2004
NATIONAL WINTER CANOLA VARIETY TRIAL

Report of Progress 937
Kansas State University Agricultural Experiment Station and Cooperative Extension Service

CONTENTS

Contribution no. 05-251-S from the Kansas Agricultural Experiment Station.

2004 National Winter Canola Variety Trial

INTRODUCTION

Canola is a specific crop developed from rapeseed. Canola also has been called double-zero rapeseed because of the low contents of erucic acid (less than 2 percent in the oil) and glucosinolates (less than 30 micromoles per gram in the oil-free meal). Food- and oil-processing industries have a great interest in canola because it produces a high-quality oil that is lower in saturated fat than other sources of dietary fats. The meal remaining after oil extraction is used as a protein supplement by the livestock industry.

Production of rapeseed was first reported in Europe in the 13th century, but it probably has been cultivated in Asia for thousands of years. It has long been used in Asia for cooking oil, but it was used originally in Europe as a source of lamp oil and as a lubricant. During World War II, Canada grew millions of acres to provide a marine lubricant, but production declined as diesel replaced steam engines.

The first oilseed rape with low levels of erucic acid in the oil was developed in Canada in 1957. Interest in rapeseed increased, and Canadian production reached 1 million acres in 1965. In 1971, 'Span', the first low erucic acid variety, was released. Three years later, 'Tower' was released. It is low in both erucic acid and glucosinolates and became the first true canola variety. The term canola was trademarked by the Western Canadian Oilseed Crushers Association in 1978 and still is used to describe rapeseed that is genetically low in erucic acid and glucosinolates. In 1985, the Food and Drug Administration in the United States ruled that rapeseed oil with less than 2 percent erucic acid is safe for human consumption. One year later, the American Heart Association urged Americans to reduce their saturated fat intake. Canola oil contains 6 percent saturated fat, the lowest level of any commercially available vegetable oil.

Canola oil consumption increased from zero before 1986 to the equivalent of more than 2 million acres of production in 1994. This represented an increase in consumption of 50% since 1992. Most of this oil was imported from Canada. Canola is one of the few new crops that possessed a substantial market before its production was established. United States canola production has maintained about 1 million acres for the past few years. Most of this production is from spring types in the northern Great Plains states of North Dakota, Montana, and Minnesota. Over the past few years, interest in winter cultivars also has increased in areas where production is feasible, especially the Pacific Northwest, southern Great Plains, and the Southeast. A crushing facility at Velva, ND, has been crushing canola for several years. Colorado Mills, Lamar, CO, began crushing canola and other oilseeds in 1999, and has been the delivery point for the southern Great Plains crop since that time. Several oilseed crushers in the Southeast and Great Plains are capable of crushing canola and will crush the crop when sufficient quantities become available.

Canola-quality seed has been developed in three *Brassica* species. *Brassica napus*, also called Argentine rape, summer rape, winter rape, or Swede rape, was the first and is the most common canola grown. *Brassica rapa*, also called *B. campestris*, Polish rape, summer turnip rape, or field mustard, has many canola-quality cultivars and is grown on a large acreage where it is adapted. *Brassica juncea* (brown mustard) lines with canola quality have been developed, and commercial production of

these is just beginning. All *B. juncea* lines are spring types. Most winter canola varieties grown in the United States have been developed from *B. napus.*

Winter canola yields are generally 30% greater than yields of the spring types. Winter canola is planted in late summer. The plants need to reach the 6 to 8 true-leaf stage and about 8 to 10 inches in height to increase winter survival before freeze down. Plants overwinter as rosettes and bolt early the next spring. Harvest takes place about the same time as winter wheat harvest in a given area.

Canola research began in the United States in the late 1980s. Industrial rapeseed had been investigated before this but, because of the limited demand for this product, interest was low. Winter canola production was attempted in many parts of the United States in the late 1980s but was not successful. The failure was primarily because of the lack of adapted varieties, the lack of management recommendations for the areas, and the lack of a local market for the crop. Since that time, canola-quality lines have been developed that are significant improvements over previously tested varieties. Advancements in production research have led to management recommendations consistent with the conditions of the various regions. Increased oil consumption has led to increased demand for canola seed and a market interest by oil processors.

Canola production would fit well into Great Plains agriculture. Canola makes an excellent rotational crop with winter wheat. Yields of wheat following canola are reported to be 8 to 12% better than yields of wheat following wheat. Because canola is a broadleaf crop, more effective and less expensive herbicides can be used to control grass weeds. No major diseases are common between the two crops, so canola can help break some disease cycles. Canola also is produced with the same equipment used for small grains. A major investment in equipment is not needed to try a small acreage of canola. Because canola is an oilseed, its commodity price is not tied to that of grains, and it can be used to help spread economic risk to more than one commodity class.

2004 NATIONAL WINTER CANOLA VARIETY TRIAL

Objectives

The objectives of these tests are to evaluate germplasm over a wide range of environments, determine what canola varieties and experimental lines are adapted to what areas, and to increase the visibility of winter canola across the regions. The National Winter Canola Variety Trial (NWCVT) has been coordinated from Kansas State University since the 1994-95 growing season. The NWCVT was established to evaluate released cultivars and material that had been selected and advanced and has potential to become new released canola varieties. Information obtained from these tests will help determine what experimental lines should be released and where released cultivars might be marketed. Over the past few years, this nursery has expanded the number of environments and now has locations in the Great Plains, Midwest, and Southeast. The wide diversity in environments has increased our knowledge and understanding of winter rapeseed germplasm for use in the eastern half of the United States.

Procedures

The NWCVT was distributed to 41 locations in 21 states during the fall of 2003. This test included 15 released varieties and 22 experimental lines, from five different breeding programs, including, for the first time, eight Round-up Ready® lines.

Management guidelines were supplied to each cooperator, but past experience at that locality was used for final management decisions. Local management, site descriptions, and growing conditions can be found on the

page for each location established. All tests were planted in small plots (approximately 100 square feet) and replicated three times. The University of Idaho, Moscow, ID, performed analysis for total-oil results. Results for yield and winter survival at most locations also include 2-year and 3-year summaries. Lines are listed in order, from highest to lowest yields for 2004. This test was continued in 2004-2005 and includes 21 experimental lines and 15 released cultivars from five different breeding programs. It was distributed to 46 locations in 21 states.

2003-2004 Growing Conditions

Temperature and precipitation data are plotted at the bottom of the site-description page for each location. On the temperature graph, the thick black line represents the long-term average daily temperatures (^{o}F) for that location. The upper line represents the actual daily high temperatures, and the lower thin line represents the actual daily low temperatures over the 2003-04 growing season. On the precipitation graph, the thick black line represents the long-term average precipitation, and the dashed line represents the actual precipitation over the growing season. In general, the 2003-04 growing season was dry in the fall and wetter in the spring, but most locations were able to establish. Winter conditions were mild in some locations and colder in others, especially where differential winterkill was observed. Early summer temperatures were cooler than normal.

Test Locations

Of the 41 tests distributed in 2003, 20 locations were either lost due to the winter or abandoned before harvest due to wet field conditions or poor survival. Twenty-one locations in 14 states were harvested (Meridianville, AL; Mariana, AR; Griffin, GA; Bellville and Carbondale, IL; Columbia City, IN; Colby, Hutchinson, and Parsons, KS; East Lansing, MI; Columbia, MO; Lincoln and Sidney, NE; Custar and Fremont, OH; Goodwell, OK; Chillicothe, TX; Orange, Petersburg, and Suffolk, VA; and Torrington, WY).

Results

Yields on average improved by 200 lb/a in 2004. Eleven of the 21 locations included at least one line with yields greater than 3000 lb/a. Fifteen of the 21 locations included at least one line with yields greater than 2000 lbs/a. ‘Banjo’ (2490 lb/a), VSX-1-exp (2467 lb/a), ‘Titan’ (2396 lb/a), ‘Wichita’ (2384 lb/a), ‘Kronos’ (2341 lb/a) and ‘Jetton’ (2341 lb/a) all yielded well at a variety of locations, but many other lines have consistently performed well in specific regions where they are best adapted. Winter hardiness continues to be an important trait to consider when selecting a winter canola cultivar.

Winter hardiness has been improved over the past several years, but variability still exists for this trait in available cultivars. Although only one line, Wichita, averaged the highest winter survival of 88%, 7 other lines ‘Abilene,’ Banjo, KS8367-exp, KS9124-exp, KS9135-exp, KS9183-exp, and ‘Plainsman,’ all had average survival of 80% or greater at the locations where differential winterkill was observed in 2004.

ACKNOWLEDGMENTS

This work was funded in part by the National Canola Research Program, United States Department of Agriculture, Cooperative States Research Program and the Kansas Agricultural Experiment Station. Student workers Doug Miller and Jennifer Benke assisted with the planting, care, harvest, and data preparation for some of these tests.

MERIDIANVILLE, AL

COOPERATORS: U. Bishnoi and E. Cebert, Alabama A&M University

PREVIOUS CROP: Corn
PLANTING DATE: October 7, 2003
HARVEST DATE: June 15, 2004

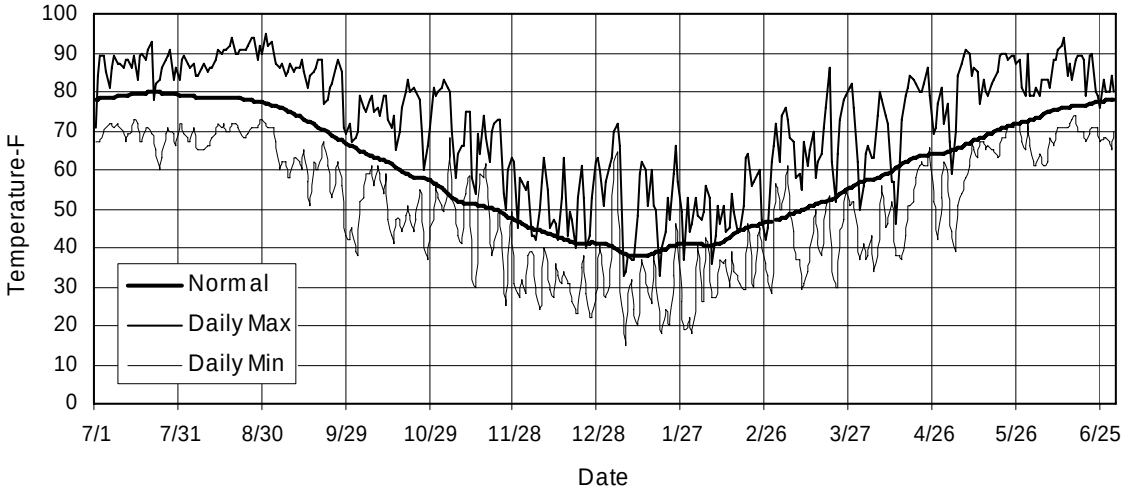
PESTICIDES:
Trifluralin, 2 qt/a (herbicide)

SOIL TEST:
P= medium; K= high; pH= 5.9

FERTILIZATION
Fall: 30–30–30
Spring: 100–0–0

SEEDING RATE: 5.2 lb/a
ROW SPACING: 7.5 in
IRRIGATION: none
SOIL TYPE: Decatur silty clay loam

ELEVATION: 624 ft
LATITUDE: 34° 35' N
AVG. WINTER SURVIVAL: 100%
AVERAGE YIELD: 2575 lb/a



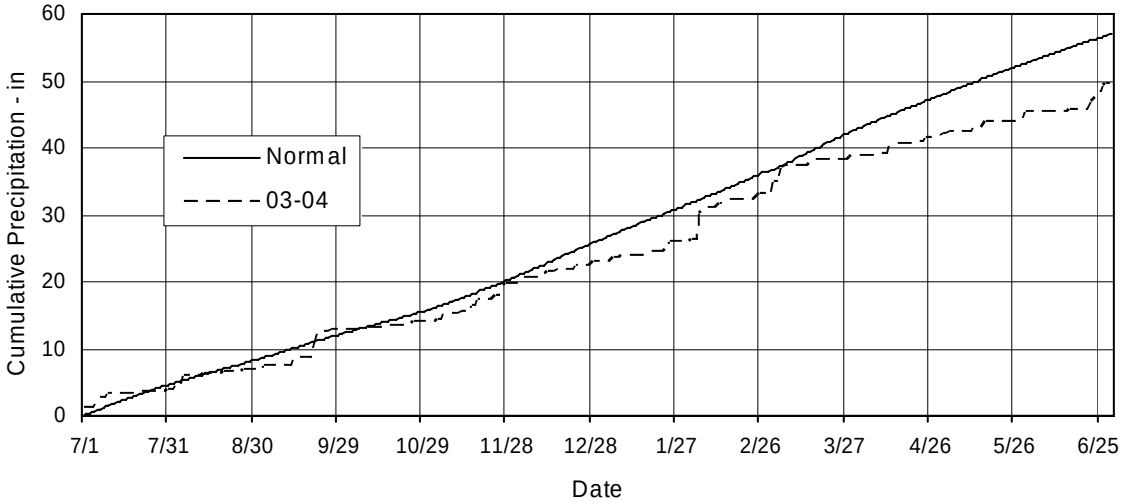


Table 1. Results from the 2004 National Winter Canola Variety Trial, Meridianville, AL.

Line	Yield			Winter Survival			Fall	50%	Matur-	Plant	Lodg-	Shat-	Test	Total
	2004	2yr 1/	3yr 2/	2004	2yr 1/	3yr 2/	Stand	Bloom 3/	ity 3/	Height 4/	ing	tering	Weight	Oil
	lb/ac			%			%	date	date	in.	%	%	lb/bu	%
Rasmus	3376 *	----	----	100	----	----	100	3/21 e	5/29	49 s	1 *	0	62.7	40.5
VSX-1	3223 *	2273 *	1976 *	100	100	100	100	3/25 e	5/30	50	1 *	0	64.7 *	39.9
Viking	3116 *	----	----	100	----	----	100	3/25 e	5/30	47 s	18 *	0	65.3 *	40.0
Jetton	3101 *	2310 *	2163 *	100	100	100	100	3/25 e	6/1	49 s	10 *	0	64.3 *	39.5
Titan	2992 *	----	----	100	----	----	100	3/25 e	5/31	51	4 *	0	64.7 *	41.7 *
Banjo	2989 *	2127 *	2071 *	100	100	100	100	3/27 e	5/30	52	37	0	64.3 *	40.4
VSX-2	2963 *	----	----	100	----	----	100	3/25 e	5/31	50 s	0 *	0	63.3	39.7
KS9135	2908 *	----	----	100	----	----	100	3/28 l	5/30	50	1 *	0	64.0 *	40.2
Kronos	2770	----	----	100	----	----	100	3/29 l	6/1	54	45	0	64.7 *	40.5
Wichita	2761	1925 *	1853	100	100	100	100	4/2 l	5/30	53	1 *	0	65.0 *	40.5
KS9124	2651	----	----	100	----	----	100	4/2 l	6/1	50	1 *	0	64.3 *	40.2
ARC90016-PR377	2599	2091 *	----	100	100	----	100	3/25 e	5/29	54	26	0	64.7 *	40.5
Plainsman	2513	1782	1579	100	100	100	100	3/23 e	6/3 l	55 t	2 *	0	63.3	38.8
KS8367	2462	1820	----	100	100	----	100	3/25 e	6/2 l	54	4 *	0	64.0 *	40.6
Casino	2453	1742	1666	100	100	100	100	4/2 l	6/1	52	0 *	0	65.0 *	40.5
ARC91019-50-E2	2446	1726	----	100	100	----	100	3/25 e	5/30	52	6 *	0	63.3	40.7
Talent	2438	----	----	100	----	----	100	3/22 e	5/30	52	0 *	1	65.3 *	40.7
Wotan	2417	----	----	100	----	----	100	4/3 l	5/29	52	15 *	1	65.7 *	40.9 *
Abilene	2385	1861	1908 *	100	100	100	100	3/28 l	5/29	52	5 *	0	64.7 *	39.5
KS7436	2267	1553	1527	100	100	100	100	3/28 l	6/1	53	20	0	64.0 *	40.4
Maestro	2234	----	----	100	----	----	100	3/25 e	5/30	53	22	0	65.0 *	41.1 *
KS9183	2181	----	----	100	----	----	100	3/29 l	5/30	51	6 *	1	64.3 *	39.8
ARC92004-1	2110	----	----	100	----	----	100	3/28 l	6/2 l	57 t	12 *	0	64.3 *	41.3 *
Ceres	1998	1462	1508	100	100	100	100	4/2 l	5/30	52	1 *	0	65.3 *	40.2
ARC92007-2	1981	----	----	100	----	----	100	3/25 e	6/2 l	54	7 *	0	63.7	40.3
KS2427	1609	----	----	100	----	----	100	4/2 l	6/4 l	52	2 *	0	62.0	37.8
Mean	2575	1852	1711	100	100	99	100	3/27	5/31	52	10	0	64.3	40.3
LSD (.05)	483	415	307	NS	NS	NS	NS	6	3	3	19	NS	1.6	0.8
CV (%)	11.4	23.6	21.8	----	----	----	----	4.2	1.0	3.1	124.4	450.7	1.5	1.0

* Upper LSD group - Differences among those marked with an asterisk are not statistically significant.

1/ 2yr means include data from 2003 and 2004.

2/ 3yr means include data from 2002, 2003, and 2004.

3/ Values marked "e" are not statistically different from the earliest value; those marked "l" are not statistically different from the latest.

4/ Values marked "s" are not statistically different from the shortest value; those marked "t" are not statistically different from the tallest.

MARIANNA, AR

COOPERATORS: Robert Bacon and John Kelly, University of Arkansas

PREVIOUS CROP: fallow
PLANTING DATE: September 30, 2003
HARVEST DATE: June 10, 2004

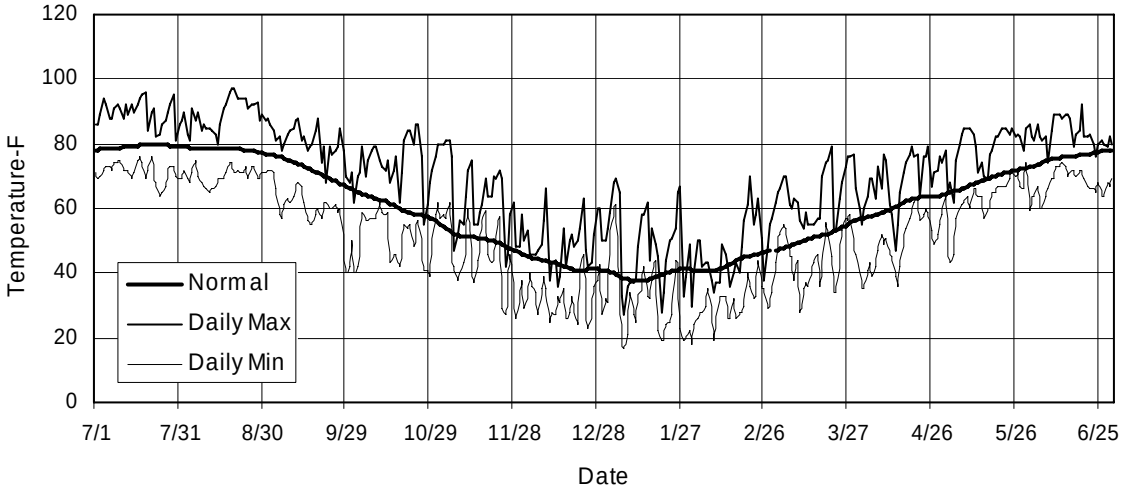
PESTICIDES:
Treflan, 1 pt/a (herbicide)

SOIL TEST
not available

FERTILIZATION
Fall: 0–0–0
Spring: 150–0–0 on March 1

SEEDING RATE: 7 lb/a
ROW SPACING: 7 in
IRRIGATION: none
SOIL TYPE: Loving silt loam

ELEVATION: 234 ft
LATITUDE: 34° 45' N
AVG. WINTER SURVIVAL: 100%
AVERAGE YIELD: 3654 lb/a



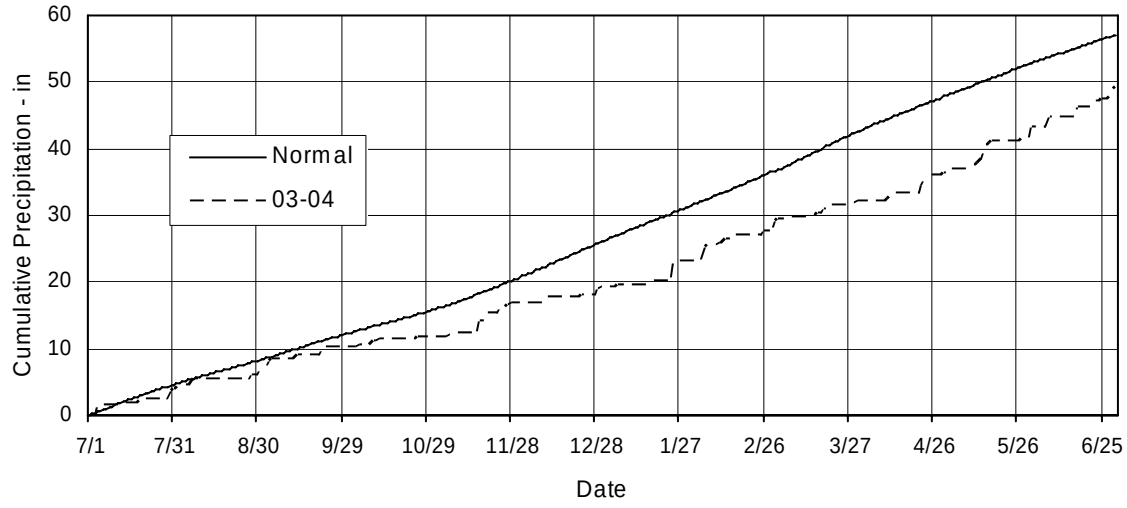


Table 2. Results from the 2004 National Winter Canola Variety Trial, Marianna, AR.

