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1973 Cabbage Cultivar Evaluation Trials

Dale W. Kretchman



DEPARTMENT OF HORTICULTURE

OHIO AGRICULTURAL RESEARCH AND DEVELOPMENT CENTER
Wooster, Ohio

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CABBAGE CULTIVAR EVALUATION TRIALS--1973

Dale W. Kretchman
Department of Horticulture
Ohio Agricultural Research and Development Center

The cabbage cultivar evaluation trials were conducted at the OARDC Green Springs Crops Research Unit near Green Springs. The soil is a sandy loam. The plots received 900 lb./A of 10-20-20 fertilizer, 1 lb./A boron and 2 lb./A of Dyfonate pre-plant incorporated. In addition, 6-24-12 at 150 lb./A was banded in the rows at planting. Treflan at .75 lb./A was pre-plant incorporated for weed control.

The plantings were direct seeded on April 9 using a Planet-Jr. seeder. Rows were 30 ft. long on 30-in. centers. The rows were hand-thinned to give a 12-in. spacing for the fresh market cultivars and 18-in. for the processing cultivars. Each cultivar was replicated three times.

Cultural care throughout the season was according to recommended procedures. No serious insect, disease or weed problems developed during the season. Monthly rainfall totals were:

April	-	4.05 in.
May	-	4.28 in.
June	-	4.90 in.
July	-	4.13 in.
Aug.	-	2.50 in.

When the fresh market cultivars reached marketable maturity, the author plus two other experienced persons individually evaluated each cultivar for external color, uniformity of head size and maturity, plant size, head shape, plant upright-ness, leaf bloom and wrapper-leaf cover. In addition, the number of bursted heads was recorded. The mature heads were then harvested, counted, weighed and evaluated for firmness. Three heads of each cultivar from each replicate were cut and the core length and polar and equatorial diameters recorded. One additional harvest was made for each cultivar when the majority of the remaining heads had reached marketable maturity.

Cultivars in the processing trial were harvested when the heads became very firm and fully exposed above the lower leaves of the plants and the outer wrapper leaves developed a yellowish cast to the normal green or blue-green color. Field evaluations were made on external color, uniformity of head size and maturity, plant size, head shape and plant upright-ness. The number of bursted heads and heads infected with rotting organisms were recorded. All the usable heads were harvested, counted and weighed. Data were recorded from a three-head sample from each replicate on firmness, internal color, mid-rib thickness, top-burn, core length and polar diameter.

Data from the fresh market trials are presented in Tables 1 and 2.

Results from the processing trials are presented in Table 3 except for the head firmness and internal color ratings. Heads from all cultivars were rated very firm and the internal color was rated yellowish-white.

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Although the data are generally self-explanatory, two types of data need additional explanation: Day No. Harvested refers to the day of the year each cultivar was harvested; the percent usable in the processing trial data (Table 3) was based upon the number of heads which were usable for processing from the total number of plants in each plot. In some cases the burst or rot was not sufficiently severe to eliminate the affected head. Further, in one case where the data indicate less than 100% usable and no rot or burst was found, plants were present which failed to produce usable heads for some unknown reason.

The author wishes to extend his sincere appreciation to the seed companies who supplied seed for these trials. Included were, Ferry-Morse Seed Co., Mountain View, Calif.; Joseph Harris Co., Inc., Rochester, New York; Northrup, King & Co., Minneapolis, Minn.; Niagara Div. FMC Corp., El Macero, Calif.; Agway Inc., Syracuse, New York; Asgrow Seed Co., Kalamazoo, Mich.; R. L. Holmes Seed Co., Canton, Ohio.

