Size of Cultivars and Lines of Muskmelon, Observational Trial, Columbus

Line	First Harvest Date	Yield for Period Aug. 2 to 11			Season Total Yield		
		Mktbl cwt/A	Fruit Size (lb)	% Culls	Mktbl cwt/A	Fruit Size (lb)	% Culls
Alaska	8/2	239.8	4.8	0	455.9	4.7	13.8
Abrosia	8/5	13.9	4.8	0	371.7	5.3	38.5
Ball "1776"	8/5	96.4	4.7	0	345.6	4.4	3.1
Canada Gem	8/8	114.4	5.6	0	412.4	5.4	4.7
Dixie Jumbo	8/8	158.5	4.5	3.7	432.7	4.0	14.5
Eureka	8/17	0	0	0	190.2	4.3	40.2
Harper	8/8	108.3	4.6	11.1	380.4	4.8	24.4
Iroquois	8/8	40.9	4.7	0	313.6	5.1	21.3
Morgan	8/2	10.1	3.5	0	231.4	5.6	57.9
Roadside	8/10	49.1	8.4	10.5	531.4	5.3	23.4
Star Headliner	8/10	65.9	7.5	16.8	421.1	4.6	21.8
Harris EXP #1	8/2	144.0	3.3	44.0	267.7	3.1	50.3
Harris EXP #2	8/5	293.3	5.6	0	519.8	4.8	5.4
EXP 1202	8/10	19.2	3.3	0	333.9	3.3	22.9
PSR 1574	8/2	5.8	2.0	51.2	204.4	3.2	40.9
PSX 575	8/8	71.4	2.4	26.3	242.5	2.5	25.5

TABLE 5.--Fruit Quality Characteristics of Muskmelon Cultivars or Lines -
Green Springs

Cultivar	% Soluble Solids	Flavor	Flesh Color
Alaska	5.5	3	2
Ambrosia	11.4	3	3
Ball "1776"	7.8	2	3
Burpee	8.5	3	4
Canada Gem	8.8	3	3
Classic	7.4	3	3
Delicious 51	10.0	3	3
Dixie Jumbo	12.1	3	3
Early Dawn	6.3	1	3
Earlisweet	6.6	2	4
Edisto No. 47	9.0	3	3
Eureka	5.9	2	3
Gold Star	9.4	2	4
Harper	10.6	4	4
Iroquois	8.0	2	3
Morgan	10.0	3	2
Northern Queen	9.9	2	2
Roadside	11.8	3	4
Saticoy	11.1	4	4
Star Headliner	8.8	3	4
XP 764	10.6	3	3
G25-B	8.5	2	2
HXP 2472	6.4	3	3
G 25VB	6.1	2	4
EXP #2	8.5	4	3
PSX 575	8.9	2	4
PSR 8374	8.2	4	4
PSR 1574	9.9	3	3
EXP #1	9.9	4	3
EXP 1202	10.1	3	4

Soluble Solids based upon duplicate refractometer readings from juice extracted from 2-3 fruit samples.

Flavor and color ratings based on a subjective rating of 1 to 5. 1 would be a very flat or undesirable flavor or a light yellow flesh color; 5 rating would indicate a highly desirable flavor or deep orange flesh color; 3 rating would be considered acceptable.

TABLE 6.--Fruit quality Characteristics of Muskmelon Cultivars or Lines - Columbus Trials.

Cultivar or Line	% Soluble Solids	Texture	Firmness	Flavor	Aroma	Flesh Color
Burpee	11.9	4	3	4	4	4
Classic	12.0	4	4	4	3	4
Delicious 51	9.8	2	4	3	2	4
Early Dawn	9.8	4	3	1	1	1
Edisto No. 47	12.8	4	5	3	3	3
Gold Star	10.5	4	3	2	2	3
Northern Queen	10.4	2	4	1	2	1
Saticoy	13.6	5	4	3	2	4
Alaska	12.2	4	4	3	3	2
Ambrosia	11.3	4	4	3	3	3
Ball "1776"	12.6	2	4	3	3	4
Canada Gem	11.7	4	4	4	4	4
Dixie Jumbo	10.6	4	4	3	2	3
Eureka	9.0	4	4	1	1	3
Harper	12.1	3	3	4	4	4
Iroquois	10.4	4	3	2	3	4
Morgan	14.2	4	4	3	2	1
Roadside	11.2	4	4	3	4	3
Star Headliner	10.6	4	4	3	4	3
Harris EXP #1	10.1	4	3	1	1	3
Harris EXP #2	10.0	4	4	2	3	3
EXP 1202	11.4	4	4	3	4	4
PSR 1574	11.4	2	4	2	4	4
PSX 575	9.7	4	4	1	2	3

Soluble Solids based upon duplicate refractometer readings from juice extracted from 2-3 fruit samples.