Line	Yield			Winter Survival			Fall	50%	Matur-	Plant	Lodg-	Shat-	Test	Total
	2004	2yr 1/	3yr 2/	2004	2yr 1/	3yr 2/	Stand	Bloom 3/	ity 3/	Height 4/	ing	tering	Weight	Oil
	lb/ac			%			%	date	date	in.	%	%	lb/bu	%
Talent	4793 *	----	----	100	----	----	----	3/23 e	----	----	----	----	50.3	41.2
Rasmus	4603 *	----	----	100	----	----	----	3/23 e	----	----	----	----	48.7	40.4 *
Jetton	4590 *	3555 *	3310 *	100	100	100	----	3/23 e	----	----	----	----	49.9	40.2 *
VSX-2	4515 *	----	----	100	----	----	----	3/23 e	----	----	----	----	51.0 *	40.6 *
VSX-1	4383 *	3477 *	3285 *	100	100	100	----	3/26	----	----	----	----	50.8 *	40.3 *
Viking	4345 *	----	----	100	----	----	----	3/22 e	----	----	----	----	51.4 *	40.5 *
ARC92007-2	4255 *	----	----	100	----	----	----	3/25	----	----	----	----	51.5 *	40.5 *
ARC90016-PR377	4156 *	3266 *	----	100	100	----	----	3/24 e	----	----	----	----	50.5 *	40.9 *
Titan	4108 *	----	----	100	----	----	----	3/26	----	----	----	----	50.4	40.4 *
Banjo	4049 *	3347 *	3265 *	100	100	100	----	3/25	----	----	----	----	52.3 *	40.4 *
Ceres	3952 *	2914	3066 *	100	100	100	----	3/25	----	----	----	----	51.8 *	40.6 *
ARC91019-50-E2	3935 *	3155 *	----	100	100	----	----	3/25	----	----	----	----	50.9 *	40.8 *
KS7436	3882 *	2930	3234 *	100	100	100	----	3/25	----	----	----	----	51.8 *	40.6 *
Kronos	3880 *	----	----	100	----	----	----	3/27	----	----	----	----	52.1 *	40.1 *
ARC92004-1	3831 *	----	----	100	----	----	----	3/25	----	----	----	----	50.4	40.4 *
SW 013062	3814 *	----	----	100	----	----	----	3/28	----	----	----	----	50.8 *	39.7 *
KS9135	3810 *	----	----	100	----	----	----	3/28	----	----	----	----	50.4	40.5 *
Wichita	3764	3115 *	3160 *	100	100	100	----	3/26	----	----	----	----	51.6 *	40.2 *
KS9183	3631	----	----	100	----	----	----	3/23 e	----	----	----	----	50.6 *	39.8 *
SW 013253	3620	----	----	100	----	----	----	3/29	----	----	----	----	50.8 *	39.9 *
SW 013022	3613	----	----	100	----	----	----	3/27	----	----	----	----	50.5 *	40.5 *
SW 013173	3484	----	----	100	----	----	----	3/31 l	----	----	----	----	50.0	38.9
Maestro	3403	----	----	100	----	----	----	3/23 e	----	----	----	----	51.9 *	41.1 *
Plainsman	3382	2692	2791	100	100	100	----	4/1 l	----	----	----	----	49.9	39.2 *
Casino	3265	2768	2862 *	100	100	100	----	3/27	----	----	----	----	51.1 *	38.8
SW 013186	3200	----	----	100	----	----	----	3/24 e	----	----	----	----	52.0 *	40.2 *
SW 013211	3144	----	----	100	----	----	----	3/28	----	----	----	----	51.5 *	37.8
KS9124	3086	----	----	100	----	----	----	3/28	----	----	----	----	51.4 *	38.6
KS8367	2906	2415	----	100	100	----	----	3/26	----	----	----	----	50.5 *	39.5 *
Abilene	2823	2498	2735	100	100	100	----	3/26	----	----	----	----	50.1	38.7
SW 013121	2700	----	----	100	----	----	----	4/1 l	----	----	----	----	52.0 *	37.4
KS2427	2695	----	----	100	----	----	----	3/30	----	----	----	----	49.0	37.7
SW 013154	2353	----	----	100	----	----	----	3/31 l	----	----	----	----	51.1 *	37.4
Wotan	2254	----	----	100	----	----	----	3/31 l	----	----	----	----	51.7 *	39.7 *
Mean	3654	2919	2947	100	100	100	----	3/26	----	----	----	----	50.9	39.8
LSD (.05)	1005	548	446	----	NS	NS	----	2.5	----	----	----	----	1.8	1.9
CV (%)	16.8	14.7	15.2	----	----	----	----	1.8	----	----	----	----	2.2	2.36

* Upper LSD group - Differences among those marked with an asterisk are not statistically significant.

1/ 2yr means include data from 2003 and 2004.

2/ 3yr means include data from 2002, 2003, and 2004.

3/ Values marked "e" are not statistically different from the earliest value; those marked "l" are not statistically different from the latest.

4/ Values marked "s" are not statistically different from the shortest value; those marked "t" are not statistically different from the tallest.

GRIFFIN, GA

COOPERATORS: Paul Raymer and Paul Rose, University of Georgia

PREVIOUS CROP: wheat
PLANTING DATE: October 1, 2003
HARVEST DATE: June 4, 2004

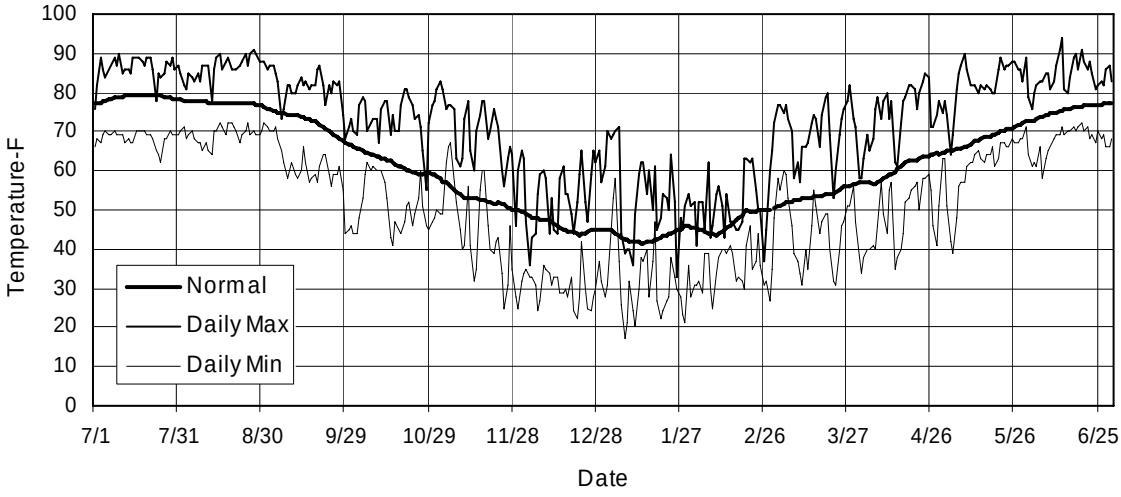
PESTICIDES:
Treflan, Poast (herbicides)

SOIL TEST:
P = medium; K = high; pH = 6.4

FERTILIZATION
Fall: 49–98–147
Spring: 120–0–0

SEEDING RATE: 5 lb/a
ROW SPACING: 7 in
IRRIGATION: none
SOIL TYPE: Cecil clay loam

ELEVATION: 924 ft
LATITUDE: 33° 16' N
AVG. WINTER SURVIVAL: 100%
AVERAGE YIELD: 1552 lb/a



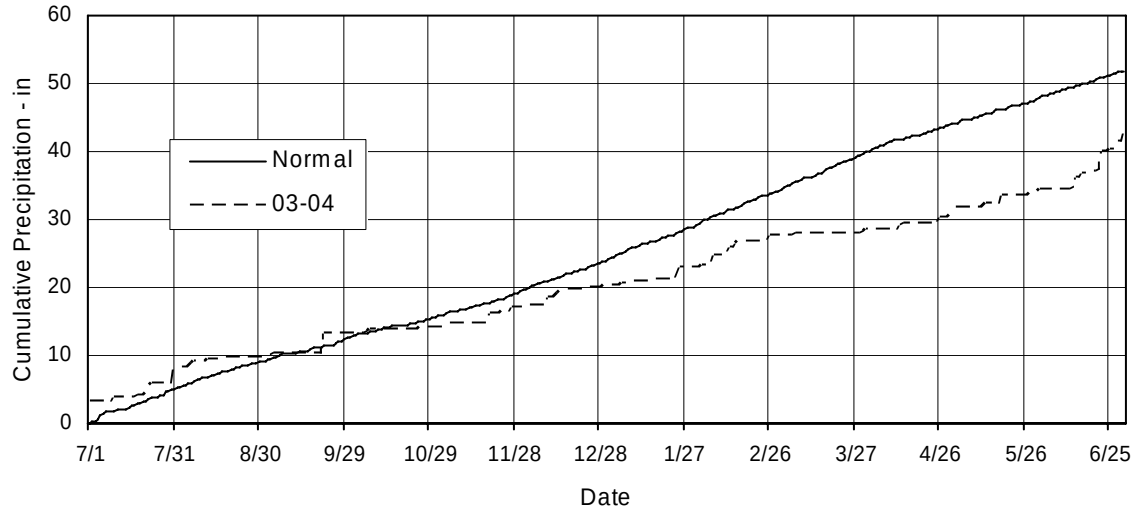


Table 3. Results from the 2004 National Winter Canola Variety Trial, Griffin, GA.

Line	Yield			Winter Survival			Fall	50%	Matur-	Plant	Lodg-	Shat-	Test	Total
	2004	2yr 1/	3yr 2/	2004	2yr 1/	3yr 2/	Stand	Bloom 3/	ity 3/	Height 4/	ing	tering	Weight	Oil
	lb/ac			%			%	date	date	in.	%	%	lb/bu	%
Maestro	2319 *	----	----	100	----	----	----	3/24	5/28	44	0	0	----	41.7 *
SW 013062	2182 *	----	----	100	----	----	----	3/31	5/30	45	0	0	----	40.9 *
Kronos	2035 *	----	----	100	----	----	----	3/28	5/30	43	0	0	----	41.8 *
Titan	1982	----	----	100	----	----	----	3/26	5/29	45	0	0	----	42.9 *
SW 013211	1838	----	----	100	----	----	----	3/27	5/28	49	0	0	----	39.9 *
VSX-2	1838	----	----	100	----	----	----	3/25	5/29	39	0	0	----	41.2 *
VSX-1	1789	----	----	100	----	----	----	3/24	5/27	34	0	0	----	39.8 *
Viking	1774	----	----	100	----	----	----	3/25	5/28	37	0	0	----	41.3 *
Wichita	1771	1806 *	1488	100	100	100	----	3/26	5/28	41	0	0	----	39.9 *
ARC90016-PR377	1753	1728 *	----	100	100	----	----	3/24	5/29	45	0	0	----	42.2 *
Banjo	1725	1900 *	1722 *	100	100	100	----	3/28	5/29	33	0	0	----	41.4 *
Jetton	1709	1770 *	1391	100	100	100	----	3/25	5/28	37	0	0	----	39.2
Talent	1669	----	----	100	----	----	----	3/23	5/28	43	0	0	----	42.4 *
Wotan	1661	----	----	100	----	----	----	4/1	6/2	44	0	0	----	41.1 *
SW 013186	1658	----	----	100	----	----	----	3/24	5/29	37	0	0	----	41.8 *
SW 013253	1594	----	----	100	----	----	----	4/1	5/30	41	0	0	----	41.2 *
ARC92004-1	1572	----	----	100	----	----	----	3/25	5/30	43	0	0	----	41.6 *
Rasmus	1557	----	----	100	----	----	----	3/25	5/28	37	0	0	----	41.9 *
SW 013121	1542	----	----	100	----	----	----	4/3	5/31	42	0	0	----	39.6
Ceres	1528	1385	1189	100	100	100	----	3/28	5/28	41	0	0	----	41.1 *
KS8367	1470	1464	----	100	100	----	----	3/25	5/30	40	0	0	----	40.7 *
SW 013154	1442	----	----	100	----	----	----	3/23	5/29	44	0	0	----	39.7
ARC92007-2	1434	----	----	100	----	----	----	3/25	5/30	40	0	0	----	41.7 *
SW 013173	1423	----	----	100	----	----	----	4/1	5/28	41	0	0	----	40.0 *
Casino	1400	1345	1216	100	100	100	----	3/29	6/1	41	0	0	----	40.1 *
ARC91019-50-E2	1388	1395	----	100	100	----	----	3/24	5/29	41	0	0	----	41.3 *
Abilene	1350	1489	1332	100	100	100	----	3/25	5/29	38	0	0	----	40.2 *
KS7436	1341	1624	1454	100	100	100	----	3/26	5/29	42	0	0	----	40.6 *
SW 013022	1285	----	----	100	----	----	----	3/28	5/28	39	0	0	----	40.5 *
KS9124	1254	----	----	100	----	----	----	3/27	5/30	40	0	0	----	39.9 *
KS9183	1211	----	----	100	----	----	----	3/26	5/29	38	0	0	----	38.3
KS9135	1069	----	----	100	----	----	----	3/29	5/30	41	0	0	----	36.9
KS2427	630	----	----	100	----	----	----	3/29	5/31	39	0	0	----	37.8
Plainsman	571	1061	970	100	100	100	----	4/3	6/2	37	0	0	----	39.3
Mean	1552	1600	1404	100	100	100	----	3/27	5/29	41	0	0	----	40.6
LSD (.10)	332	238	183	NS	NS	NS	----	5	11	5	0	0	----	3.1
CV (%)	----	----	----	----	----	----	----	----	----	----	----	----	----	----

* Upper LSD group - Differences among those marked with an asterisk are not statistically significant.

1/ 2yr means include data from 2003 and 2004.

2/ 3yr means include data from 2002, 2003, and 2004.

3/ Values marked "e" are not statistically different from the earliest value; those marked "l" are not statistically different from the latest.

4/ Values marked "s" are not statistically different from the shortest value; those marked "t" are not statistically different from the tallest.

ORANGE, VA

COOPERATOR: David Starner,
N. Piedmont AREC, Virginia Tech

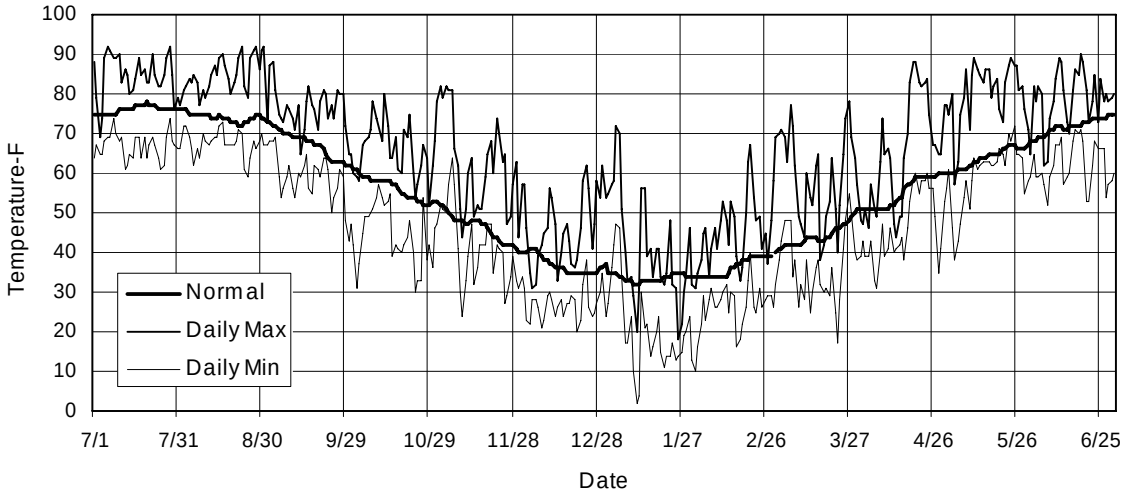
PREVIOUS CROP: small grain
PLANTING DATE: October 7, 2003
HARVEST DATE: June 21, 2004

PESTICIDES:
Treflan, 1 qt/a, Oct. 3 (herbicide)

SOIL TEST:
P = 18 ppm; K = 149 ppm; pH = 6.9

FERTILIZATION
Fall: 25–50–50–15(S) on Oct 3
Spring: 60–0–0 on March

SEEDING RATE: 5 lb/a
ROW SPACING: 7 in
IRRIGATION: none
SOIL TYPE: Davidson clay loam
ELEVATION: 520 ft
LATITUDE: 38° 13' N
AVG. WINTER SURVIVAL: 54%
AVERAGE YIELD: 2322 lb/a
COMMENTS: Birds took up to 20% of all varieties. Rep. 3 was mostly on clay soil, which affected winter survival.



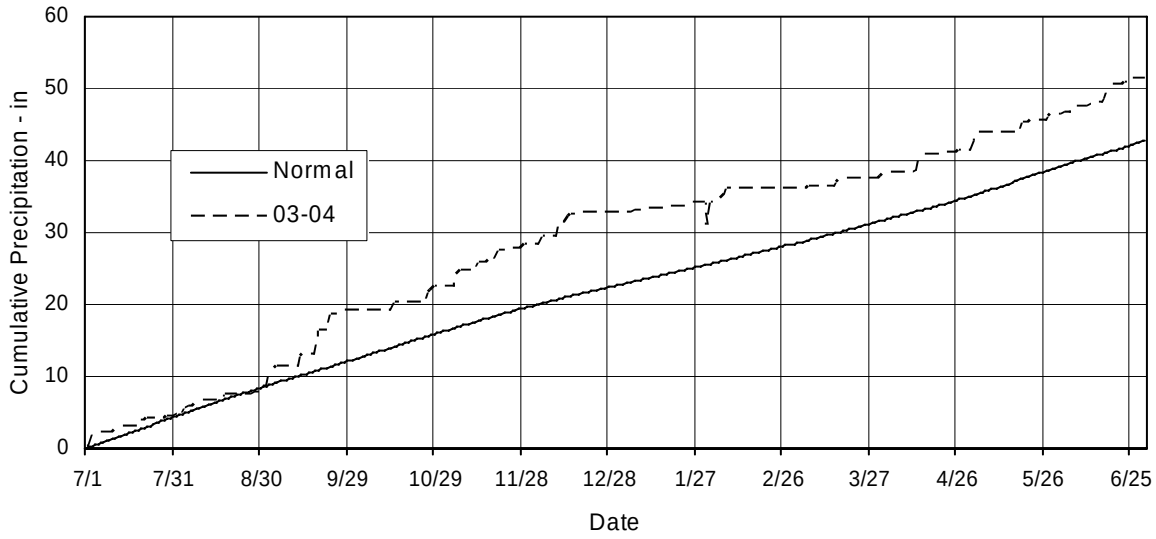


Table 4. Results from the 2004 National Winter Canola Variety Trial, Orange, VA.