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TABLE 1.--Yield and Quality Characteristics of Cabbage Cultivars for Fresh Market-1973

Cultivar	Day No.	First Harvest			Total Harvest		Core Length	Polar Dia.	Equatorial Dia.
		Ton/A	lb/Head	% Harv.	Ton/A	lb/Head			
Extra Early F ₁ (Ferry-Morse)	190	15.4	2.32	70.1	17.9	2.02	2.63	5.85	5.54
Tastee (Holmes)	191	17.2	2.35	81.4	19.0	2.22	2.92	6.00	5.48
Starmaster (Holmes)	190	17.1	2.66	74.3	19.3	2.35	3.29	6.29	6.00
Polaris (Holmes)	204	25.4	3.59	81.2	26.6	3.41	3.77	6.69	6.81
Golden Acre F ₁ (Holmes)	191	13.1	2.27	66.4	16.2	2.08	3.40	5.94	6.21
NCX-907 (Niagara)	204	13.6	4.01	44.3	18.0	2.80	3.79	6.36	6.67
NCX-9016 (Niagara)	194	18.4	3.05	70.8	22.1	2.76	3.19	6.29	6.12
Jackpot (Niagara)	193	19.1	2.67	83.0	20.4	2.49	3.42	5.42	5.90
NCX-902 (Niagara)	200	15.3	2.86	58.7	18.1	2.60	3.88	5.94	5.88
Danny Boy (Niagara)	190	17.3	2.50	80.6	19.1	2.31	3.25	6.00	5.98
11C x 95 (Ferry-Morse)	191	18.9	2.83	75.1	21.1	2.60	3.40	6.50	5.88
11C x 118 (Ferry-Morse)	204	24.2	3.60	79.5	26.3	3.45	3.77	6.52	6.69
Blue Chip (Ferry-Morse)	197	21.1	3.22	74.3	24.7	2.95	3.13	6.09	5.88
Little Rock (Ferry-Morse)	204	17.9	2.52	84.6	19.0	2.41	2.60	5.60	5.71
Banner (Asgrow)	190	18.9	2.97	74.5	20.7	2.63	4.06	6.31	5.98
Headstart (Asgrow)	190	23.8	3.50	78.3	25.4	3.21	3.65	6.94	6.56
XP1037 (Asgrow)	194	24.3	3.02	95.4	24.6	2.98	3.96	6.19	5.77
P-3030 (Harris)	193	14.6	3.19	55.4	18.4	2.56	3.48	6.10	6.48
Market Victor (Harris)	190	22.7	2.71	93.7	23.2	2.62	3.02	6.06	5.88
Market Topper (Harris)	197	16.6	2.60	74.7	19.4	2.41	3.73	5.86	5.75
Market Prize (Harris)	200	17.6	2.47	75.9	19.6	2.31	3.56	5.73	5.75
Resistant Danish (Harris)	209	18.0	2.70	76.0	20.6	2.51	3.67	5.65	5.88
Green Winter (Harris)	220	20.1	2.70	83.0	20.1	2.70	3.88	6.42	5.50
Golden Acre 84 (Harris)	190	13.7	1.85	79.9	14.5	1.67	2.17	5.31	4.90
Ruby Ball (Harris)	202	14.3	2.53	65.0	18.3	2.25	2.38	5.81	5.27
Hybrid 15 (Harris)	193	12.8	1.83	82.2	13.9	1.73	3.10	5.69	5.65
Sun-up (Harris)	190	14.2	2.41	66.3	17.3	2.03	2.82	6.13	5.77
Excel (Harris)	211	18.4	3.04	75.4	20.4	2.80	3.73	5.96	5.69
Stonehead (Agway)	191	11.8	2.18	64.0	14.8	1.87	2.65	5.40	5.54
XP72-806 (Agway)	194	15.8	2.27	80.0	17.5	2.13	3.13	5.73	5.61
Green Boy (Northrup King)	204	32.0	4.18	90.7	33.1	4.06	3.61	6.67	7.13
Rio Verde (Northrup King)	206	26.3	3.91	77.3	28.1	3.65	3.19	5.94	6.54
Regina (Northrup King)	204	22.2	3.20	77.9	25.2	3.06	3.79	6.04	6.40
*Exp. 906 (Northrup King)	-	17.7	3.40	93.1	-	-	2.96	6.77	5.81
*Exp. 914 (Northrup King)	-	16.9	3.39	92.5	-	-	3.84	6.00	6.61
*Exp. 31 (Northrup King)	-	16.9	4.47	64.6	-	-	3.08	5.46	7.94
*Jet Pak (Northrup King)	-	21.0	4.03	94.7	-	-	2.79	6.56	6.21

