

Table 1. Early stand, yields, quality and head shape of early (fresh market) cabbage in the Oakes Irrigation Research Site 2002 cabbage hybrid performance trial.

Planting method or hybrid	Seed source	Early stand ¹ 1000s/acre	Days to harvest ----- days -----	Harvest spread ² -----	Number of heads 1000s/acre	Yield tons/acre	Overall score 1 to 10	Head shape ³ 1 to 5	Head size lbs/head
Planting method (averaged over hybrid)									
Bare root transplant		23.3 b ⁴	91 a	17.9	18.1 a	22.9 a	7.8 a	3.4	2.6
Direct seed		30.7 a	109 b	17.5	15.5 b	18.7 b	7.2 b	3.4	2.6
Plug transplant		23.9 b	91 a	16.1	19.6 a	25.0 a	7.9 a	3.4	2.6
Probability		<.0001	<.0001	0.49	0.008	0.006	0.0003	0.58	0.91
Hybrid (averaged over planting method)									
Amtrak	BE	26.8 ab	114 g	24 d	8.1 f	12.5 i	6.9 f	4.7 a	3.2 a
Artost	BE	26.3 ab	86 c	14 ab	21.2 ab	27.1 bcd	8.0 cde	3.0 e	2.5 cd
Bartolo	BE	26.1 abc	115 g	22 cd	12.0 e	15.8 i	7.8 de	4.4 b	2.7 c
Bronco	BE	25.5 bc	101 e	21 cd	18.6 cd	24.9 cde	8.1 bcd	3.4 d	2.7 c
Charmant	SK	27.5 ab	85 bc	14 ab	22.6 a	24.3 def	8.4 ab	3.0 e	2.1 f
Fresco	BE	26.5 ab	96 d	18 bcd	19.6 bcd	30.2 ab	6.8 f	3.0 e	3.1 ab
Gazebo	BE	27.9 a	88 c	14 ab	20.8 abc	23.3 efg	8.3 bc	3.4 d	2.3 ef
General	BE	27.3 ab	81 a	14 ab	21.4 ab	20.6 gh	5.9 h	3.1 e	1.9 g
Histona	BE	20.9 d	83 ab	14 ab	17.8 d	21.2 fgh	6.3 g	3.8 c	2.4 de
Matsumo	BE	27.0 ab	99 de	18 bcd	20.4 abc	30.7 a	8.0 cde	2.0 f	3.0 b
Morris	BE	23.9 c	86 bc	16 abc	20.1 bcd	25.0 cde	7.6 e	3.0 e	2.5 cd
Ramada	BE	26.8 ab	101 e	21 cd	20.5 abc	27.7 abc	8.7 a	3.1 e	2.7 c
Ranchero	BE	26.8 ab	107 f	21 cd	20.9 abc	20.0 h	8.1 bcd	3.0 e	1.9 g
Saratoga	BE	23.8 c	117 g	9 a	4.8 g	7.5 j	8.0 b-e	4.5 ab	3.3 a
Probability		<.0001	<.0001	0.0004	<.0001	<.0001	<.0001	<.0001	<.0001
C.V. (%)		11	4	46	17	18	6	7	10

Note: head size-PM by hybrid interaction: For early maturing cabbage, transplant head bigger; for late maturing cabbage DS bigger.

Overall score - PM by hybrid interaction: Overall score for DS was lower (compared to transplants) with early maturing hybrids.

Stand - interaction due to a few hybrids (Histona, Morris, and Saratoga) that did not have a good stand in DS.

¹Stand before thinning.

²Harvest spread = days between first head ready to harvest until last head in plot ready to harvest.

³Head shape: 1 is very flat; 2 is flat; 3 is round; 4 is tall; 5 is very tall.

⁴Values in the same column followed by the same letter are not significantly different at the 0.05 level.

Table 2. Head characteristics of fresh market cabbage in the Oakes Irrigation Research Site 2002 cabbage hybrid performance trial.