Line	Yield 2004	Yield 2yr 1/	Yield 3yr 2/	Winter Survival 2004	Winter Survival 2yr 1/	Winter Survival 3yr 2/	Fall Stand	50% Bloom 3/	Maturity 3/	Plant Height 4/	Lodging	Shattering	Test Weight	Total Oil
	lb/ac	lb/ac	lb/ac	%	%	%	%	date	date	in.	%	%	lb/bu	%
Banjo	3596 *	3591 *	3553 *	60 *	80 *	87 *	67 *	4/16 e	6/11 e	59	0 *	----	51.1 *	38.0 *
Titan	3173 *	----	----	63 *	----	----	43	4/17	6/14	56	0 *	----	49.9	39.1 *
Kronos	3141 *	----	----	67 *	----	----	42	4/18	6/12	56	3 *	----	51.6 *	36.9
Jetton	3116 *	2969	2995	73 *	85 *	90 *	70 *	4/16 e	6/13	53 s	0 *	----	51.1 *	38.1 *
Wichita	3021 *	2957	2083	70 *	83 *	88 *	72 *	4/17	6/11 e	51 s	0 *	----	51.2 *	38.4 *
KS7436	2862 *	2845	2623	68 *	84 *	89 *	48	4/16 e	6/13	54	0 *	----	51.1 *	39.3 *
KS9124	2841 *	----	----	60 *	----	----	60 *	4/19	6/14	52 s	0 *	----	50.9 *	38.0 *
KS9135	2809 *	----	----	67 *	----	----	65 *	4/18	6/14	55	0 *	----	51.1 *	38.8 *
Talent	2808 *	----	----	80 *	----	----	33	4/17 e	6/13	54	0 *	----	50.8 *	38.2 *
Abilene	2755 *	2646	2591	50	64	76	47	4/17	6/11 e	50 s	0 *	----	50.9 *	37.8
KS8367	2722 *	2634	----	52	75 *	----	50	4/18	6/15	53 s	0 *	----	50.6 *	37.8
Rasmus	2671 *	----	----	53	----	----	62 *	4/15 e	6/14	51 s	7 *	----	49.2	38.5 *
Maestro	2646 *	----	----	70 *	----	----	38	4/15 e	6/12 e	54	13 *	----	51.5 *	38.6 *
Viking	2564	----	----	60 *	----	----	60 *	4/17 e	6/12 e	48 s	0 *	----	51.3 *	37.6
VSX-1	2543	2606	2506	58 *	79 *	86 *	45	4/17	6/15	50 s	3 *	----	49.5	37.2
VSX-2	2436	----	----	43	----	----	43	4/16 e	6/17 l	49 s	17	----	49.8	38.4 *
Plainsman	2308	1993	1663	53	70	80	68 *	4/21 l	6/17	57	0 *	----	48.7	37.7
SW 013186	2240	----	----	53	----	----	50	4/17	6/12 e	50 s	3 *	----	50.9 *	38.9 *
Ceres	2199	2369	2301	52	73	82 *	47	4/19	6/14	52 s	3 *	----	51.5 *	36.8
SW 013211	2134	----	----	47	----	----	42	4/19	6/15	55	7 *	----	51.6 *	36.9
Casino	2130	2262	2090	43	72	81	70 *	4/20	6/18 l	53 s	7 *	----	49.1	37.4
ARC92007-2	2083	----	----	57	----	----	45	4/18	6/14	56	5 *	----	50.0	38.2 *
ARC90016-PR377	2082	2567	----	53	76 *	----	32	4/18	6/15	59	17	----	49.3	37.0
SW 013173	2055	----	----	47	----	----	63 *	4/19	6/15	49 s	0 *	----	50.8 *	38.9 *
Wotan	2022	----	----	60 *	----	----	40	4/19	6/16	54	13 *	----	51.1 *	38.2 *
SW 013022	1998	----	----	45	----	----	65 *	4/19	6/17 l	50 s	0 *	----	49.0	38.8 *
ARC92004-1	1988	----	----	47	----	----	48	4/19	6/18 l	69 t	20	----	50.2 *	38.0 *
KS9183	1967	----	----	43	----	----	45	4/15 e	6/11 e	53	0 *	----	51.4 *	37.8
ARC91019-50-E2	1755	2198	----	47	73	----	35	4/19	6/18 l	53 s	27	----	50.1	38.1 *
SW 013253	1741	----	----	60 *	----	----	48	4/20 l	6/16	53 s	10 *	----	50.1	37.4
SW 013062	1673	----	----	40	----	----	53 *	4/21 l	6/17 l	51 s	23	----	49.6	38.5 *
SW 013154	1399	----	----	45	----	----	33	4/20	6/18 l	52 s	7 *	----	50.1	36.8
SW 013121	1180	----	----	27	----	----	38	4/20	6/18 l	48 s	2 *	----	50.5 *	37.4
KS2427	304	----	----	17	----	----	28	4/22 l	6/21 l	50 s	15	----	47.9	35.4
Mean	2322	2495	2286	54	75	83	50	4/18	6/15	53	6	----	50.4	37.9
LSD (.05)	970	537	409	23	12	8	21	1	3	5	15	----	1.5	1.4
CV (%)	25.6	18	19	26.4	15	11	25.5	0.8	1.3	5.4	151.8	----	1.8	1.8

* Upper LSD group - Differences among those marked with an asterisk are not statistically significant.

1/ 2yr means include data from 2003 and 2004.

2/ 3yr means include data from 2002, 2003, and 2004.

3/ Values marked "e" are not statistically different from the earliest value; those marked "l" are not statistically different from the latest.

4/ Values marked "s" are not statistically different from the shortest value; those marked "t" are not statistically different from the tallest.

PETERSBURG, VA

COOPERATOR: Harbans Bhardwaj,
Virginia State University

PREVIOUS CROP: white lupin
PLANTING DATE: October 17, 2003
HARVEST DATE: June 24, 2004

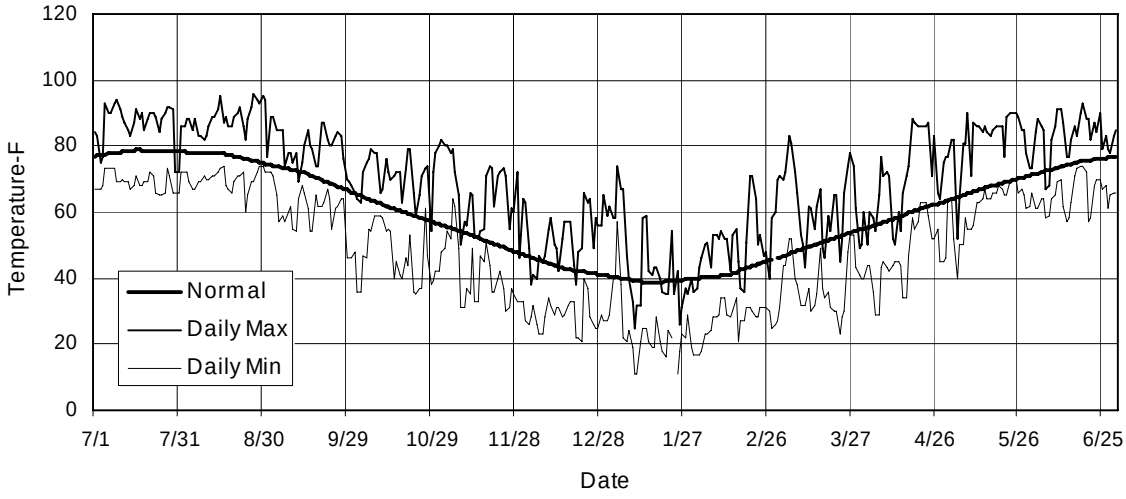
PESTICIDES:
Treflan, 2.0 pt/acre (herbicide)
Karate, 1 application (insecticide)

SOIL TEST:
P = high; K = medium; pH = 6.2

FERTILIZATION
Fall: none
Spring: 100–100–100

SEEDING RATE: 6 lb/a
ROW SPACING: 12 in
IRRIGATION: none
SOIL TYPE: Abell sandy loam

ELEVATION: 15 ft
LATITUDE: 37° 14' N
AVG. WINTER SURVIVAL: 100%
AVERAGE YIELD: 3169 lb/a



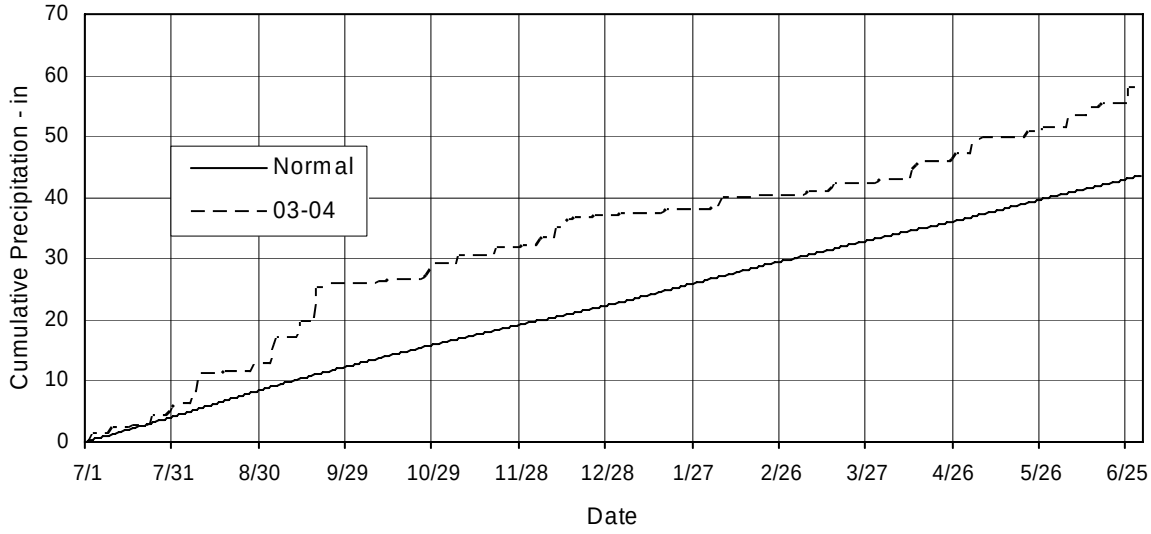


Table 5. Results from the 2004 National Winter Canola Variety Trial, Petersburg, VA.

Line	Yield			Winter Survival			Fall	50%	Matur-	Plant	Lodg-	Shat-	Test	Total
	2004	2yr 1/	3yr 2/	2004	2yr 1/	3yr 2/	Stand	Bloom 3/	ity 3/	Height 4/	ing	tering	Weight	Oil
	lb/ac			%			%	date	date	in.	%	%	lb/bu	%
Wichita	4207 *	3721 *	3448 *	100	100	100	----	----	----	39 s	----	----	----	36.4 *
Jetton	4059.3 *	3147 *	3119	100	100	100	----	----	----	37 s	----	----	----	35.6 *
VSX-2	4017.7 *	----	----	100	----	----	----	----	----	40 st	----	----	----	36.7 *
Banjo	3986.7 *	3248 *	2745	100	100	100	----	----	----	43 t	----	----	----	35.7 *
VSX-1	3932.7 *	3747 *	3842 *	100	100	100	----	----	----	36 s	----	----	----	35.3
Maestro	3915 *	----	----	100	----	----	----	----	----	42 st	----	----	----	37.5 *
ARC90016-PR377	3895.3 *	3176 *	----	100	100	----	----	----	----	43 t	----	----	----	35.8 *
Kronos	3871 *	----	----	100	----	----	----	----	----	44 t	----	----	----	34.9
KS9135	3512.7 *	----	----	100	----	----	----	----	----	46 t	----	----	----	36.2 *
Rasmus	3338 *	----	----	100	----	----	----	----	----	37 s	----	----	----	----
KS8367	3297 *	2996	----	100	100	----	----	----	----	44 t	----	----	----	37.1 *
Titan	3278 *	----	----	100	----	----	----	----	----	42 st	----	----	----	37.6 *
Abilene	3150.3	2831	2960	100	100	100	----	----	----	40 st	----	----	----	36.2 *
Casino	3063.7	2802	2570	100	100	100	----	----	----	42 t	----	----	----	35.6 *
Wotan	3037	----	----	100	----	----	----	----	----	42 st	----	----	----	34.8
ARC92004-1	2927.7	----	----	100	----	----	----	----	----	42 t	----	----	----	36.0 *
KS9124	2905.7	----	----	100	----	----	----	----	----	46 t	----	----	----	36.0 *
Talent	2899.7	----	----	100	----	----	----	----	----	44 t	----	----	----	37.4 *
ARC92007-2	2867.3	----	----	100	----	----	----	----	----	43 t	----	----	----	35.8 *
KS7436	2805.3	2502	2629	100	100	100	----	----	----	41 st	----	----	----	36.9 *
ARC91019-50-E2	2591.3	2610	----	100	100	----	----	----	----	40 st	----	----	----	36.5 *
Ceres	2485.7	1955	1907	100	100	100	----	----	----	38 s	----	----	----	35.5 *
Plainsman	2410.3	2037	2198	100	100	100	----	----	----	44 t	----	----	----	34.2
KS9183	2210.3	----	----	100	----	----	----	----	----	43 t	----	----	----	35.3
Viking	2064	----	----	100	----	----	----	----	----	39 s	----	----	----	36.3 *
KS2427	1662	----	----	100	----	----	----	----	----	44 t	----	----	----	33.7
Mean	3168.9	2810	2675	100	100	100	----	----	----	42	----	----	----	35.9
LSD (.05)	960.04	625	596	----			----	----	----	5	----	----	----	2.1
CV (%)	18.6	19.7	24.0	----			----	----	----	8.1	----	----	----	1.1

* Upper LSD group - Differences among those marked with an asterisk are not statistically significant.

1/ 2yr means include data from 2003 and 2004.

2/ 3yr means include data from 2002, 2003, and 2004.

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SUFFOLK, VA

COOPERATOR: Harbans Bhardwaj,
Virginia State University

PREVIOUS CROP: fallow
PLANTING DATE: October 1, 2003
HARVEST DATE: June 22, 2004

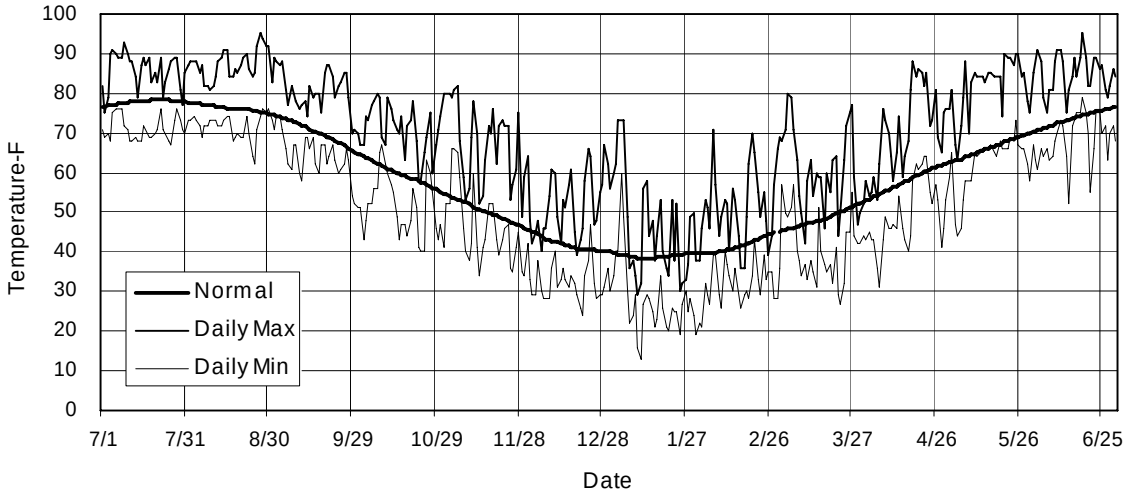
PESTICIDES:
Karate, 1 application (insecticide)

SOIL TEST
P = medium; K = medium; pH = 5.6

FERTILIZATION
Fall: none
Spring: 100–100–100

SEEDING RATE: 6 lb/a
ROW SPACING: 12 inches
IRRIGATION: none
SOIL TYPE: Rains fine sandy loam

ELEVATION: 22 ft
LATITUDE: 36° 44' N
AVG. WINTER SURVIVAL: 100%
AVERAGE YIELD: 1955 lb/a



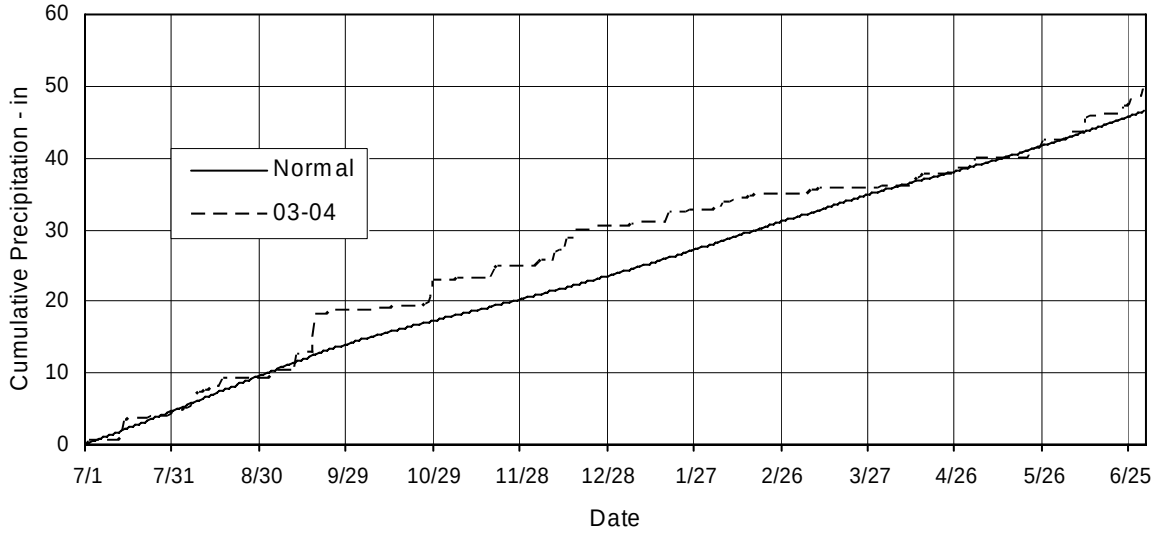


Table 6. Results from the 2004 National Winter Canola Variety Trial, Suffolk, VA.

Line	Yield			Winter Survival			Fall	50%	Matur-	Plant	Lodg-	Shat-	Test	Total
	2004	2yr 1/	3yr 2/	2004	2yr 1/	3yr 2/	Stand	Bloom 3/	ity 3/	Height 4/	ing	tering	Weight	Oil
	lb/ac			%			%	date	date	in.	%	%	lb/bu	%
VSX-1	3004 *	2996 *	2881 *	100	100	100	----	----	----	45	----	----	----	36.7
VSX-2	2738 *	----	----	100	----	----	----	----	----	53	----	----	----	38.3 *
Banjo	2647 *	2757 *	2295	100	100	100	----	----	----	51	----	----	----	38.5 *
Kronos	2535 *	----	----	100	----	----	----	----	----	53	----	----	----	37.5
Jetton	2427 *	2120	2099	100	100	100	----	----	----	48	----	----	----	37.6
Wichita	2379 *	2149	2099	100	100	100	----	----	----	48	----	----	----	38.1 *
Viking	2378 *	----	----	100	----	----	----	----	----	46	----	----	----	38.5 *
ARC91019-50-E2	2357 *	2354	----	100	100	----	----	----	----	56	----	----	----	38.2 *
ARC92007-2	2305	----	----	100	----	----	----	----	----	51	----	----	----	38.1 *
Rasmus	2176	----	----	100	----	----	----	----	----	51	----	----	----	38.5 *
Titan	2069	----	----	100	----	----	----	----	----	49	----	----	----	38.7 *
KS7436	2057	2203	2229	100	100	100	----	----	----	54	----	----	----	38.2 *
ARC90016-PR377	2045	2171	----	100	100	----	----	----	----	54	----	----	----	37.6
KS9135	1977	----	----	100	----	----	----	----	----	53	----	----	----	38.0 *
Maestro	1876	----	----	100	----	----	----	----	----	51	----	----	----	39.1 *
KS9124	1859	----	----	100	----	----	----	----	----	53	----	----	----	38.3 *
Talent	1852	----	----	100	----	----	----	----	----	53	----	----	----	37.6
ARC92004-1	1835	----	----	100	----	----	----	----	----	59	----	----	----	37.8 *
Wotan	1831	----	----	100	----	----	----	----	----	54	----	----	----	38.3 *
Abilene	1590	1971	1957	100	100	100	----	----	----	47	----	----	----	36.4
Ceres	1466	1629	1451	100	100	100	----	----	----	55	----	----	----	36.2
Casino	1442	1605	1622	100	100	100	----	----	----	52	----	----	----	38.1 *
KS8367	1327	1643	----	100	100	----	----	----	----	49	----	----	----	38.1 *
KS9183	1183	----	----	100	----	----	----	----	----	54	----	----	----	37.3
Plainsman	859	996	1089	100	100	100	----	----	----	57	----	----	----	36.3
KS2427	630	----	----	100	----	----	----	----	----	50	----	----	----	34.6
Mean	1955	1956	1863	100	100	100	----	----	----	52	----	----	----	37.7
LSD (.05)	684	623	471	----	----	----	----	----	----	NS	----	----	----	2.2
CV (%)	21.4	27	26	----	----	----	----	----	----	9.2	----	----	----	1.3

* Upper LSD group - Differences among those marked with an asterisk are not statistically significant.