Flavor and Color ratings based on a subjective rating of 1 to 5. 1 would be a very flat or undesirable flavor or a light yellow flesh color; 5 rating would indicate a highly desirable flavor or deep orange flesh color; 3 rating would be considered acceptable.

TABLE 7. -- Additional Notes on Replicated and Observational Lines at Green Springs Unit.

Cultivar or Line	Notes on Fruits
Alaska	Long oval, large, very early, slightly ribbed, finely netted, large seed cavity, worthy of consideration for early roadside markets.
Ambrosia	Long oval, very large, no ribbing, very finely netted, small seed cavity, thick flesh, appears ripening is required after harvest.
Ball 1776	Round, medium large, med-deep ribbing, med-heavy netting, small to medium seed cavity, worthy of trial for main-season crop.
Burpee	Round, medium large, med-deep ribbing, med-light netting, med-large seed cavity, a standard variety.
Canada Gem	Round, medium large, medium ribbing, medium netting, med-large seed cavity.
Classic	Round, medium large, med-deep ribbing, med-heavy netting, very small seed cavity.
Delicious 51	Mostly round, med-small, med. ribbing, slight to poorly netted, large seed cavity, susceptible to splitting.
Dixie Jumbo	Round to oval, large, slightly ribbed, med netting, large seed cavity.
Early Dawn	Oval to long oval, medium size, slightly ribbed, slightly netted, med-small seed cavity, susceptible to soil rots under wet conditions, flavor is usually rated low.
Earlisweet	Round, small, slightly ribbed, med. netting, small seed cavity, early maturity, worthy of trial for early roadside markets.
Edisto No. 47	Oval, med-small, no ribbing, med-heavy netting, small cavity, susceptible to cracking and soil rots.
Eureka	Oval to round, medium, no ribbing, med-heavy netting, medium cavity.
Gold Star	Mostly round, med. large, deep ribbing, med-heavy netting, large cavity, a standard variety.
Harper	Round, medium, no ribbing, light-heavy netting, med-small cavity, susceptible to splitting.
Iroquois	Slight oval, large, ribbed, med-heavy netting, med-small cavity, tends to be off-shaped when large.

TABLE 7. -- Additional Notes on Replicated and Observational Lines at Green Springs Unit. (cont.)

Cultivar or Line	Notes on Fruits
Morgan	Honey dew type, oval-round, med-large, no ribbing, no netting, light green skin with light yellow spots when mature, large cavity, looks promising for this type in Ohio.
Northern Queen	Oval, large, ribbed, fine netting, small cavity. An early melon worthy of limited grower trial.
Roadside	Round, very large, deeply ribbed, very little netting, large cavity, excellent flavor, may be useful for specialty and roadside markets.
Saticoy	Short oval, med-large, very slightly ribbed, scattered netting, small cavity, useful as a late season melon.
Star Headliner	Round, medium, ribbed, heavy netting, small cavity, worthy of grower trial as mid-season variety.
PSX 575	Very short vines which appeared to be susceptible to breaking off at the soil line, fruits round, med-small, shallow ribbing, med-netting, small cavity; appears not well adapted to Ohio conditions.
EXP 1202	Round, medium sized, no ribbing, heavy netting, small cavity, good flavor, worthy of re-trial in Ohio.
EXP #1	Long oval, ribbed, slightly netted, very susceptible to splitting and thus, probably not adapted to Ohio.
EXP #2	Short oval, med. large, shallow ribbing, med. netting, large cavity, very good flavor, worthy of re-trial in Ohio.
PSR 1574	Long oval, med. large, no ribs, med-netting, med-small cavity, may not develop full quality under Ohio conditions.
PSR 8374	Round, small, very shallow ribbing, med. netting, tends to crack around stem attachment, probably not adapted to Ohio.
HXP 2472	Short oval, medium sized, med. deep ribbing, med-heavy netting, med-large cavity, fair to good flavor, appears worthy of re-trial in Ohio.
G25VB	Round, med-large, deeply ribbed, fine netting, very large cavity, flavor somewhat flat, does not appear to be adapted to Ohio.
XP 764	Round, small sized, very slight ribbing, very fine netting, med. cavity, flavor only fair, of questionable adaptability in Ohio.
G 25 B	Round oval, large, med. ribbing, poorly netted, very large cavity, flavor somewhat flat, does not appear to be adapted to Ohio.

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