* Field seeded on 6-18-73; all others field seeded on 4-9-73

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TABLE 2.--Quality Characteristic Ratings of Fresh Market Cabbage Cultivars-1973*

Cultivar	Firmness	External Color	Uniformity	Plant Size	Head Shape	Upright-ness	Leaf Bloom	Leaf Cover	Burst (%)
Extra Early F ₁	1.0	1.0	2.3	1.3	1.0	1.0	2.0	2.7	12.2
Tastee	1.0	1.0	1.0	1.0	1.3	1.0	1.7	2.0	2.2
Starmaster	1.0	1.7	2.3	1.3	2.0	1.0	2.0	2.3	3.4
Polaris	2.0	2.0	1.7	2.7	2.0	1.3	2.3	1.0	0
Golden Acre F ₁	2.0	1.0	2.0	1.3	1.7	1.0	2.0	2.3	1.2
NCX-907	1.0	1.7	3.0	2.3	2.0	1.3	2.3	1.0	0
NCX-9016	2.0	2.3	2.3	2.0	2.0	1.3	2.3	1.7	0
Jackpot	1.3	1.3	2.0	2.0	2.3	1.0	2.3	1.3	2.3
NCX-902	1.0	1.7	2.7	2.0	2.0	1.3	2.0	1.0	0
Danny Boy	1.3	1.3	2.7	1.7	2.0	1.0	2.0	2.3	12.5
11C x 95	1.7	2.0	2.0	2.0	1.7	1.0	2.7	1.7	0
11C x 118	2.0	2.0	2.0	3.0	2.0	1.7	2.3	1.0	0
Blue Chip	1.0	3.0	1.7	2.0	2.0	1.0	2.7	1.0	0
Little Rock	1.0	2.0	1.7	2.0	2.0	1.0	2.0	1.0	0
Banner	1.0	1.3	1.3	1.7	1.3	1.0	2.0	2.0	8.0
Headstart	2.0	1.0	2.3	2.0	1.7	1.7	2.0	2.3	8.8
XP1037	1.0	2.0	1.3	2.0	2.0	1.0	2.0	1.0	0
P-3030	2.0	2.7	3.0	2.0	2.0	1.0	3.0	1.3	0
Market Victor	1.3	2.0	1.7	1.7	2.0	1.0	2.7	1.7	5.5
Market Topper	1.3	2.0	1.7	2.0	2.0	1.0	2.0	1.3	0
Market Prize	1.7	2.0	1.0	1.7	2.0	1.0	2.0	1.0	0
Resistant Danish	1.0	2.0	2.0	2.0	2.0	1.3	3.0	1.0	0
Green Winter	1.0	2.0	2.0	3.0	2.0	2.0	2.0	1.3	0
Golden Acre 84	1.3	1.0	2.0	1.0	2.0	1.0	2.0	3.0	26.3
Ruby Ball	1.0	4.0	2.0	2.0	2.0	1.0	2.7	1.0	0
Hybrid 15	1.0	2.0	2.0	1.7	2.0	1.0	2.0	1.7	0
Sun-up	1.0	1.7	2.3	1.3	1.7	1.0	2.0	3.0	4.4
Excel	1.3	2.0	2.7	2.0	2.0	1.3	2.7	1.0	0
Stonehead	1.0	1.7	1.7	1.0	2.0	1.0	2.0	1.7	0
XP72-806	1.0	2.0	1.3	1.0	2.0	1.0	1.7	1.0	0
Green Boy	1.0	2.0	1.7	2.3	2.0	1.0	2.0	1.0	0
Rio Verde	1.7	2.0	2.0	2.3	2.0	1.0	2.3	1.0	0
Regina	1.0	2.7	1.3	2.3	2.0	1.0	3.0	1.0	0
Exp. 906	1.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	3.5
Exp. 914	1.7	2.0	2.3	2.0	2.0	2.0	1.7	2.0	0
Exp. 31	2.3	3.0	1.7	3.0	3.0	2.0	2.7	1.0	0
Jet Pak	1.0	2.0	1.3	1.7	2.0	2.3	1.7	2.0	3.5