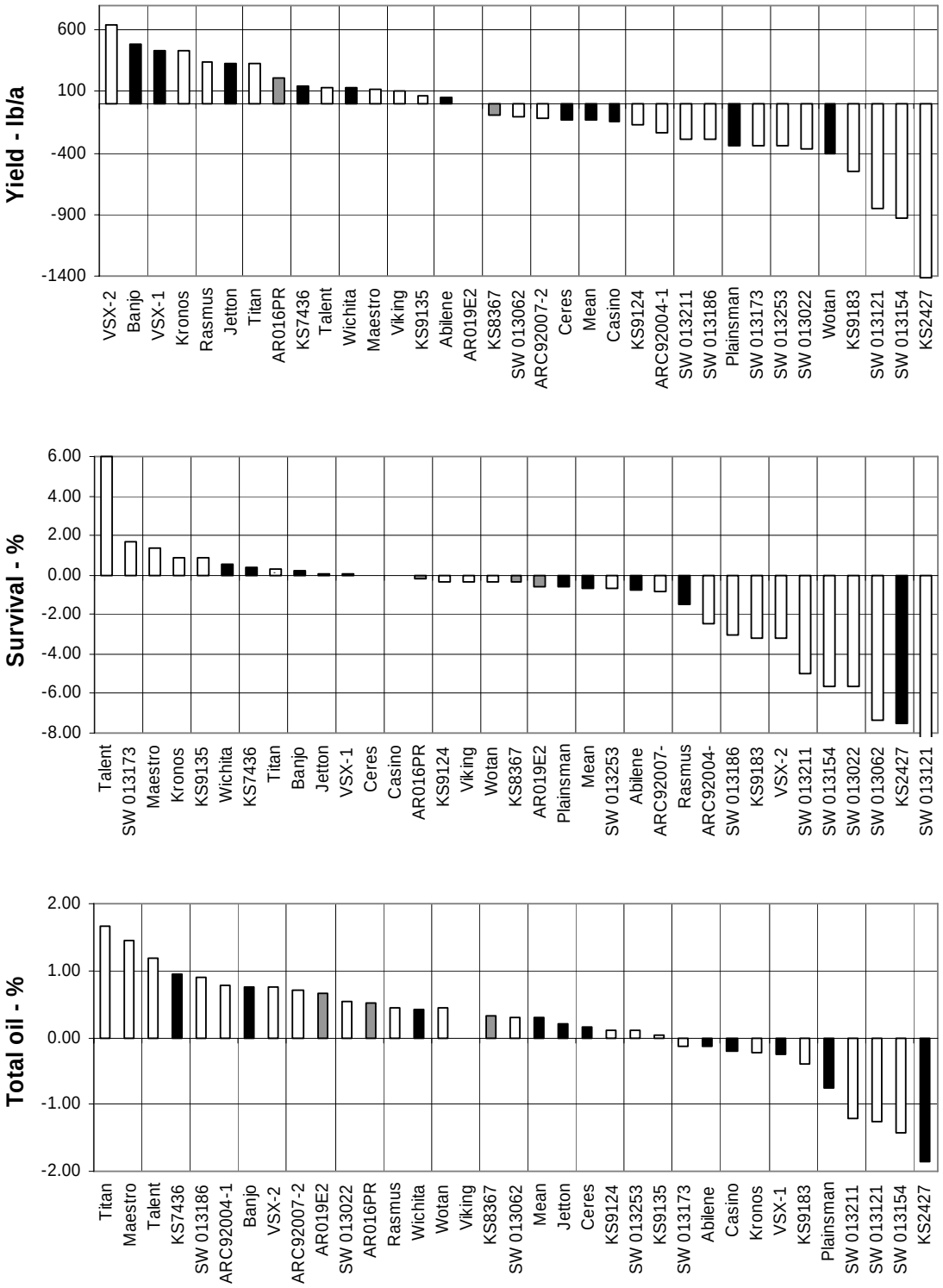
1/ 2yr means include data from 2003 and 2004.

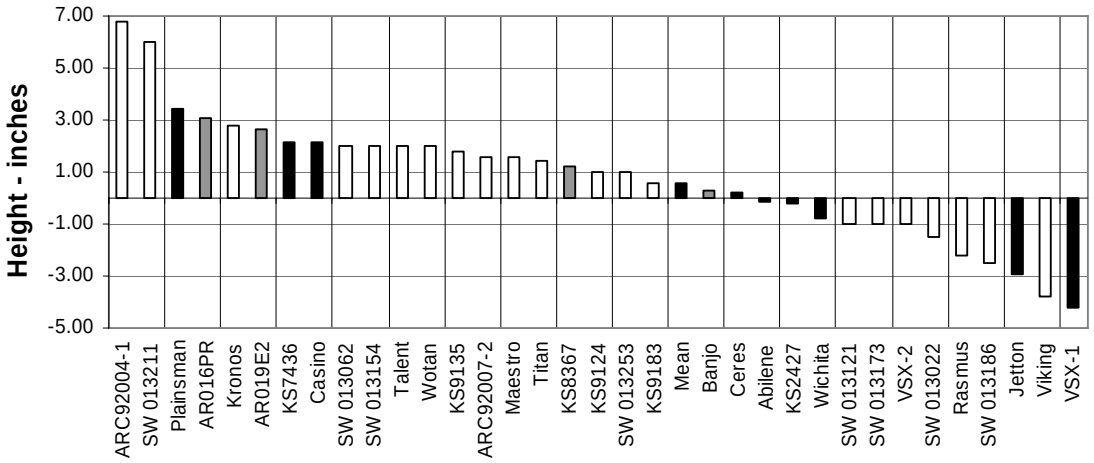
2/ 3yr means include data from 2002, 2003, and 2004.

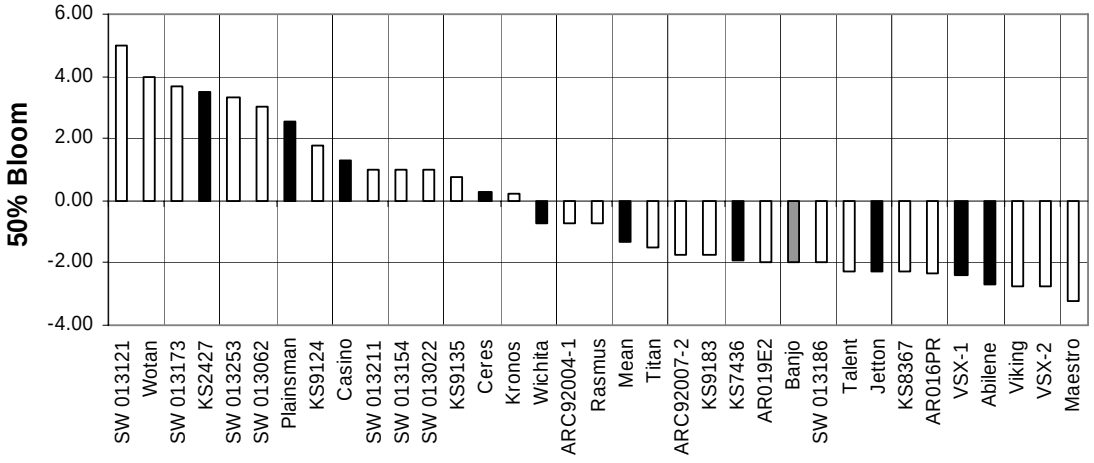
3/ Values marked "e" are not statistically different from the earliest value; those marked "l" are not statistically different from the latest.

4/ Values marked "s" are not statistically different from the shortest value; those marked "t" are not statistically different from the tallest.

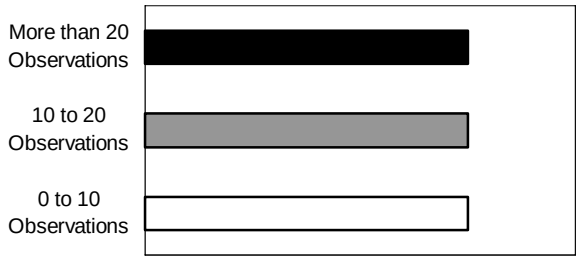
Figure 1. Southeast Winter Canola Summary, 1996-2004.







Note: Values are averages of the differences between each cultivar and the mean of Jetton, Ceres, Plainsman, and Wichita for yield (lb/a), winter survival (%), total oil content (%), plant height (inches), and 50% bloom date (days). The number of observations for each trait is represented by the different colors of the bars (as shown at the right).



BELLEVILLE, IL

COOPERATORS: Jim Klein and Mike Schmidt, Southern Illinois University, Carbondale

PREVIOUS CROP: fallow
PLANTING DATE: September 18, 2003
HARVEST DATE: June 17, 2004

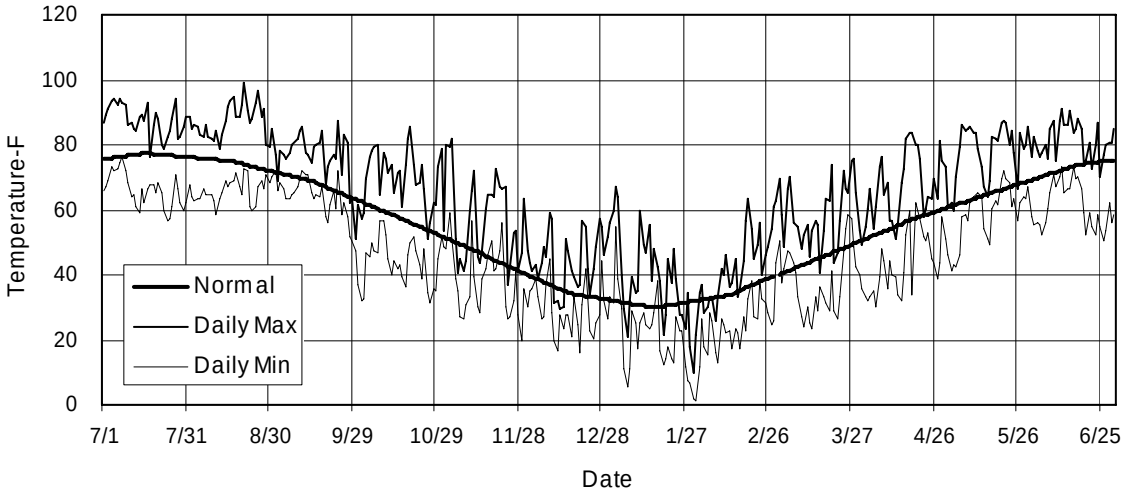
PESTICIDES:
Treflan, 1.5pt/a (herbicide)

SOIL TEST:
not available

FERTILIZATION
Fall: 0–0–0
Spring: 100–0–0

SEEDING RATE: 10 lb/a
ROW SPACING: 7.5 in
IRRIGATION: none
SOIL TYPE: Stoy silt loam

ELEVATION: 400 ft
LATITUDE: 38° 30' N
AVG. WINTER SURVIVAL: 84%
AVERAGE YIELD: 2734 lb/a



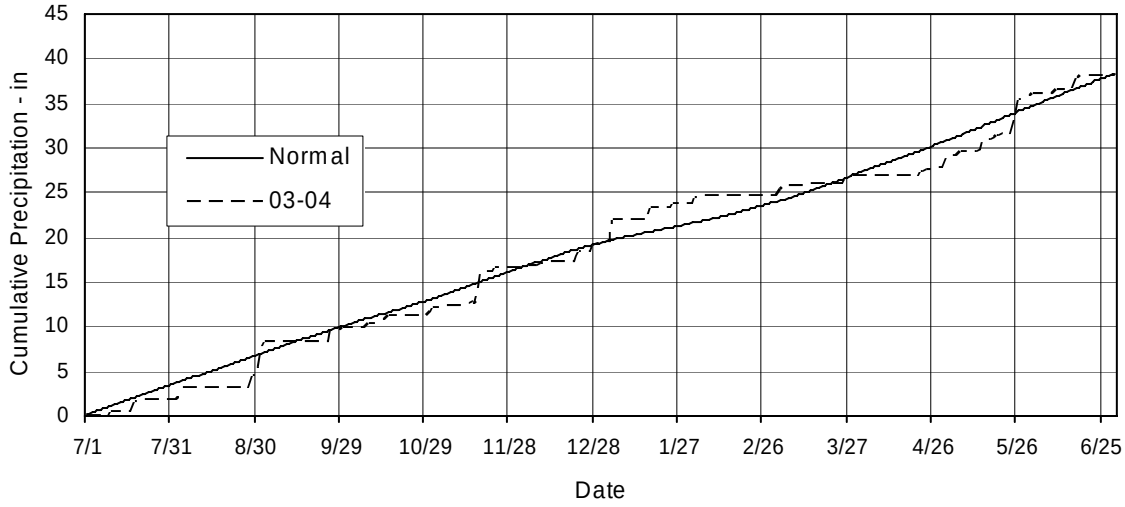


Table 7. Results from the 2004 National Winter Canola Variety Trial, Belleville, IL.

Line	Yield			Winter Survival			Fall	50%	Matur-	Plant	Lodg-	Shat-	Test	Total
	2004	2yr 1/	3yr 2/	2004	2yr 1/	3yr 2/	Stand	Bloom 3/	ity 3/	Height 4/	ing	tering	Weight	Oil
	lb/ac			%			%	date	date	in.	%	%	lb/bu	%
Jetton	3444 *	3793 *	3149 *	88 *	94 *	94 *	----	----	----	45 t	10 *	17 *	50.5	39.62 *
VSX-1	3295 *	3740 *	3044 *	85 *	93 *	89 *	----	----	----	46 t	8 *	13 *	50.0	39.62 *
Rasmus	3239 *	----	----	73	----	----	----	----	----	46 t	17 *	20 *	49.0	38.75 *
Talent	3237 *	----	----	78	----	----	----	----	----	48 t	8 *	30	51.7	38.95 *
Banjo	3191 *	3150	2596	95 *	98 *	96 *	----	----	----	47 t	33 *	33	52.5	37.98
VSX-2	3074 *	----	----	77	----	----	----	----	----	46 t	11 *	17 *	50.4	38.65 *
KS9135	2993 *	----	----	93 *	----	----	----	----	----	47 t	15 *	20 *	51.7	39.21 *
ARC92004-1	2971 *	----	----	90 *	----	----	----	----	----	46 t	20 *	19 *	50.8	36.7
Plainsman	2915 *	2557	2102	85 *	93 *	87 *	----	----	----	46 t	12 *	17 *	50.4	38.7 *
Titan	2903 *	----	----	80	----	----	----	----	----	47 t	12 *	22 *	51.9	36.86
KS9183	2855 *	----	----	92 *	----	----	----	----	----	47 t	12 *	15 *	52.1	37.47
KS9124	2763	----	----	83 *	----	----	----	----	----	45 t	12 *	20 *	51.1	39.67 *
Kronos	2726	----	----	95 *	----	----	----	----	----	45 t	32 *	23 *	52.7	39.11 *
Wichita	2686	3279 *	2852 *	93 *	97 *	94 *	----	----	----	45 t	18 *	22 *	52.0	39.11 *
KS7436	2676	3081	2371	85 *	89 *	81	----	----	----	45 t	22 *	15 *	52.4	38.6
KS8367	2624	2694	----	93 *	97 *	----	----	----	----	46 t	28 *	20 *	51.7	38.54
ARC92007-2	2605	----	----	87 *	----	----	----	----	----	49 t	8 *	25 *	51.3	39.26 *
ARC90016-PR377	2551	3123	----	85 *	93 *	----	----	----	----	47 t	20 *	20 *	51.3	39.36 *
Ceres	2529	3033	2468	50	75	72	----	----	----	46 t	22 *	27 *	52.5	39.57 *
ARC91019-50-E2	2347	2947	----	92 *	96 *	----	----	----	----	46 t	37 *	15 *	51.8	38.29
Abilene	2322	2781	2428	80	87 *	89 *	----	----	----	45	27 *	22 *	51.9	38.75 *
Maestro	2292	----	----	82	----	----	----	----	----	47 t	27 *	30	53.7 *	38.95 *
Casino	2284	2391	1967	90 *	95 *	87 *	----	----	----	46 t	40	18 *	51.4	38.54
Wotan	2276	----	----	75	----	----	----	----	----	44	35 *	23 *	51.5	38.9 *
Viking	2149	----	----	77	----	----	----	----	----	39 s	53	50	53.1 *	39.36 *
KS2427	2144	----	----	75	----	----	----	----	----	45 t	18 *	15 *	50.2	39 *
Mean	2734	3018	2475	84	90	88	----	----	----	46	21	22	51.5	38.75
LSD (.05)	685	510	397	13	12	10	----	----	----	4	29	16	1.0	1.0
CV (%)	15.3	15	19	9.7	11	12	----	----	----	5.0	81.6	45.8	1.2	1.28

* Upper LSD group - Differences among those marked with an asterisk are not statistically significant.

1/ 2yr means include data from 2003 and 2004.

2/ 3yr means include data from 2002, 2003, and 2004.

3/ Values marked "e" are not statistically different from the earliest value; those marked "l" are not statistically different from the latest.

4/ Values marked "s" are not statistically different from the shortest value; those marked "t" are not statistically different from the tallest.

CARBONDALE, IL

COOPERATORS: Jim Klein and Mike Schmidt, Southern Illinois University, Carbondale

PREVIOUS CROP: fallow
PLANTING DATE: September 19, 2003
HARVEST DATE: June 18, 2004

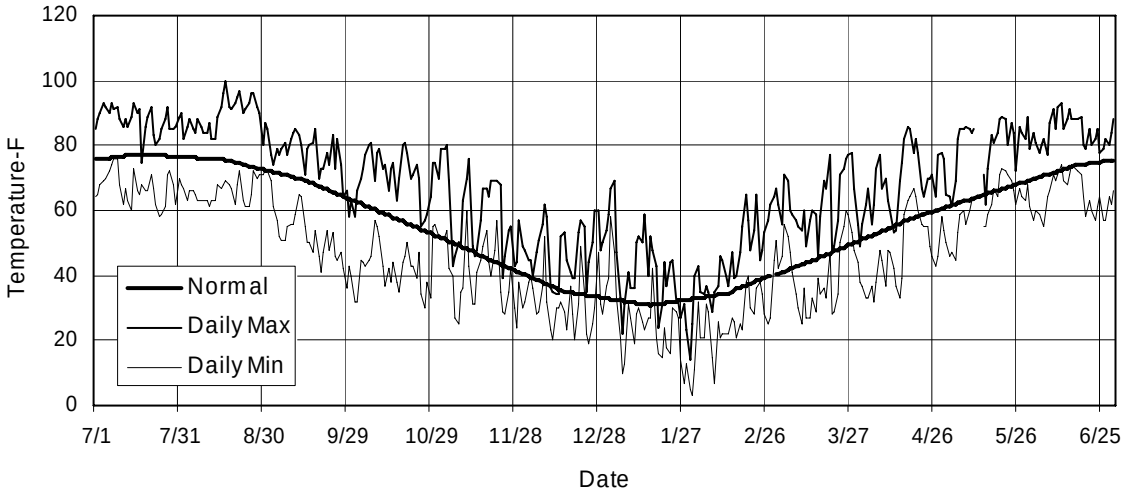
PESTICIDES:
Treflan, 1.5pt/a (herbicide)

SOIL TEST:
not available

FERTILIZATION
Fall: 0–0–0
Spring: 100–0–0

SEEDING RATE: 10 lb/a
ROW SPACING: 7.5 in
IRRIGATION: none
SOIL TYPE: Stoy silt loam

ELEVATION: 415 ft
LATITUDE: 37° 47' N
AVG. WINTER SURVIVAL: 86%
AVERAGE YIELD: 2208 lb/a



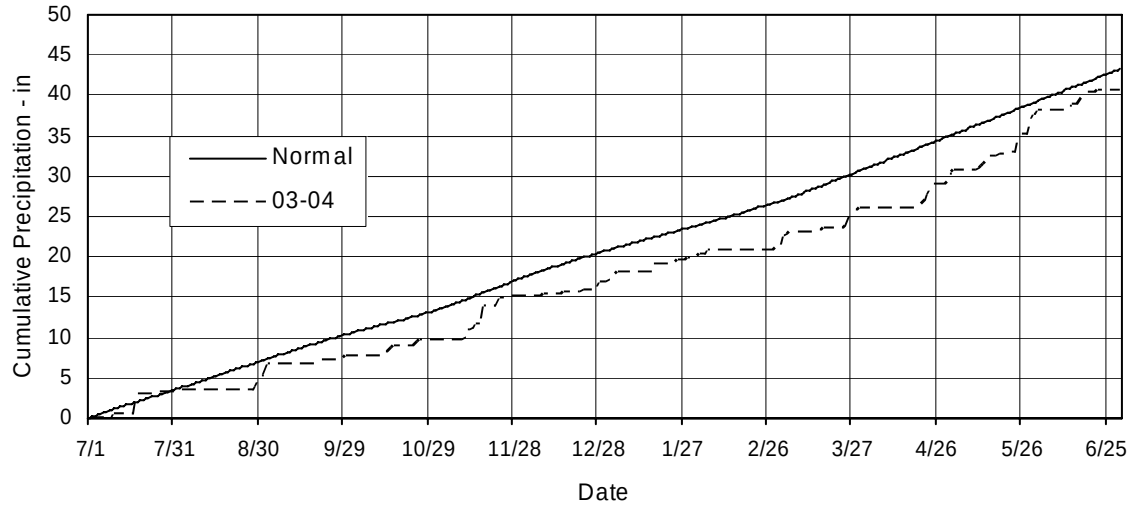


Table 8. Results from the 2004 National Winter Canola Variety Trial, Carbondale, IL.