Hybrid	Seed source	Head density ¹	Head width	Head height	Inside color ²	Outside color ³	Core length	Core width	
		1 to 5	----- inches -----	-----	1 to 8	2 to 8	----- inches -----	-----	
Planting method (averaged over hybrid)									
	Bare root transplant	4.3 a ⁴	5.7	6.2	1.6 b	2.8	3.3	1.20	
	Direct seed	3.8 b	5.8	6.2	1.7 a	2.8	3.4	1.21	
	Plug transplant	4.3 a	5.7	6.2	1.6 b	2.7	3.3	1.18	
	Probability	<.0001	0.38	0.88	0.007	0.16	0.08	0.06	
Hybrid (averaged over planting method)									
	Amtrak	BE	4.3 de	5.7 d	7.6 a	1.0 f	2.1 h	4.6 h	1.40 g
	Artost	BE	4.1 ef	5.9 b	5.9 fg	1.2 de	2.3 efg	3.2 cd	1.16 de
	Bartolo	BE	4.8 ab	5.3 ef	7.0 c	1.0 f	2.1 gh	4.2 g	1.25 f
	Bronco	BE	4.8 ab	5.7 cd	6.3 e	1.0 f	2.2 gh	3.5 e	1.28 f
	Charmant	SK	4.3 de	5.5 de	5.5 h	1.1 ef	3.0 b	3.2 cd	1.15 de
	Fresco	BE	3.1 g	6.5 a	6.5 d	1.4 c	2.3 fgh	3.6 e	1.15 de
	Gazebo	BE	4.7 bc	5.4 e	6.0 f	1.1 ef	2.7 c	2.7 ab	1.19 e
	General	BE	2.3 i	5.6 d	5.8 g	1.7 b	2.6 cd	3.1 cd	1.08 bc
	Histona	BE	2.8 h	5.5 de	6.4 de	1.7 b	2.4 def	3.1 cd	1.05 ab
	Matsumo	BE	4.4 cd	6.5 a	5.3 i	1.0 f	2.2 gh	2.6 a	1.13 cd
	Morris	BE	3.9 f	5.9 bc	5.9 fg	1.2 cd	2.4 de	3.3 d	1.17 de
	Ramada	BE	5.0 a	5.7 d	6.1 f	1.0 f	2.2 gh	3.1 c	1.29 f
	Ranchero	BE	4.8 ab	5.1 f	5.2 i	7.4 a	8.0 a	2.8 b	1.00 a
	Saratoga	BE	4.9 ab	5.5 de	7.2 b	1.0 f	2.2 gh	4.0 f	1.43 g
	Probability	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
	C.V. (%)	8	5	4	11	8	7	5	

¹Visual estimate of head density: 1 is low, 5 is high.

²Inside head color: 1 is whitish green; 2 is yellow green; 3-5 is light to dark green; 6-8 light to dark purple.

³Outside head color: 2-4 is light to dark green; 8 is purple.

⁴Values in the same column followed by the same letter are not significantly different at the 0.05 level.

Table 3. Late (slaw market) harvest data for the Oakes Irrigation Research Site 2002 cabbage hybrid performance trial.

Planting method or hybrid	Seed source	Early stand ¹	Days to Harvest	Number of heads	Yield	Overall score	Head shape ²	Head size
		1000s/A		1000s/A	tons/A	1 to 10	1 to 5	lbs/head
Planting method (averaged over hybrid)								
Bare root transplant		23.0 b ³	102 a	16.7 b	30.0 ab	7.7 b	2.9	3.7
Direct seed		29.5 a	121 b	15.2 b	27.5 b	7.5 b	3.0	3.7
Plug transplant		23.8 b	100 a	18.9 a	32.8 a	8.1 a	2.9	3.6
Probability		0.0006	<.0001	0.005	0.017	0.02	0.23	0.84
Hybrid (averaged over planting method)								
Amtrak	BE	25.9 ab	—	3.3 d	4.9 g	—	—	—
Artost	BE	27.8 a	103 c	20.6 a	38.2 bc	8.0 bc	3.0 bc	3.7 bcd
Bartolo	BE	25.6 abc	—	9.0 c	14.0 f	—	—	—
Bronco	BE	26.2 ab	119 f	19.9 ab	37.6 bc	8.5 ab	3.0 bc	3.8 bc
Charmant	SK	27.9 a	99 b	21.8 a	32.5 d	8.5 ab	3.0 bc	3.0 f
Fresco	BE	23.9 bcd	112 d	17.5 b	43.9 a	7.6 c	3.0 bc	5.0 a
Gazebo	BE	26.5 ab	104 c	22.1 a	36.7 bcd	8.8 a	3.1 b	3.3 def
General	BE	25.3 a-d	95 a	20.9 a	34.1 cd	6.2 d	2.7 d	3.2 ef
Histona	BE	24.3 bcd	98 ab	19.3 ab	39.5 ab	5.9 d	3.7 a	4.1 b
Matsumo	BE	26.2 ab	114 de	20.4 ab	39.8 ab	8.0 bc	2.0 e	3.9 bc
Morris	BE	22.8 cd	101 bc	20.4 ab	35.1 bcd	7.7 c	2.9 c	3.6 cde
Ramada	BE	25.3 a-d	118 ef	20.6 a	38.3 bc	8.8 a	3.0 bc	3.8 bc
Ranchero	BE	25.6 abc	121 f	19.4 ab	25.0 e	7.6 c	3.0 bc	2.6 g
Saratoga	BE	22.6 d	—	1.7 d	1.7 g	—	—	—
Probability		0.013	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
C.V. (%)		14	4	21	20	11	7	13

Notes: Most hybrid yields were equal for any planting method, except for late maturing (Amtrak, Bartolo, Saratoga) cabbage, and for Artost, Bronco, and Fresco, which did better transplanted than direct seeded.

Fresco, Morris, and Saratoga had poor stands with direct seed. Number of heads less for some hybrids with direct seed due to lower stands and late harvests.

¹Stand before thinning.

²Head shape: 1 is very flat; is flat; 3 is round; 4 is tall; 5 is very tall.

³Values in the same column followed by the same letter are not significantly different at the 0.05 level.