* Firmness: 1- firm, 2- medium firm, 3-soft
 Color: 1- green, 2- blue green, 3- blue, 4- red
 Uniformity: 1- good, 2- fair, 3- poor
 Plant size: 1- small, 2- medium, 3- large

Head shape: 1- pointed, 2- round, 3- flat
 Uprightness: 1- upright, 2- slightly tipped, 3- very tipped
 Leaf bloom: 1- slight, 2- moderate, 3- heavy
 Leaf cover: 1- good, 2- fair, 3- poor

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TABLE 3.--Yield and Quality Characteristics of Cabbage Cultivars for Processing.
Green Springs. 1973.

Cultivar & Source	Day No. Harvested	Tons/ Acre	lb./ Head	% Burst	% Rot	% Usable	External Color*
King Cole (FM)	213	34.1	5.78	6.3	3.2	96.8	2.0
Roundup (FM)	233	31.5	4.94	0	0	99.7	2.0
Superette (FM)	227	34.7	6.10	0	8.3	95.6	2.0
Titan 90 (FM)	231	35.3	6.44	0	17.6	91.9	2.0
TBR Globe (FM)	229	23.7	4.41	0	20.8	82.4	2.0
Hybrid W (Harris)	213	31.5	5.65	18.3	5.0	96.8	2.0
Sanibel (Harris)	213	30.5	5.22	11.1	4.8	95.2	2.0
Regina (Agway)	231	32.1	5.61	1.5	9.1	89.4	2.7
Rio Verde (NK)	231	33.1	5.52	0	0	97.1	2.0
Green Boy (NK)	229	38.4	6.10	0	4.4	95.6	2.0
NCX-9001 (Niagara)	222	24.9	4.68	14.1	12.9	90.6	1.7

Cultivar	Plant Uniformity*	Plant Size*	Head Shape*	Plant Uprightness*	Mid-Rib*	Tip-Burn*	Core Length (in.)	Polar Dia. (in.)
King Cole	2.0	2.0	2.0	2.0	1.7	0	3.67	7.42
Roundup	1.6	2.0	2.0	2.5	2.0	0	3.18	6.78
Superette	2.0	2.0	2.0	2.3	3.0	0.7	4.42	7.48
Titan 90	2.3	2.7	2.0	2.0	2.0	0	3.82	7.06
TBR Globe	3.0	1.7	2.0	2.7	2.7	0	3.38	7.46
Hybrid W	1.7	2.0	2.0	2.0	1.7	0	3.48	7.04
Sanibel	2.3	1.7	2.0	2.0	1.3	0	3.34	7.34
Regina	1.3	2.3	2.7	2.3	2.0	0	3.92	6.81
Rio Verde	1.3	2.7	2.3	1.0	1.7	0.7	3.36	6.46
Green Boy	1.3	2.0	2.0	1.0	2.0	0.7	3.92	7.17
NCX-9001	3.0	2.3	2.0	2.0	2.0	0	3.67	7.02

* External Color: 1-green, 2-blue-green, 3-blue
Plant Uniformity: 1-good, 2-fair, 3-poor
Plant Size: 1-small, 2-medium, 3-large
Head Shape: 1-pointed, 2-round, 3-flat
Plant Uprightness: 1-upright, 2-slightly tipped, 3-very tipped
Mid-rib: 1-thin, 2-medium, 3-thick
Tip-burn: 0-none, 1-fleck, 2-thin band, 3-severe

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