Line	Yield			Winter Survival			Fall	50%	Matur-	Plant	Lodg-	Shat-	Test	Total
	2004	2yr 1/	3yr 2/	2004	2yr 1/	3yr 2/	Stand	Bloom 3/	ity 3/	Height 4/	ing	tering	Weight	Oil
	lb/ac			%			%	date	date	in.	%	%	lb/bu	%
Banjo	2947 *	2681 *	2635 *	90 *	87 *	90 *	----	----	----	47 t	6 *	----	48.8	39.6 *
KS9135	2723 *	----	----	87 *	----	----	----	----	----	49 t	5 *	----	48.3	37.2
Titan	2700 *	----	----	87 *	----	----	----	----	----	49 t	6 *	----	47.9	38.9 *
KS9183	2536 *	----	----	88 *	----	----	----	----	----	47 t	5 *	----	50.5 *	38.6 *
KS9124	2446 *	----	----	92 *	----	----	----	----	----	47 t	6 *	----	50.2 *	37.8 *
Ceres	2395 *	1655	1904	85 *	81 *	78	----	----	----	49 t	5 *	----	48.1	37.1
ARC90016-PR377	2392 *	2246 *	----	87 *	85 *	----	----	----	----	49 t	5 *	----	48.1	38.1 *
VSX-2	2358 *	----	----	80 *	----	----	----	----	----	46 t	6 *	----	49.0	37.0
Rasmus	2327 *	----	----	73	----	----	----	----	----	46 t	7 *	----	45.8	38.6 *
Talent	2323 *	----	----	83 *	----	----	----	----	----	47 t	7 *	----	48.7	39.1 *
Jetton	2264 *	2230 *	2374 *	75	81 *	85 *	----	----	----	39 s	7 *	----	48.6	38.2 *
Viking	2202 *	----	----	92 *	----	----	----	----	----	46 t	5 *	----	50.8 *	38.0 *
Wichita	2185 *	1840	2078	88 *	88 *	91 *	----	----	----	44 s	7 *	----	47.9	37.9 *
Casino	2170	1837	1947	92 *	91 *	91 *	----	----	----	50 t	6 *	----	47.7	36.5
KS8367	2145	1912	----	90 *	92 *	----	----	----	----	48 t	7 *	----	49.9 *	37.5
Plainsman	2129	1287	1473	92 *	83 *	85 *	----	----	----	49 t	7 *	----	49.4	36.1
Maestro	2090	----	----	80 *	----	----	----	----	----	46 t	9	----	52.6 *	39.4 *
KS2427	2006	----	----	90 *	----	----	----	----	----	46 t	5 *	----	48.3	34.7
VSX-1	1983	2095	2214	80 *	77	80	----	----	----	42 s	7 *	----	47.5	37.2
Wotan	1979	----	----	77	----	----	----	----	----	42 s	8 *	----	47.9	36.9
ARC92007-2	1894	----	----	88 *	----	----	----	----	----	48 t	7 *	----	48.6	38.5 *
Abilene	1886	1691	1810	90 *	83 *	83 *	----	----	----	46 t	6 *	----	49.1	37.8 *
KS7436	1851	2123	2198	87 *	87 *	86 *	----	----	----	43 s	9	----	47.9	38.3 *
Kronos	1849	----	----	78	----	----	----	----	----	40 s	10	----	50.5 *	38.0 *
ARC91019-50-E2	1832	1930	----	88 *	86 *	----	----	----	----	45	9	----	49.5	38.7 *
ARC92004-1	1794	----	----	87 *	----	----	----	----	----	46 t	10	----	49.3	39.0 *
Mean	2208	1861	1939	86	84	85	----	----	----	46	7	----	48.9	37.9
LSD (.05)	0	468	331	0	12	10	----	----	----	0	0	----	0.0	1.9
CV (%)	21.3	22	18	9.9	12	12	----	----	----	6.8	32.9	----	3.4	2.5

* Upper LSD group - Differences among those marked with an asterisk are not statistically significant.

1/ 2yr means include data from 2003 and 2004.

2/ 3yr means include data from 2002, 2003, and 2004.

3/ Values marked "e" are not statistically different from the earliest value; those marked "l" are not statistically different from the latest.

4/ Values marked "s" are not statistically different from the shortest value; those marked "t" are not statistically different from the tallest.

COLUMBIA CITY, IN

COOPERATOR: Ellsworth Christmas,
NE Purdue Agric. Center

PREVIOUS CROP: wheat
PLANTING DATE: September 12, 2003
HARVEST DATE: July 2, 2004

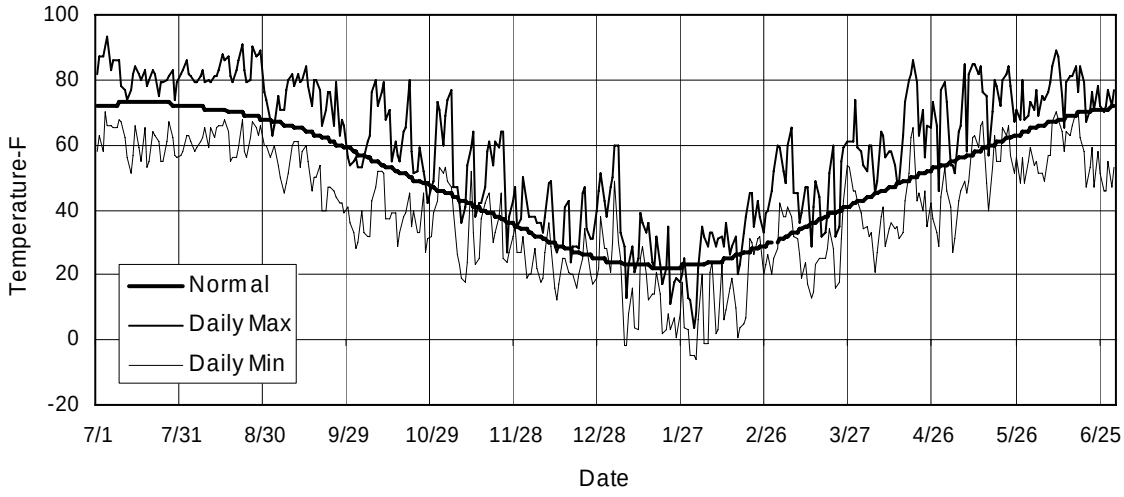
PESTICIDES:
none

SOIL TEST
P=36 ppm; K= 135 ppm; pH=6.8

FERTILIZATION
Fall: 30–60–60
Spring: 120–0–0 on March 18

SEEDING RATE: 5 lb/a
ROW SPACING: 6 in
IRRIGATION: None
SOIL TYPE: Haskins loam

ELEVATION: 840 ft
LATITUDE: 41° 5' N
AVG. WINTER SURVIVAL: 100%
AVERAGE YIELD: 1297 lb/a



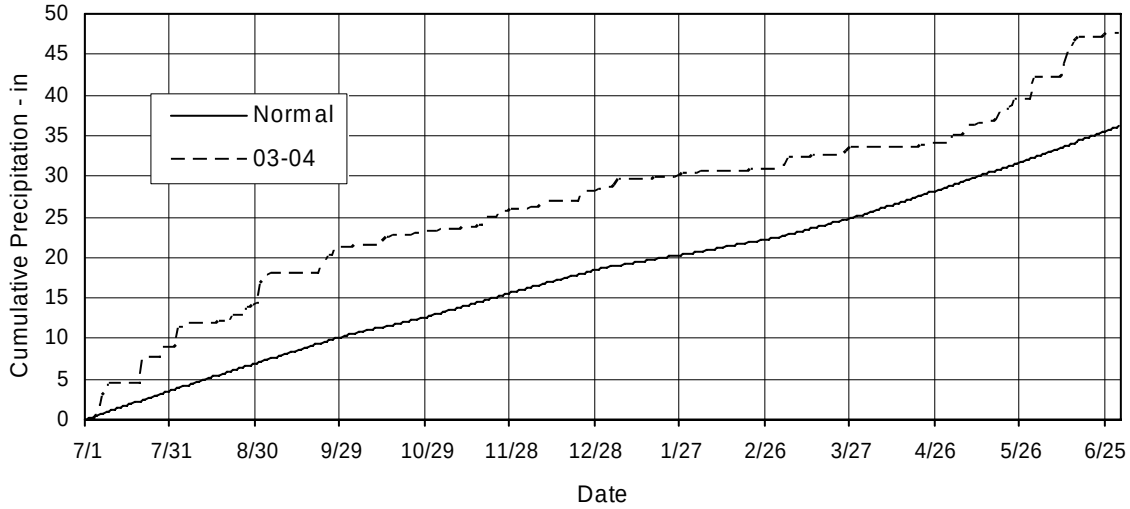


Table 9. Results from the 2004 National Winter Canola Variety Trial, Columbia City, IN.

Line	Yield			Winter Survival			Fall	50%	Matur-	Plant	Lodg-	Shat-	Test	Total
	2004	2yr 1/	3yr 2/	2004	2yr 1/	3yr 2/	Stand	Bloom 3/	ity 3/	Height 4/	ing	tering	Weight	Oil
	lb/ac			%			%	date	date	in.	%	%	lb/bu	%
Wotan	1768 *	----	----	100	----	----	100	4/27	6/8 e	47	0	0	48.6	38.4 *
Titan	1722 *	----	----	100	----	----	100	4/24 e	6/10	51 t	0	0	47.6	38.5 *
SW 013121	1619 *	----	----	100	----	----	100	4/28	6/11	48	0	0	49.3 *	38.2 *
KS9135	1616 *	----	----	100	----	----	100	4/27	6/9	48	0	0	49.1 *	37.5
SW 013154	1611 *	----	----	100	----	----	100	4/27	6/10	50 t	0	0	48.3	38.5 *
SW 013186	1549 *	----	----	100	----	----	100	4/24	6/9	49	0	0	48.1	37.8 *
Talent	1543 *	----	----	100	----	----	100	4/24	6/9	49	0	0	47.6	38.2 *
SW 013173	1521 *	----	----	100	----	----	100	4/27	6/10	49	0	0	47.9	38.8 *
Wichita	1495	1152 *	1385 *	100	100 *	100 *	100	4/27	6/9	51 t	0	0	50.0 *	36.6
Casino	1486	1123 *	1260	100	100 *	100 *	100	4/28	6/10	49	0	0	48.2	36.4
Maestro	1481	----	----	100	----	----	100	4/23 e	6/8 e	51 t	0	0	48.0	37.9 *
Kronos	1421	----	----	100	----	----	100	4/25	6/9	49	0	0	47.9	36.5
Rasmus	1409	----	----	100	----	----	100	4/24 e	6/10	47	0	0	45.3	37.3
Jetton	1381	1362 *	1372 *	100	100 *	100 *	100	4/24 e	6/6 e	39 s	0	0	47.0	38.0 *
Banjo	1375	1331 *	1493 *	100	100 *	100 *	100	4/25	6/8 e	47	0	0	47.5	37.9 *
SW 013062	1358	----	----	100	----	----	100	4/27	6/11	49	0	0	47.7	38.8 *
Abilene	1341	1175 *	1279	100	95	97 *	100	4/26	6/8 e	50 t	0	0	49.4 *	36.3
VSX-1	1314	1288 *	1368 *	100	98 *	99 *	100	4/24 e	6/6 e	41 s	0	0	46.3	37.7 *
ARC90016-PR377	1294	1126 *	----	100	100 *	----	100	4/26	6/8 e	49	0	0	47.1	36.9
KS8367	1256	1023	----	100	100 *	----	100	4/27	6/9	50	0	0	47.9	37.2
ARC91019-50-E2	1194	1033	----	100	100 *	----	100	4/26	6/10	49	0	0	47.7	37.3
VSX-2	1190	----	----	100	----	----	100	4/24	6/9	43	0	0	46.2	37.3
ARC92007-2	1173	----	----	100	----	----	100	4/26	6/9	47	0	0	46.8	36.8
SW 013211	1125	----	----	100	----	----	100	4/26	6/10	50	0	0	48.9	36.4
KS7436	1088	1051	1213	100	100 *	100 *	100	4/26	6/8 e	50 t	0	0	47.5	37.1
KS9183	1076	----	----	100	----	----	100	4/25	6/8 e	46	0	0	47.0	37.0
Viking	1072	----	----	100	----	----	100	4/25	6/8 e	45	0	0	48.0	36.5
KS9124	1068	----	----	100	----	----	100	4/28	6/8 e	49	0	0	46.3	35.3
SW 013022	1047	----	----	100	----	----	100	4/26	6/11	45	0	0	47.3	38.0 *
SW 013253	1038	----	----	100	----	----	100	4/28	6/11	49	0	0	48.0	37.0
ARC92004-1	978	----	----	100	----	----	100	4/28	6/10	53 t	0	0	47.5	35.2
Plainsman	944	943	1027	100	93	83	100	5/1 l	6/16 l	51 t	13	0	47.9	35.1
Ceres	859	813	975	100	97	96 *	100	4/26	6/8 e	47	0	0	47.8	37.1
KS2427	675	----	----	100	----	----	100	4/29	6/15 l	49	0	0	47.0	34.1
Mean	1297	1130	1240	100	99	97	100	4/26	6/9	48	0	0	47.7	37.2
LSD (.05)	264	242	201	NS	3	6	NS	1	3	3	NS	NS	1.1	1.1
CV (%)	12.5	19	18	---	3	7	---	0.5	1.0	3.4	1010	---	1.4	1.5

* Upper LSD group - Differences among those marked with an asterisk are not statistically significant.

1/ 2yr means include data from 2003 and 2004.

2/ 3yr means include data from 2002, 2003, and 2004.

3/ Values marked "e" are not statistically different from the earliest value; those marked "l" are not statistically different from the latest.

4/ Values marked "s" are not statistically different from the shortest value; those marked "t" are not statistically different from the tallest.

EAST LANSING, MI

COOPERATOR: Russ Freed,
Michigan State University

PREVIOUS CROP: soybean
PLANTING DATE: August 25, 2003
HARVEST DATE: July 14, 2004

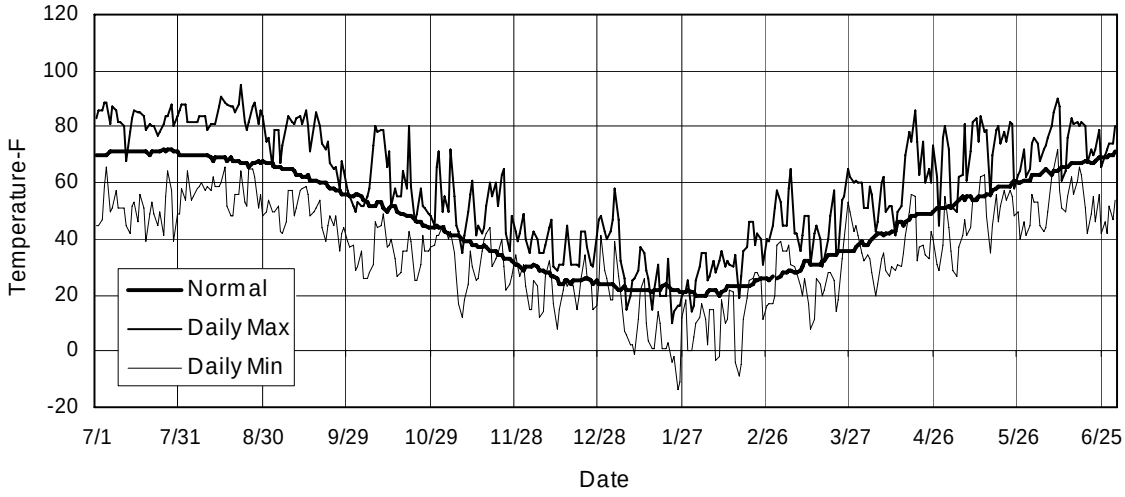
PESTICIDES:
none

SOIL TEST:
not available

FERTILIZATION
Fall: 19–19–19
Spring: 125–0–0

SEEDING RATE: 5 lb/a
ROW SPACING: 6 inches
IRRIGATION: none
SOIL TYPE: Capac loam

ELEVATION: 880 ft
LATITUDE: 42° 40' N
AVG. WINTER SURVIVAL: 100%
AVERAGE YIELD: 1522 lb/a
COMMENTS: The Second and Third Reps had very poor fall emergence due to prolonged drought after planting.



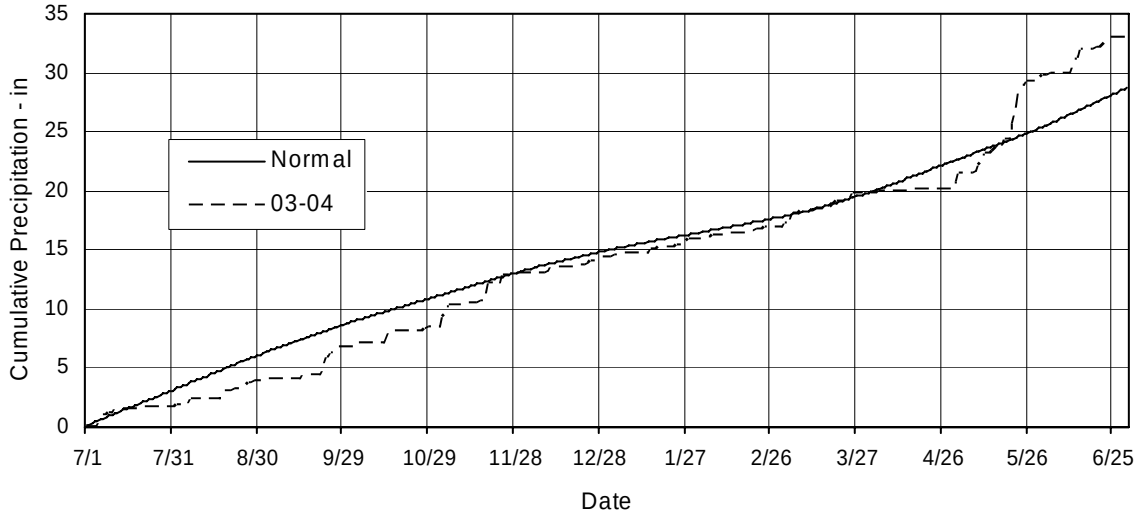


Table 10. Results from the 2004 National Winter Canola Variety Trial, East Lansing, MI.

Line	Yield			Winter Survival			Fall	50%	Matur-	Plant	Lodg-	Shat-	Test	Total
	2004	2yr 1/	3yr 2/	2004	2yr 1/	3yr 2/	Stand	Bloom 3/	ity 3/	Height 4/	ing	tering	Weight	Oil
	lb/ac			%			%	date	date	in.	%	%	lb/bu	%
Viking	3140 *	----	----	100	----	----	53	5/4	7/8	51	20	----	----	----
Titan	2597 *	----	----	100	----	----	73	5/4	7/8	50	0	----	----	----
SW013186	2270	----	----	100	----	----	47	5/4	7/7	56	30	----	----	----
ARC92007-2	2202	----	----	100	----	----	50	5/4	7/9	58	0	----	----	----
Maestro	2191	----	----	100	----	----	50	4/30	7/8	54	10	----	----	----
KS2427	1965	----	----	100	----	----	47	5/9	7/11	56	70	----	----	----
KS9183	1909	----	----	100	----	----	43	5/7	7/8	53	0	----	----	----
Casino	1852	2248 *	2377 *	100	100	86	50	5/5	7/8	54	0	----	----	----
Ceres	1807	2322 *	1894	100	100	78	30	5/4	7/7	52	20	----	----	----
Talent	1763	----	----	100	----	----	50	4/30	7/8	48	0	----	----	----
SW013154	1762	----	----	100	----	----	63	5/5	7/8	51	0	----	----	----
SW013253	1739	----	----	100	----	----	37	5/8	7/9	58	30	----	----	----
ARC92004-1	1738	----	----	100	----	----	43	5/3	7/9	56	30	----	----	----
Rasmus	1728	----	----	100	----	----	27	4/30	7/8	56	0	----	----	----
VSX-2	1649	----	----	100	----	----	33	5/3	7/8	50	0	----	----	----
Abilene	1638	2208 *	2290 *	100	100	82	23	5/4	7/7	53	10	----	----	----
KS8367	1547	----	----	100	----	----	70	5/4	7/8	53	40	----	----	----
SW013173	1525	----	----	100	----	----	63	5/5	7/8	52	0	----	----	----
Wichita	1457	1886	1973	100	100	81	70	5/4	7/8	52	10	----	----	----
Jetton	1220	2068 *	1965	100	100	78	30	5/3	7/8	50	40	----	----	----
KS9124	1208	----	----	100	----	----	70	5/5	7/6	54	10	----	----	----
SW013022	1208	----	----	100	----	----	47	5/4	7/8	54	0	----	----	----
VSX-1	1186	1914	1743	100	100	83	50	5/3	7/8	52	10	----	----	----
Kronos	1152	----	----	100	----	----	53	5/4	7/8	52	40	----	----	----
SW013121	1107	----	----	100	----	----	33	5/6	7/8	57	0	----	----	----
Banjo	1050	1880	----	100	100	----	57	5/4	7/7	52	70	----	----	----
Plainsman	1049	1574	1868	100	100	83	43	5/8	7/10	58	30	----	----	----
SW013211	1016	----	----	100	----	----	53	5/5	7/6	50	60	----	----	----
KS7436	994	1878	1882	100	100	85	53	5/4	7/8	38	0	----	----	----
ARC90016-PR377	971	----	----	100	----	----	53	5/4	7/8	56	10	----	----	----
Wotan	824	----	----	100	----	----	43	5/6	7/9	56	30	----	----	----
SW013062	802	----	----	100	----	----	60	5/5	7/8	56	30	----	----	----
KS9135	757	----	----	100	----	----	67	5/5	7/6	56	20	----	----	----
ARC91019-50-E2	734	----	----	100	----	----	50	5/5	7/7	53	40	----	----	----
Mean	1522	1942	1907	100	100	82	51	5/4	7/7	53	28	----	----	----
LSD (.05)	684	358	274	NS	NS	NS	----	----	----	----	----	----	----	----
CV (%)	27.6	20.6	21.4	---	0.0	11.9	----	----	----	----	----	----	----	----

* Upper LSD group - Differences among those marked with an asterisk are not statistically significant.

1/ 2yr means include data from 2002 and 2004.

2/ 3yr means include data from 2001, 2002, and 2004.

3/ Values marked "e" are not statistically different from the earliest value; those marked "l" are not statistically different from the latest.

4/ Values marked "s" are not statistically different from the shortest value; those marked "t" are not statistically different from the tallest.

COLUMBIA, MO

COOPERATORS: Tim Reinbolt and Shawn Conley, University of Missouri

PREVIOUS CROP: wheat
PLANTING DATE: September 10, 2003
HARVEST DATE: June 22, 2004

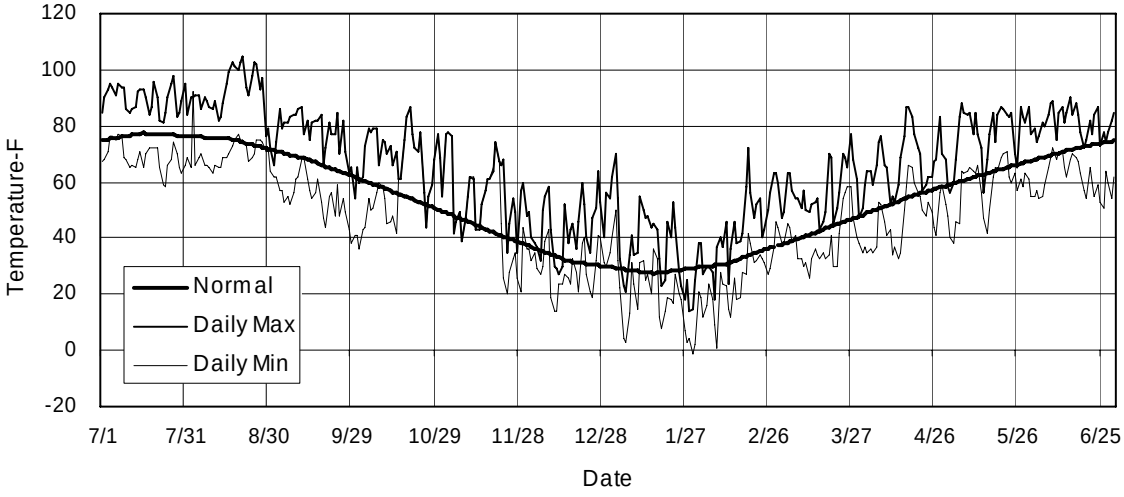
PESTICIDES:
Prowl, Sept. 10 (herbicide)

SOIL TEST:
not available

FERTILIZATION
Fall: 50–40–50 at planting
Spring: 45–0–0

SEEDING RATE: 8 lb/a
ROW SPACING: 7.5 in
IRRIGATION: none
SOIL TYPE: Mexico silt loam

ELEVATION: 870 ft
LATITUDE: 38° 32' N
AVG. WINTER SURVIVAL: 85%
AVERAGE YIELD: 972 lb/a



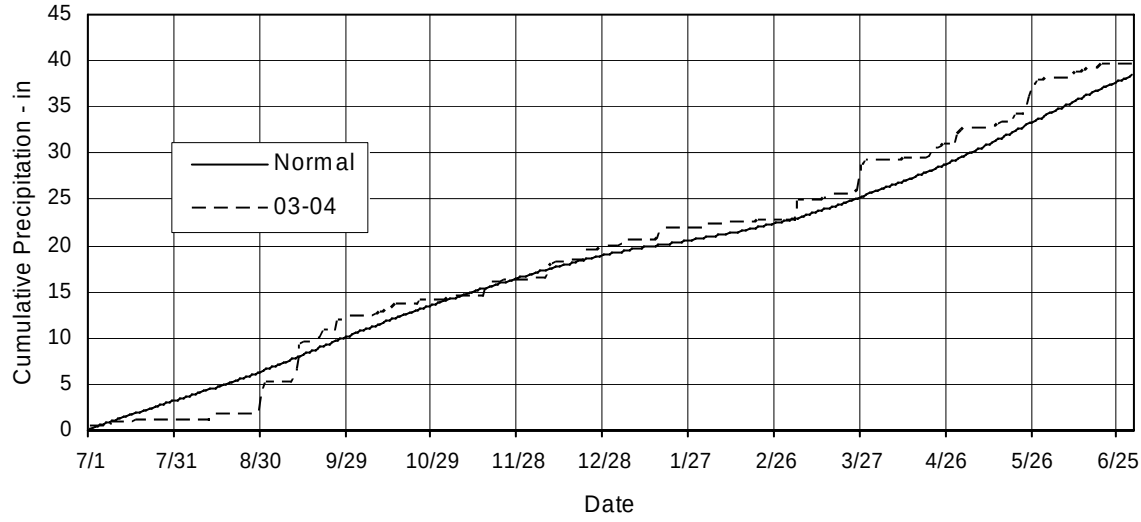


Table 11. Results from the 2004 National Winter Canola Variety Trial, Columbia, MO.

Line	Yield			Winter Survival			Fall	50%	Matur-	Plant	Lodg-	Shat-	Test	Total
	2004	2yr 1/	3yr 2/	2004	2yr 1/	3yr 2/	Stand	Bloom 3/	ity 3/	Height 4/	ing	tering	Weight	Oil
	lb/ac			%			%	date	date	in.	%	%	lb/bu	%
KS9124	1600 *	----	----	95 *	----	----	97	4/19 l	6/14 l	51 t	0 *	0	----	40.7 *
Banjo	1515 *	962	1359	92 *	91 *	91 *	95	4/16 e	6/9	48 t	2 *	0	----	41.4 *
KS9183	1493 *	----	----	93 *	----	----	88	4/16 e	6/9	49 t	0 *	0	----	40.0
KS7436	1457 *	1130	1499 *	93 *	88 *	88 *	97	4/18	6/13 l	50 t	0 *	0	----	41.7 *
VSX-2	1363 *	----	----	88 *	----	----	98	4/17 e	6/11	45 s	0 *	0	----	42.1 *
VSX-1	1330 *	1511 *	1707 *	82	82	79	98	4/17	6/13 l	46 s	0 *	0	----	41.4 *
Jetton	1237 *	1334 *	1612 *	78	82	79	95	4/16 e	6/12 l	45 s	0 *	0	----	41.8 *
Kronos	1221 *	----	----	88 *	----	----	95	4/18	6/12 l	49 t	3 *	0	----	41.0 *
KS9135	1221 *	----	----	93 *	----	----	87	4/18	6/10	48 t	0 *	0	----	41.5 *
Wichita	1208 *	810	996	93 *	85	83	97	4/16 e	6/10	46 s	8 *	0	----	39.2
Abilene	1134	966	1130	90 *	83	81	92	4/16 e	6/10	49 t	3 *	0	----	38.8
Ceres	1081	1150	1366	83	83	85 *	87	4/19	6/10	52 t	0 *	0	----	40.6
Casino	1071	812	1101	88 *	88 *	85 *	88	4/18	6/13 l	52 t	0 *	0	----	39.5
Rasmus	1070	----	----	90 *	----	----	92	4/17 e	6/12 l	48 t	0 *	0	----	41.9 *
ARC91019-50-E2	1065	950	----	88 *	86 *	----	93	4/17 e	6/11	51 t	3 *	2	----	41.0 *
SW 013173	1053	----	----	87	----	----	95	4/18	6/10	51 t	0 *	0	----	40.4
ARC92007-2	1048	----	----	85	----	----	93	4/18	6/11	51 t	5 *	0	----	40.3
Plainsman	981	926	1131	92 *	76	75	93	4/20 l	6/14 l	52 t	0 *	0	----	37.3
ARC90016-PR377	969	1127	1165	92 *	88 *	84	93	4/17 e	6/12 l	51 t	0 *	2	----	40.7 *
KS8367	884	658	796	88 *	83	82	90	4/18	6/10	47 s	22	0	----	39.3
Sumner	881	869	1006	87	82	81	87	4/16 e	6/6 e	48 t	0 *	0	----	39.7
ARC92004-1	856	----	----	85	----	----	93	4/20 l	6/12 l	52 t	0 *	2	----	40.7 *
Talent	765	----	----	70	----	----	97	4/17 e	6/11	50 t	2 *	0	----	40.6
Titan	760	----	----	87	----	----	97	4/17 e	6/12 l	49 t	32	3	----	40.5
KS2427	749	----	----	80	----	----	90	4/19 l	6/15 l	47 s	0 *	0	----	38.3
Viking	726	----	----	83	----	----	92	4/16 e	6/7 e	42 s	5 *	0	----	39.4
SW 013022	725	----	----	78	----	----	93	4/18	6/8 e	44 s	7 *	0	----	41.4 *
SW 013154	656	----	----	85	----	----	90	4/19	6/10	52 t	2 *	0	----	39.1
SW 013186	632	----	----	85	----	----	87	4/18	6/9	46 s	8 *	0	----	41.0 *
Maestro	622	----	----	82	----	----	92	4/17 e	6/6 e	47 s	35	0	----	39.3
SW 013121	610	----	----	80	----	----	95	4/21 l	6/8 e	48 t	23	2	----	38.9
Wotan	569	----	----	82	----	----	92	4/19	6/10	48 t	43	3	----	38.3
SW 013062	540	----	----	77	----	----	95	4/19 l	6/10	48 t	38	2	----	40.9 *
SW 013253	470	----	----	75	----	----	93	4/21 l	6/10	48 t	48	0	----	40.3
SW 013211	457	----	----	73	----	----	95	4/18	6/8 e	52 t	22	2	----	39.8
Mean	972	872	1093	85	82	80	93	4/18	6/10	48 t	9 *	0	----	40.2
LSD (.05)	433	324	298	8	6	7	NS	1	3	4	19	NS	----	1.5
CV (%)	27.3	33	30	5.9	6	8	5.6	0.7	1.2	5.6	130.6	376.7	----	1.9

* Upper LSD group - Differences among those marked with an asterisk are not statistically significant.

1/ 2yr means include data from 2003 and 2004.

2/ 3yr means include data from 2002, 2003, and 2004.

3/ Values marked "e" are not statistically different from the earliest value; those marked "l" are not statistically different from the latest.

4/ Values marked "s" are not statistically different from the shortest value; those marked "t" are not statistically different from the tallest.

CUSTAR, OH

COOPERATOR: Ed Lentz,
Ohio State University

PREVIOUS CROP: wheat
PLANTING DATE: September 9, 2003
HARVEST DATE: July 8, 2004

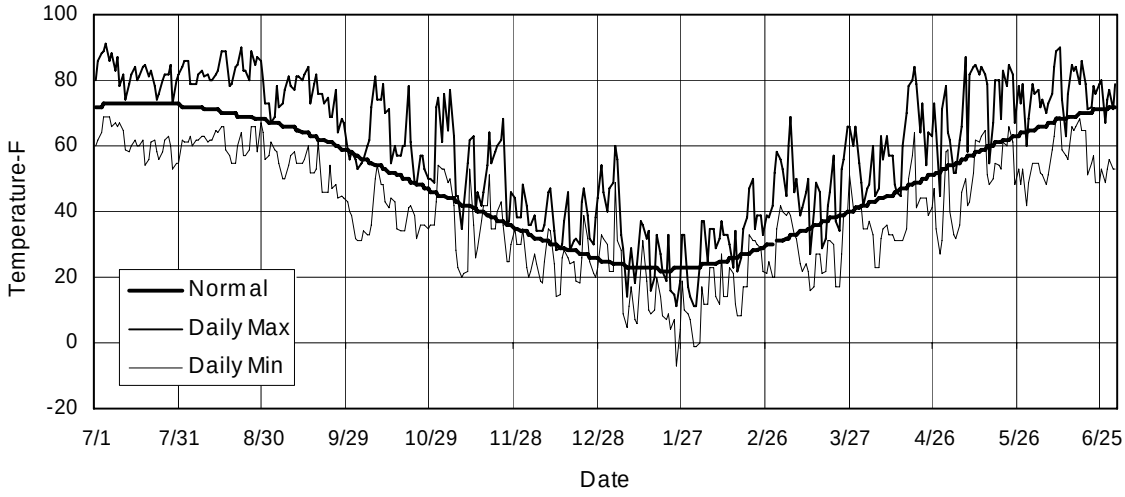
PESTICIDES:
6 oz Select (herbicide)

SOIL TEST:
not available

FERTILIZATION
Fall: 30–0–0
Spring: 90–0–0

SEEDING RATE: 6 lb/a
ROW SPACING: 7 inches
IRRIGATION: none
SOIL TYPE: Hoytville clay

ELEVATION: 797 ft
LATITUDE: 41° 01' N
AVG. WINTER SURVIVAL: 95%
AVERAGE YIELD: 2607 lb/a



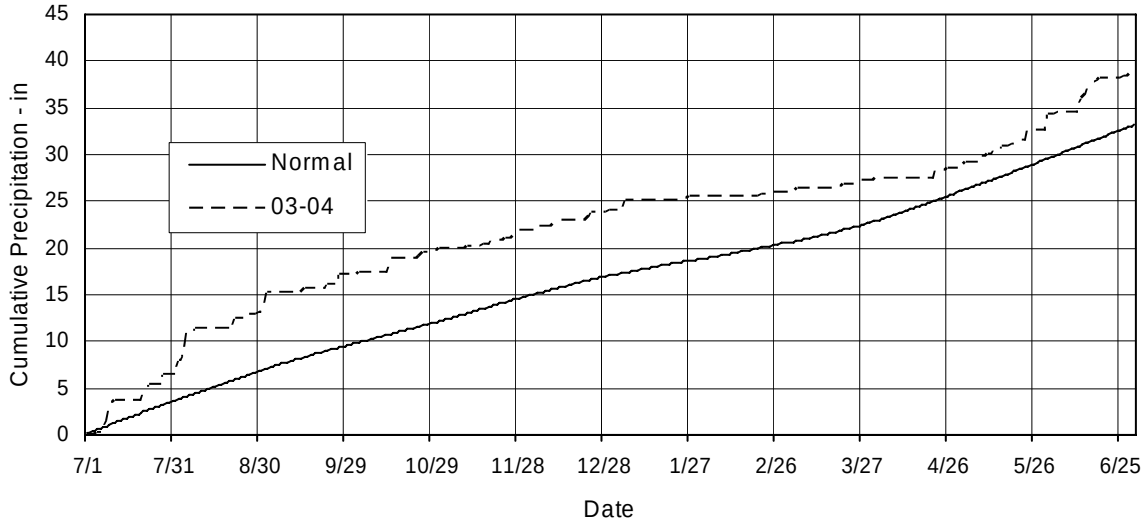


Table 12. Results from the 2004 National Winter Canola Variety Trial, Custar, OH.

Line	Yield			Winter Survival			Fall	50%	Matur-	Plant	Lodg-	Shat-	Test	Total
	2004	2yr 1/	3yr 2/	2004	2yr 1/	3yr 2/	Stand	Bloom 3/	ity 3/	Height 4/	ing	tering	Weight	Oil
	lb/ac			%			%	date	date	in.	%	%	lb/bu	%
Banjo	3214 *	----	----	98	----	----	53	----	7/3 e	35	0	0	----	----
Kronos	3204 *	----	----	98	----	----	57	----	7/7 l	35 t	0	0	----	----
Abilene	3083 *	----	----	97	----	----	63	----	6/29 e	37 t	0	0	----	----
Jetton	2837 *	----	----	97	----	----	63	----	7/5	30 s	0	0	----	----
KS8367	2826 *	----	----	97	----	----	63	----	7/1 e	39 t	0	0	----	----
Ceres	2803 *	----	----	98	----	----	57	----	7/1 e	36 t	0	0	----	----
Maestro	2793 *	----	----	98	----	----	53	----	7/5	37 t	0	0	----	----
KS9135	2786 *	----	----	95	----	----	67	----	7/2 e	38 t	0	0	----	----
VSX-2	2779 *	----	----	95	----	----	67	----	7/3 e	34 s	0	0	----	----
VSX-1	2734	----	----	93	----	----	60	----	7/3	33 s	0	0	----	----
ARC91019-50-E2	2708	----	----	92	----	----	67	----	7/5	39 t	0	0	----	----
Titan	2688	----	----	100	----	----	53	----	7/4	40 t	0	0	----	----
KS9183	2612	----	----	93	----	----	60	----	7/1 e	38 t	0	0	----	----
Talent	2595	----	----	97	----	----	57	----	7/7 l	40 t	0	0	----	----
KS7436	2585	----	----	97	----	----	60	----	7/1 e	40 t	0	0	----	----
Wichita	2560	----	----	95	----	----	60	----	7/1 e	36 t	0	0	----	----
ARC92007-2	2554	----	----	92	----	----	67	----	7/3	38 t	0	0	----	----
Plainsman	2516	----	----	95	----	----	67	----	7/2 e	38 t	0	0	----	----
ARC90016-PR377	2488	----	----	88	----	----	60	----	7/8 l	37 t	0	0	----	----
KS9124	2450	----	----	95	----	----	63	----	7/4	37 t	0	0	----	----
Rasmus	2407	----	----	97	----	----	57	----	7/8 l	36 t	0	0	----	----
ARC92004-1	2370	----	----	90	----	----	60	----	7/6	35 t	0	0	----	----
Casino	2331	----	----	95	----	----	57	----	7/6	39 t	0	0	----	----
Wotan	2283	----	----	90	----	----	57	----	7/5	36 t	0	0	----	----
Viking	2253	----	----	98	----	----	50	----	7/1 e	29 s	0	0	----	----
KS2427	1312	----	----	82	----	----	57	----	7/10 l	37 t	0	0	----	----
Mean	2607	----	----	95	----	----	60	----	7/4	36	0	0	----	----
LSD (.05)	462	----	----	NS	----	----	NS	----	4	5	----	----	----	----
CV (%)	10.8	----	----	6.0	----	----	12.5	----	1.3	8.4	----	----	----	----

* Upper LSD group - Differences among those marked with an asterisk are not statistically significant.

1/ 2yr means include data from 2003 and 2004.

2/ 3yr means include data from 2002, 2003, and 2004.

3/ Values marked "e" are not statistically different from the earliest value; those marked "l" are not statistically different from the latest.

4/ Values marked "s" are not statistically different from the shortest value; those marked "t" are not statistically different from the tallest.

FREMONT, OH

COOPERATOR: Ed Lentz,
Ohio State University

PREVIOUS CROP: fallow
PLANTING DATE: September 11, 2003
HARVEST DATE: July 9, 2004

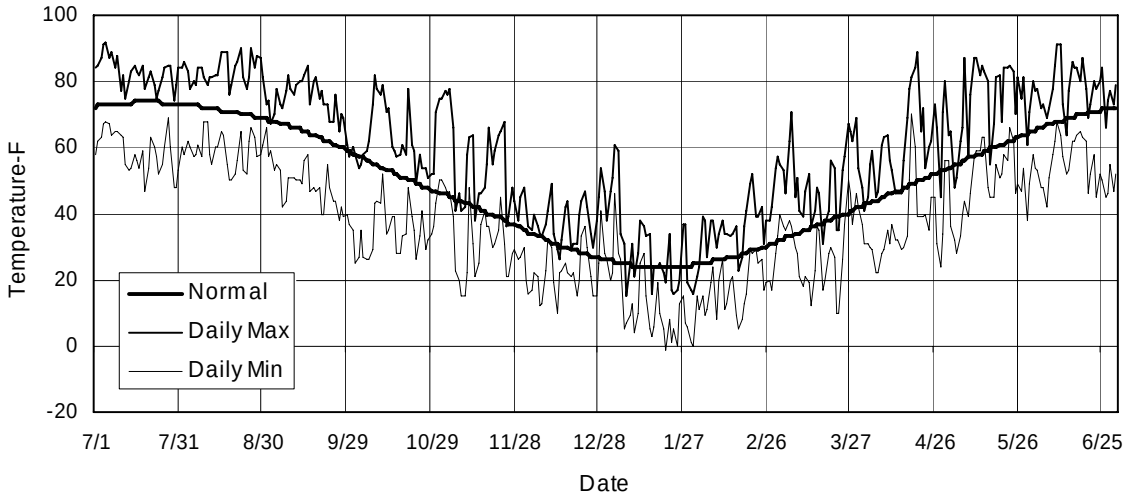
PESTICIDES:
none

SOIL TEST:
not available

FERTILIZATION
Fall: 150–150–0 150 Potash
Spring: 0–0–0

SEEDING RATE: 6 lb/a
ROW SPACING: 7 inches
IRRIGATION: none
SOIL TYPE: Hoytville silty clay loam

ELEVATION: 636 ft
LATITUDE: 41° 21' N
AVG. WINTER SURVIVAL: 84%
AVERAGE YIELD: 2895 lb/a



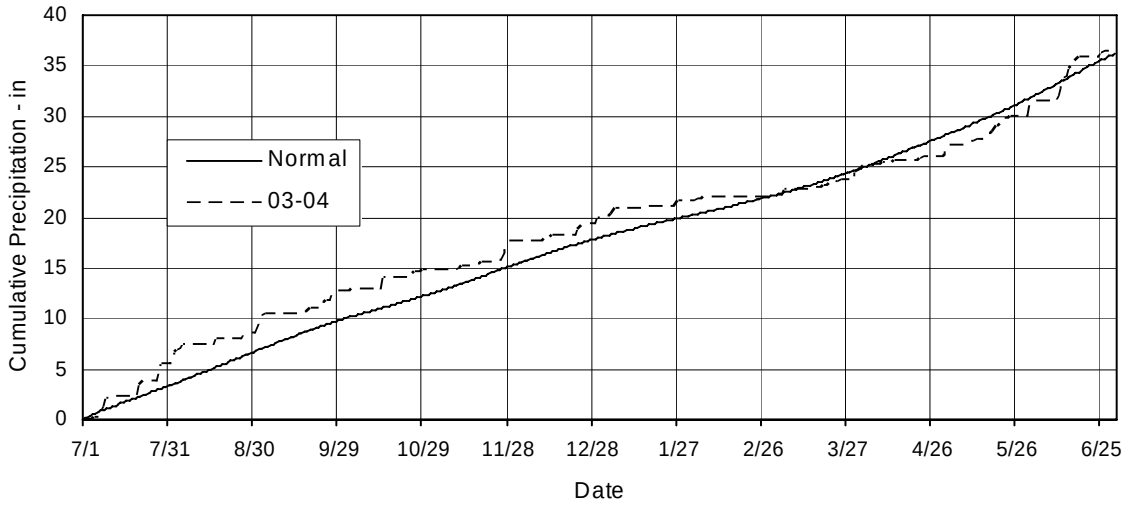


Table 13. Results from the 2004 National Winter Canola Variety Trial, Fremont, OH.

Line	Yield			Winter Survival			Fall	50%	Matur-	Plant	Lodg-	Shat-	Test	Total
	2004	2yr 1/	3yr 2/	2004	2yr 1/	3yr 2/	Stand	Bloom 3/	ity 3/	Height 4/	ing	tering	Weight	Oil
	lb/ac			%			%	date	date	in.	%	%	lb/bu	%
Banjo	3587 *	----	----	85 *	----	----	97 *	5/3	6/30	48 t	0	0	----	39.1 *
KS9135	3304 *	----	----	83	----	----	100 *	5/5	6/27 e	52 t	0	0	----	39.1 *
VSX-2	3293 *	----	----	75	----	----	90 *	5/7	6/29 e	40 s	0	0	----	37.6
VSX-1	3252 *	----	----	78	----	----	93 *	4/28	6/27 e	38 s	0	0	----	39.0
Rasmus	3197 *	----	----	85 *	----	----	93 *	5/2	7/3 l	42 s	0	0	----	39.5 *
Jetton	3159 *	----	----	77	----	----	100 *	5/4	7/1 l	41 s	0	0	----	38.8
Casino	3124 *	----	----	92 *	----	----	93 *	5/6	6/29 e	49 t	0	0	----	37.8
KS9124	3051 *	----	----	93 *	----	----	87	5/6	6/30	49 t	0	0	----	38.4
Wichita	2962	----	----	87 *	----	----	97 *	5/5	6/26 e	47 t	0	0	----	38.1
Plainsman	2959	----	----	93 *	----	----	93 *	5/8	6/27 e	48 t	0	0	----	37.7
KS9183	2941	----	----	93 *	----	----	93 *	5/2	6/26 e	48 t	0	0	----	38.8
ARC92004-1	2909	----	----	85 *	----	----	97 *	5/7	7/4 l	50 t	0	0	----	37.4
Kronos	2871	----	----	67	----	----	100 *	5/5	7/2 l	50 t	0	0	----	37.8
Titan	2837	----	----	87 *	----	----	93 *	5/2	6/29 e	48 t	0	0	----	41.0 *
ARC90016-PR377	2836	----	----	77	----	----	93 *	5/6	7/4 l	48 t	0	0	----	39.5 *
Ceres	2796	----	----	77	----	----	97 *	5/4	6/28 e	42 s	0	0	----	39.6 *
Viking	2794	----	----	82	----	----	97 *	4/30	6/28 e	41 s	0	0	----	40.5 *
KS8367	2772	----	----	92 *	----	----	97 *	5/6	6/26 e	49 t	0	0	----	38.7
Talent	2766	----	----	85 *	----	----	87	5/4	7/2 l	47 t	0	0	----	38.3
Wotan	2701	----	----	87 *	----	----	93 *	5/5	6/29 e	49 t	5	0	----	38.2
KS7436	2688	----	----	83	----	----	93 *	5/5	6/28 e	49 t	0	0	----	39.9 *
ARC91019-50-E2	2674	----	----	85 *	----	----	97 *	5/5	7/3 l	52 t	0	0	----	38.5
Abilene	2647	----	----	100 *	----	----	80	5/4	6/28 e	42 s	0	0	----	38.3
Maestro	2501	----	----	75	----	----	93 *	5/3	6/30	45	0	0	----	38.4
ARC92007-2	2434	----	----	73	----	----	100 *	5/3	7/4 l	44 s	0	0	----	39.9 *
KS2427	2209	----	----	93 *	----	----	67	5/2	7/5 l	46	0	0	----	36.8
Mean	2895	----	----	84	----	----	93	5/4	6/30	46	0	0	----	38.7
LSD (.05)	606	----	----	16	----	----	13	NS	4	6	3	----	----	1.9
CV (%)	12.75	----	----	11.88	----	----	8.22	2.93	1.27	7.42	883.2	----	----	2.4

* Upper LSD group - Differences among those marked with an asterisk are not statistically significant.

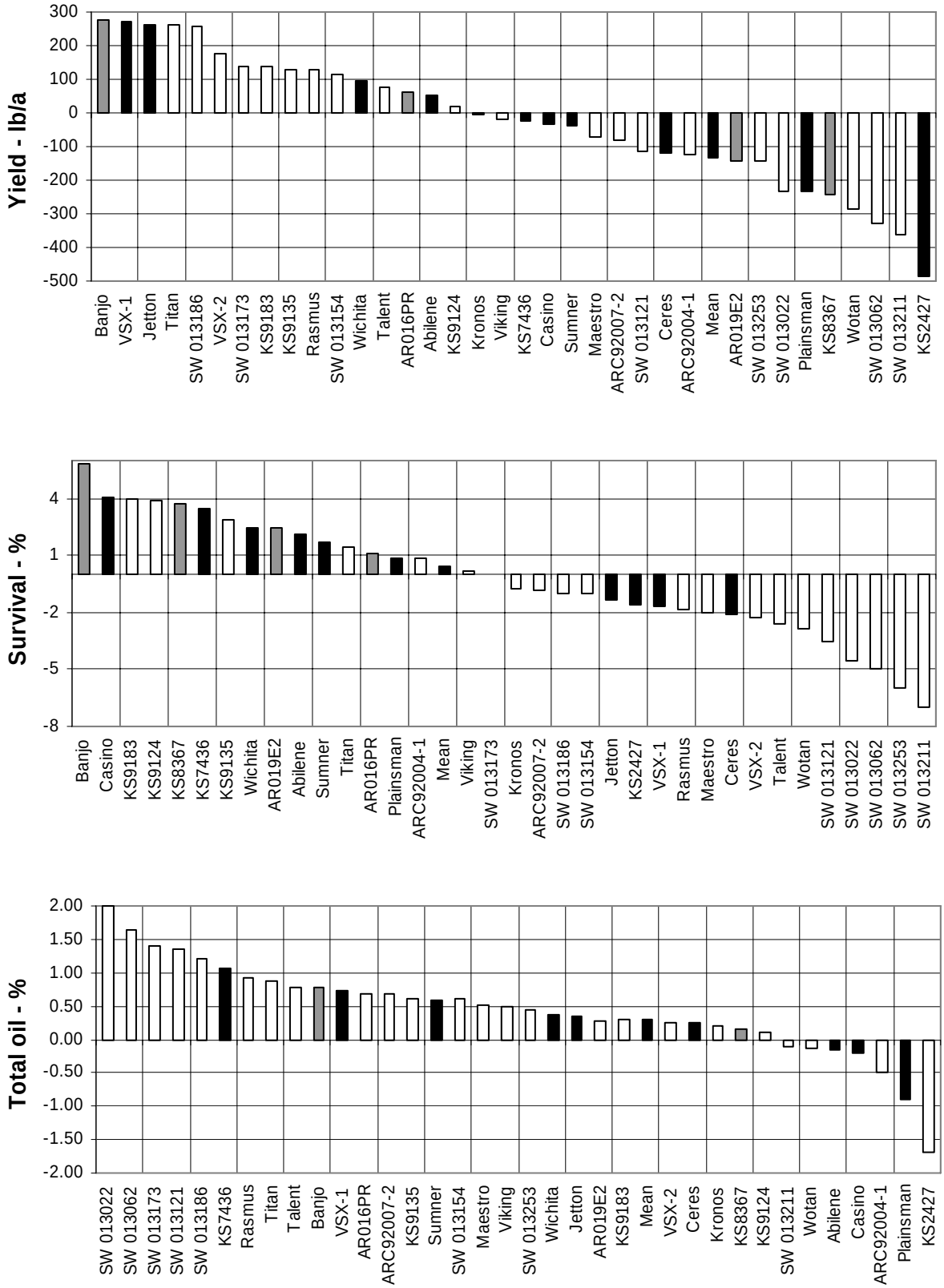
1/ 2yr means include data from 2003 and 2004.

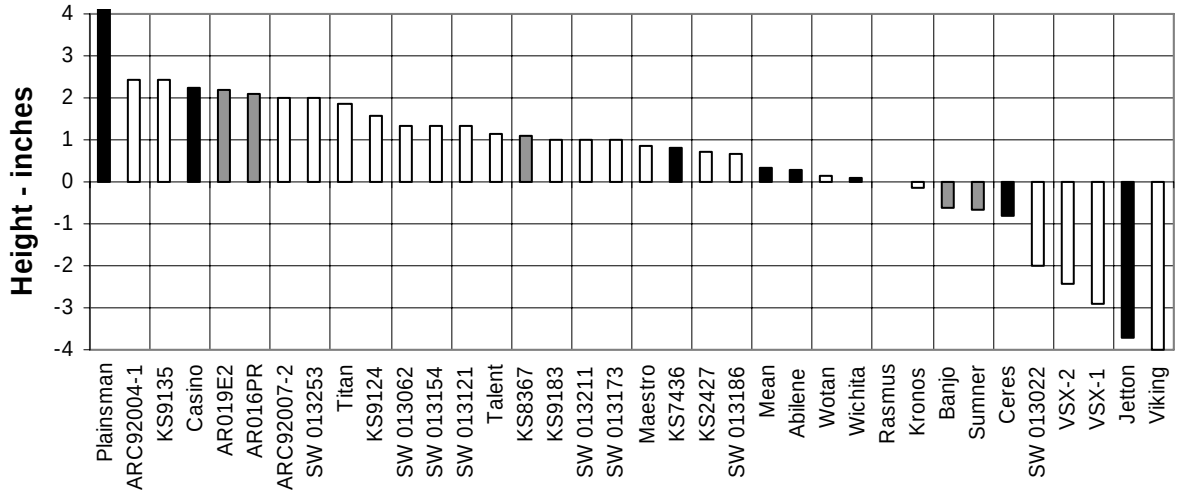
2/ 3yr means include data from 2002, 2003, and 2004.

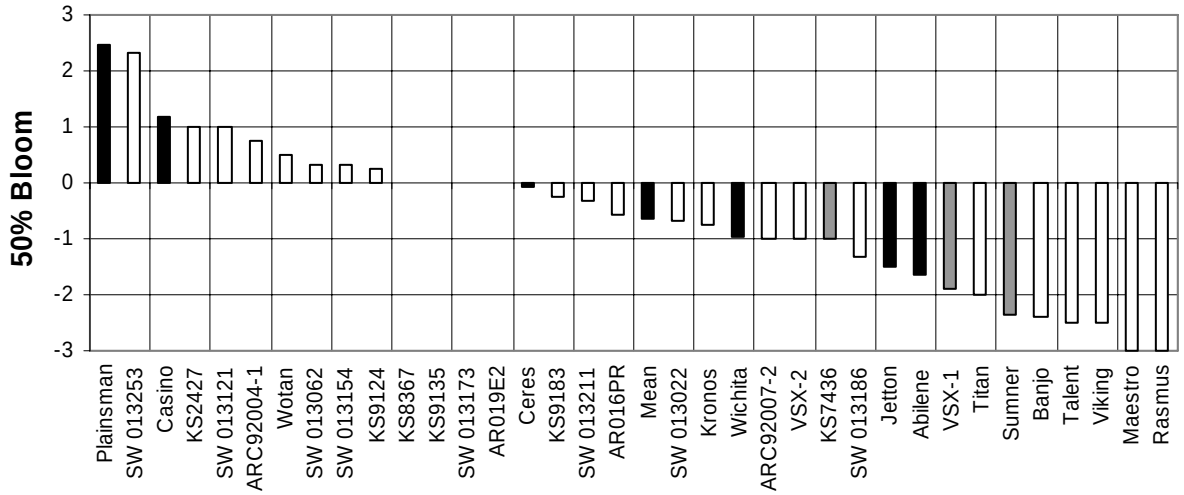
3/ Values marked "e" are not statistically different from the earliest value; those marked "l" are not statistically different from the latest.

4/ Values marked "s" are not statistically different from the shortest value; those marked "t" are not statistically different from the tallest.

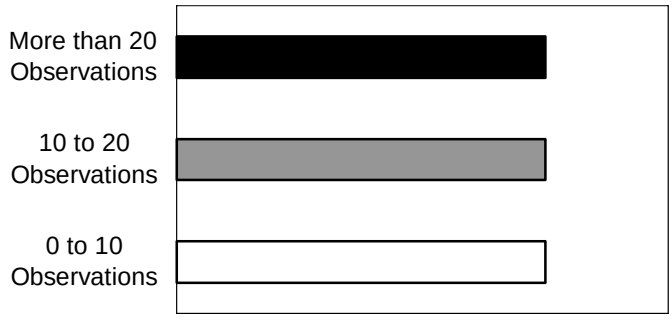
Figure 2. Midwest Winter Canola Summary, 1996-2004.







Note: Values are averages of the differences between each cultivar and the mean of Jetton, Ceres, Plainsman, and Wichita for yield (lb/a), winter survival (%), total oil content (%), plant height (inches), and 50% bloom date (days). The number of observations for each trait is represented by the different colors of the bars (as shown at the right).



COLBY, KS

COOPERATORS: Pat Evans and Rob Aiken, KSU Northwest Res.-Ext. Center

PREVIOUS CROP: fallow
PLANTING DATE: August 22, 2003
HARVEST DATE: July 6, 2004

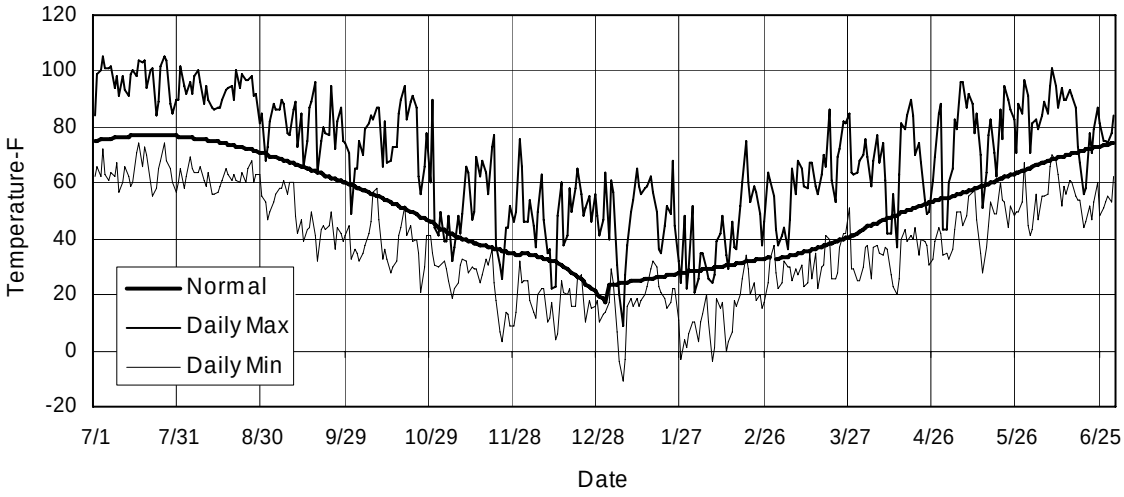
PESTICIDES:
Treflan (herbicide)

SOIL TEST:
not available

FERTILIZATION
Fall: 70–30–0 on Aug 23
Spring: 0–0–0

SEEDING RATE: 5 lb/a
ROW SPACING: 12 in
IRRIGATION: 0.43 at planting
SOIL TYPE: Keith silt loam

ELEVATION: 3170 ft
LATITUDE: 39° 29' N
AVG. WINTER SURVIVAL: 44%
AVERAGE YIELD: 528 lb/a



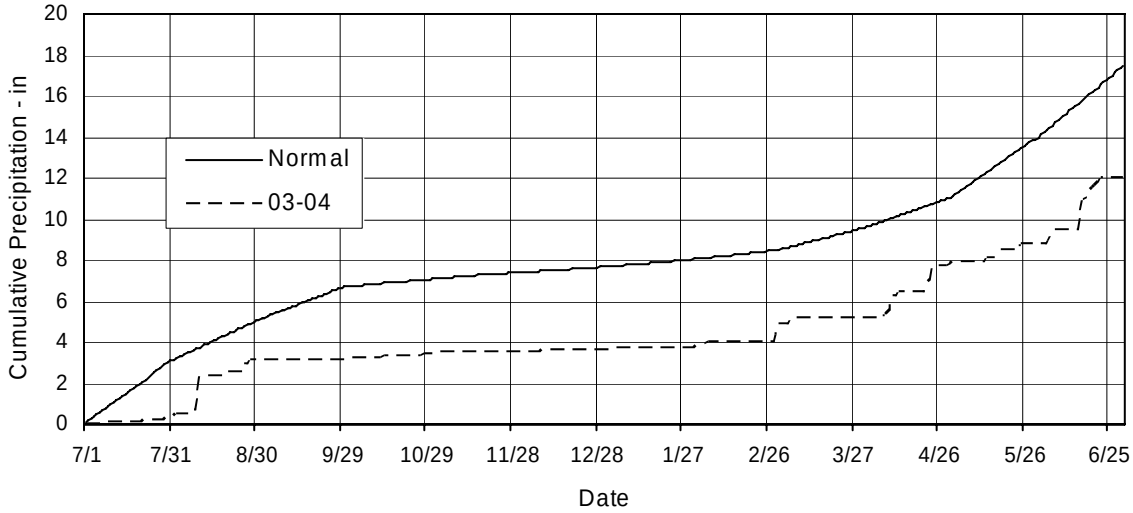


Table 14. Results from the 2004 National Winter Canola Variety Trial, Colby, KS.

Line	Yield 2004	Yield 2yr 1/	Yield 3yr 2/	Winter Survival 2004	Winter Survival 2yr 1/	Winter Survival 3yr 2/	Fall Stand	50% Bloom 3/	Maturity 3/	Plant Height 4/	Lodging	Shattering	Test Weight	Total Oil
	lb/ac	lb/ac	lb/ac	%	%	%	%	date	date	in.	%	%	lb/bu	%
Abilene	1370 *	976 *	1111 *	62 *	79 *	86 *	100	5/1 e	6/28 e	37 st	0	17 *	43.9 *	35.0 *
Sumner	1015 *	882 *	----	57 *	78 *	----	100	5/1 e	6/28 e	35 s	0	22 *	44.7 *	33.7 *
Casino	1008 *	1097 *	1181 *	55 *	76 *	84 *	100	5/2 e	7/3 e	42 t	0	28	43.8 *	33.7 *
ARC91019-50-E2	841	1231 *	----	38	69	----	100	5/1 e	6/30 e	37 st	0	18 *	42.8	33.8 *
Wichita	815	892 *	957 *	68 *	84 *	89 *	100	5/1 e	6/28 e	36 st	0	13 *	41.1	33.8 *
Banjo	781	1209 *	----	38	69	----	100	5/2 e	7/5 l	37 st	0	23 *	41.4	34.2 *
Viking	754	----	----	53 *	----	----	99	5/2 e	6/30 e	35 s	0	20 *	44.9 *	34.8 *
KS2004	735	----	----	58 *	----	----	100	5/1 e	6/30 e	39 t	0	13 *	43.1 *	33.7 *
KS9183	723	----	----	65 *	----	----	100	5/1 e	6/30 e	39 t	0	18 *	44.8 *	34.4 *
SW 013154	719	----	----	48 *	----	----	99	5/2 e	6/28 e	37 st	0	17 *	43.2 *	34.7 *
KS9135	633	----	----	62 *	----	----	100	5/1 e	6/30 e	42 t	0	18 *	41.2	33.5 *
Rasmus	621	----	----	50 *	----	----	99	5/1 e	7/3 e	40 t	0	17 *	42.0	34.6 *
SW 013173	567	----	----	57 *	----	----	99	5/1 e	6/30 e	38 t	0	25	38.7	34.4 *
Jetton	560	1056 *	1092 *	25	62	75	100	5/2 e	7/5 l	34 s	0	10 *	41.8	33.6 *
KS2002	559	----	----	77 *	----	----	100	5/1 e	6/28 e	42 t	0	30	43.1 *	36.0 *
Ceres	554	556	747	57 *	73 *	82 *	99	5/2 e	7/5 l	40 t	0	32	41.9	33.6 *
KS7436	554	1157 *	----	38	69	----	99	5/3 e	7/5 l	39 t	0	27	42.9	33.1
VSX-2	540	----	----	37	----	----	100	5/4	7/8 l	34 s	0	25	42.5	33.1
KS9124	507	----	----	65 *	----	----	100	5/3	7/3 e	39 t	0	20 *	44.8 *	34.8 *
KS8367	455	1117 *	----	52 *	75 *	----	83	5/1 e	6/30 e	40 t	0	17 *	40.1	33.6 *
ARC90016-PR377	395	908 *	----	30	64	----	99	5/2 e	7/10 l	36 s	0	33	42.0	33.4 *
Maestro	388	----	----	37	----	----	100	5/2 e	6/30 e	38 t	0	20 *	45.0 *	35.6 *
Talent	376	----	----	40	----	----	100	5/1 e	7/5 l	35 s	0	25	43.8 *	33.2
Kronos	373	----	----	15	----	----	100	5/4	7/12 l	37 st	0	30	43.3 *	30.1
Titan	365	----	----	13	----	----	99	5/5 l	7/12 l	32 s	0	33	44.3 *	33.6 *
Plainsman	365	437	659	73 *	86 *	91 *	100	5/2 e	7/3 e	39 t	0	20 *	42.1	33.9 *
SW 013121	348	----	----	22	----	----	100	5/4	7/10 l	34 s	0	28	45.8 *	31.8
Wotan	327	----	----	33	----	----	100	5/2 e	7/8 l	38 t	0	32	43.8 *	31.4
SW 013062	324	----	----	32	----	----	100	5/3 e	7/12 l	36 st	0	38	42.7	32.9
ARC92007-2	289	----	----	32	----	----	100	5/4	7/10 l	34 s	0	25	43.0	34.1 *
ARC92004-1	283	----	----	45 *	----	----	100	5/6 l	7/10 l	39 t	0	32	42.4	32.1
SW 013186	263	----	----	17	----	----	100	5/7 l	7/12 l	34 s	0	22 *	45.7 *	33.8 *
SW 013022	257	----	----	15	----	----	100	5/4	7/10 l	31 s	0	25	45.0 *	32.7
KS2427	241	----	----	65 *	----	----	99	5/4	7/8 l	37 st	0	28	43.8 *	33.2
SW 013211	62	----	----	32	----	----	99	5/3	7/8 l	36 s	0	33	43.1 *	27.7
SW 013253	35	----	----	17	----	----	99	5/4	7/8 l	35 s	0	20 *	43.1 *	32.2
Mean	528	849	906	44	71	81	99	5/2	7/4	37	0	24	43.1	33.44
LSD (.05)	502	425	297	32	17	12	NS	2	7	6	NS	14	2.7	2.6
CV (%)	58.3	46	36	45.1	24	24	4.9	1.0	2.3	10.1	---	35.4	3.9	3.86

* Upper LSD group - Differences among those marked with an asterisk are not statistically significant.

1/ 2yr means include data from 2003 and 2004.

2/ 3yr means include data from 2000, 2003, and 2004.

3/ Values marked "e" are not statistically different from the earliest value; those marked "l" are not statistically different from the latest.

4/ Values marked "s" are not statistically different from the shortest value; those marked "t" are not statistically different from the tallest.

HUTCHINSON, KS

COOPERATOR: William Heer, South Central Exp. Field, Kansas State University

PREVIOUS CROP: Cotton
PLANTING DATE: September 19, 2003
HARVEST DATE: June 23 &29, 2004

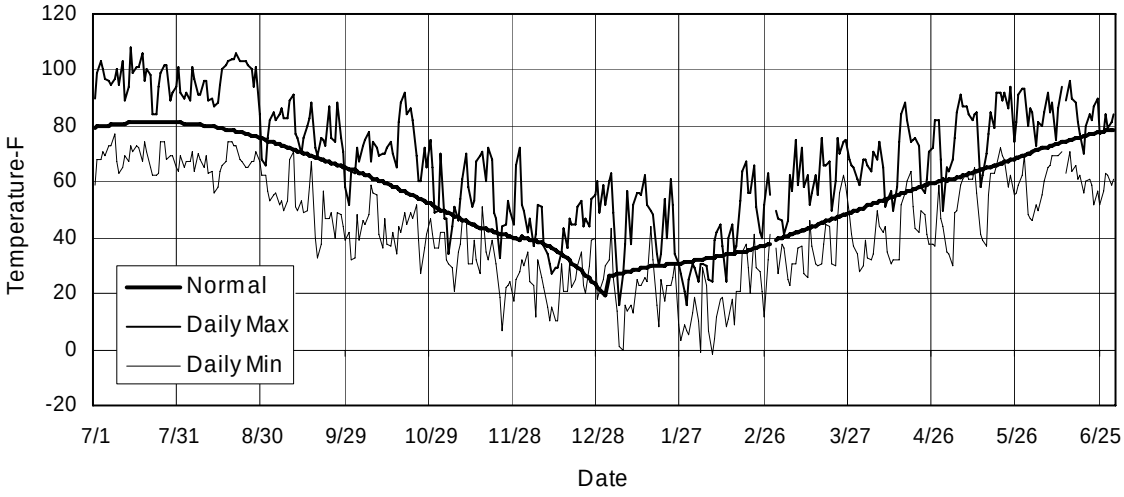
PESTICIDES:
Mustang, 4 oz/a, (insecticide)

SOIL TEST
not available

FERTILIZATION
Fall: 50–40–0
Spring: 0–0–0

SEEDING RATE: 5 lb/a
ROW SPACING: 8 in
IRRIGATION: none
SOIL TYPE: Ost silt loam

ELEVATION: 1570 ft
LATITUDE: 37° 56' N
AVG. WINTER SURVIVAL: 100%
AVERAGE YIELD: 2896 lb/a



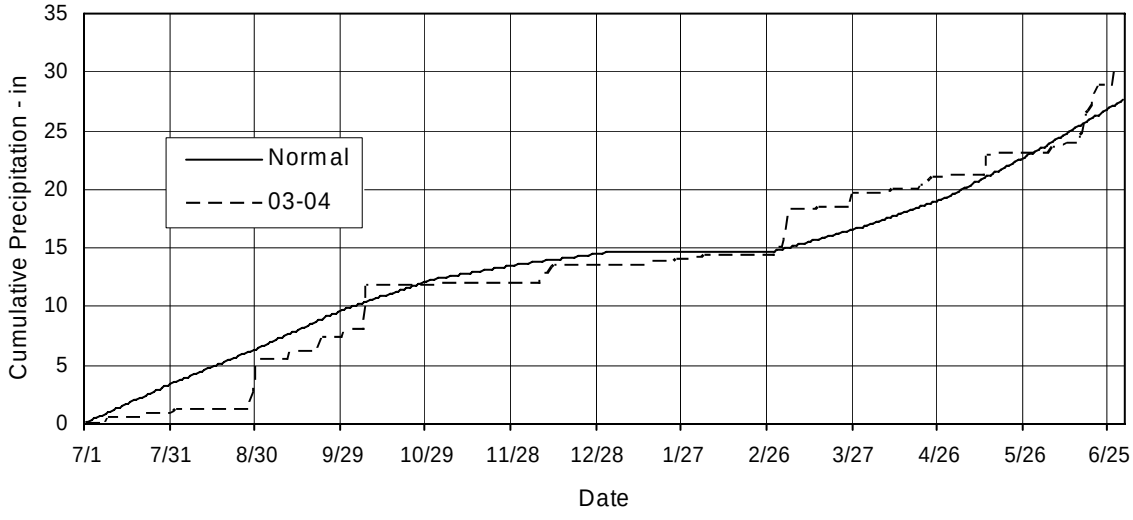


Table 15. Results from the 2004 National Winter Canola Variety Trial, Hutchinson, KS.

Line	Yield			Winter Survival			Fall	50%	Matur-	Plant	Lodg-	Shat-	Test	Total
	2004	2yr 1/	3yr 2/	2004	2yr 1/	3yr 2/	Stand	Bloom 3/	ity 3/	Height 4/	ing	tering	Weight	Oil
	lb/ac			%			%	date	date	in.	%	%	lb/bu	%
Wotan	3390 *	----	----	100	----	----	95 *	4/17	----	63 t	0	0 *	50.2	35.2
Titan	3356 *	----	----	100	----	----	97 *	4/13	----	63 t	0	1 *	52.1	36.7 *
Wichita	3307 *	3385 *	2551 *	100	100	89 *	100 *	4/13	----	60	0	1 *	53.0	36.4 *
Maestro	3294 *	----	----	100	----	----	92	4/14	----	64 t	0	2	52.7	37.2 *
Kronos	3264 *	----	----	100	----	----	100 *	4/15	----	63 t	2	3	52.6	34.8
VSX-2	3236 *	----	----	100	----	----	95 *	4/14	----	58 s	0	1 *	52.5	35.6
Banjo	3111 *	2942	2293 *	100	100	85 *	97 *	4/13	----	62	0	1 *	52.9	36.5 *
VSX-1	3105 *	3305 *	2230	100	100	70	97 *	4/15	----	56 s	0	0 *	52.4	35.5
ARC90016-PR377	3098 *	2613	1866	100	100	75	97 *	4/15	----	65 t	0	2	52.4	36.6 *
Abilene	3090 *	3348 *	2408 *	100	100	88 *	93 *	4/15	----	61	0	1 *	52.5	35.3
SW 013186	3055 *	----	----	100	----	----	92	4/14	----	60	0	1 *	53.0	36.5 *
Rasmus	3039 *	----	----	100	----	----	97 *	4/12	----	59 s	0	0 *	51.1	35.8
Sumner	3035 *	2966	2233	100	100	94 *	95 *	4/8 e	----	58 s	0	2	53.5 *	36.8 *
KS9135	3034 *	----	----	100	----	----	93 *	4/16	----	63 t	0	2 *	52.5	36.0
KS9124	3032 *	----	----	100	----	----	100 *	4/17	----	61	0	1 *	52.2	35.8
Jetton	3014	3352 *	2340 *	100	100	79	87	4/16	----	56 s	0	0 *	52.9	35.8
KS7436	3004	3055 *	2467 *	100	100	93 *	100 *	4/15	----	63 t	0	1 *	52.2	36.0
Viking	2981	----	----	100	----	----	93 *	4/13	----	58 s	0	1 *	53.8 *	36.7 *
ARC92007-2	2964	----	----	100	----	----	95 *	4/15	----	63 t	0	2	52.4	36.7 *
Talent	2952	----	----	100	----	----	92	4/13	----	61	0	1 *	53.2 *	35.8
SW 013121	2909	----	----	100	----	----	97 *	4/19 l	----	63 t	0	1 *	52.7	34.5
SW 013173	2850	----	----	100	----	----	98 *	4/17	----	58 s	0	3	52.5	35.8
SW 013154	2849	----	----	100	----	----	95 *	4/18 l	----	61	0	4	51.9	35.4
ARC91019-50-E2	2791	2585	----	100	100	----	97 *	4/14	----	64 t	8	2 *	52.4	36.3
ARC92004-1	2774	----	----	100	----	----	100 *	4/17	----	65 t	0	2 *	52.0	36.0
KS8367	2773	2824	2225	100	100	93 *	100 *	4/15	----	62	0	2	52.5	36.2
Ceres	2704	2959	2008	100	100	70	82	4/17	----	60	0	2	53.2 *	35.6
Plainsman	2632	2937	2402 *	100	100	98 *	100 *	4/18 l	----	63 t	33	1 *	51.1	35.7
KS9183	2497	----	----	100	----	----	98 *	4/13	----	61	2	5	52.9	34.8
SW 013062	2475	----	----	100	----	----	100 *	4/17	----	64 t	0	8	53.0	36.8 *
Casino	2434	2492	1932	100	100	95 *	95 *	4/18 l	----	61	0	0 *	50.3	35.7
SW 013022	2432	----	----	100	----	----	92	4/16	----	57 s	0	2 *	52.5	36.0
SW 013253	2385	----	----	100	----	----	93 *	4/19 l	----	62	0	1 *	53.1	34.9
SW 013211	2376	----	----	100	----	----	97 *	4/17	----	63 t	2	4	53.6 *	34.9
KS2427	2124	----	----	100	----	----	95 *	4/18 l	----	57 s	0	0 *	51.3	34.3
Mean	2896	2932	2149	100	100	82	96	4/15	----	61	1	2	52.4	35.8
LSD (.05)	374	0	0	NS	0	0	0	0	----	0	0	0	0.0	0.8
CV (%)	7.9	11	21	----	0	19	5	0.7	----	2.9	562	91.1	0.7	1.1

* Upper LSD group - Differences among those marked with an asterisk are not statistically significant.

1/ 2yr means include data from 2003 and 2004.

2/ 3yr means include data from 2002, 2003, and 2004.

3/ Values marked "e" are not statistically different from the earliest value; those marked "l" are not statistically different from the latest.

4/ Values marked "s" are not statistically different from the shortest value; those marked "t" are not statistically different from the tallest.

PARSONS, KS

COOPERATORS: James Long and Kelly Kusel, KSU Southeast Agric. Res. Center

PREVIOUS CROP: wheat
PLANTING DATE: September 10, 2003
HARVEST DATE: June 12, 2004

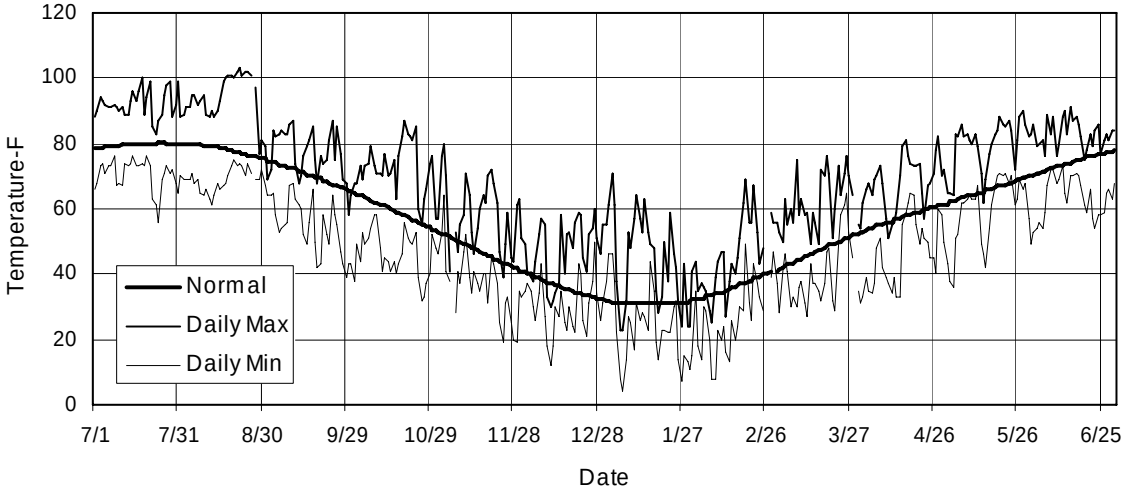
PESTICIDES:
Treflan, 1 qt on Sept. 10 (herbicide)

SOIL TEST
P = 32 ppm; K = 119 ppm; pH = 6.6

FERTILIZATION:
Fall: 80–50–50 on Sept. 9

SEEDING RATE: 5 lb/a
ROW SPACING: 7 inches
IRRIGATION: none
SOIL TYPE: Parson silt loam

ELEVATION: 900 ft
LATITUDE: 37° 21' N
AVG. WINTER SURVIVAL: 58%
AVERAGE YIELD: 1085 lb/a



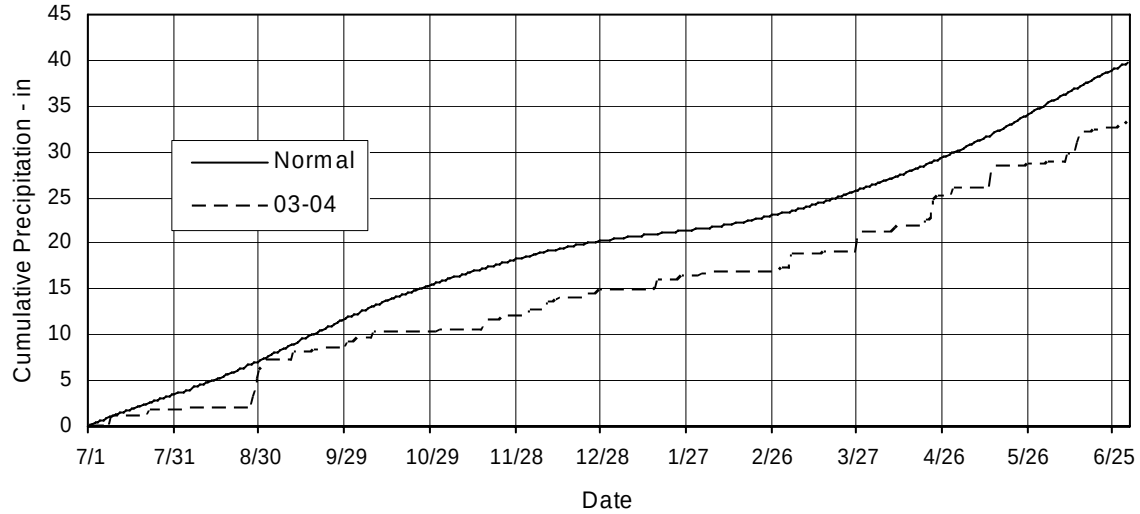


Table 16. Results from the 2004 National Winter Canola Variety Trial, Parsons, KS.

Line	Yield			Winter Survival			Fall	50%	Matur-	Plant	Lodg-	Shat-	Test	Total
	2004	2yr 1/	3yr 2/	2004	2yr 1/	3yr 2/	Stand	Bloom 3/	ity 3/	Height 4/	ing	tering	Weight	Oil
	lb/ac			%			%	date	date	in.	%	%	lb/bu	%
KS9135	1943 *	----	----	93 *	----	----	97 *	4/6 e	6/3 l	52	0	5	51.6 *	40.1 *
KS9124	1828 *	----	----	88 *	----	----	97 *	4/7 l	6/3 l	52	5	3	52.3 *	39.0 *
Plainsman	1755 *	2045 *	1739 *	72 *	75 *	78 *	100 *	4/8 l	6/3 l	50	3	5	51.4 *	39.0 *
Viking	1633 *	----	----	72 *	----	----	83 *	4/4 e	5/31 e	48	8	3	51.6 *	39.8 *
Ceres	1578 *	1766 *	1640 *	83 *	84 *	83 *	57	4/5 e	5/30 e	50	12	8	50.3 *	37.7
Rasmus	1488 *	----	----	63 *	----	----	73	4/4 e	6/1 el	48	17	10	50.6 *	39.7 *
KS2427	1457 *	----	----	87 *	----	----	83 *	4/6 el	6/3 l	51	17	18	48.9	37.9
VSX-1	1453 *	1741 *	1683 *	32	60	64	100 *	4/6 el	6/3 l	45	2	10	51.0 *	40.5 *
VSX-2	1426 *	----	----	37	----	----	97 *	4/6 e	6/1 el	47	10	7	51.7 *	39.4 *
Wichita	1414 *	1740 *	1592 *	87 *	88 *	88 *	90 *	4/5 e	5/30 e	51	42	15	51.4 *	38.7 *
Sumner	1378 *	1627 *	1406	68 *	79 *	82 *	100 *	4/4 e	5/30 e	48	18	7	51.2 *	40.2 *
ARC90016-PR377	1298 *	1782 *	----	48 *	63 *	----	97 *	4/5 e	6/3 l	52	13	5	51.0 *	39.5 *
KS8367	1186 *	1578	1547 *	87 *	87 *	87 *	100 *	4/5 e	6/1 el	51	37	12	50.7 *	39.2 *
KS9183	1182 *	----	----	57 *	----	----	97 *	4/4 e	5/30 e	51	10	27	50.2 *	38.6 *
ARC92007-2	1153 *	----	----	30	----	----	100 *	4/6 el	6/2 l	49	23	13	50.3 *	39.8 *
Banjo	1144 *	1865 *	1825 *	68 *	79 *	81 *	83 *	4/4 e	5/29 e	51	20	5	51.6 *	41.4 *
Jetton	1120	1739 *	1668 *	32	58	64	97 *	4/6 e	5/31 el	43	25	3	51.1 *	38.9 *
Wotan	1110	----	----	75 *	----	----	60	4/6 el	6/1 el	53	22	20	50.4 *	39.7 *
SW 013186	1015	----	----	70 *	----	----	73	4/4 e	5/29 e	49	20	7	50.7 *	40.4 *
ARC92004-1	1004	----	----	42	----	----	97 *	4/6 e	6/2 l	51	35	12	49.8	40.0 *
Casino	963	1520	1385	62 *	75 *	79 *	83 *	4/7 l	6/2 l	51	45	30	50.7 *	38.3
Titan	929	----	----	58 *	----	----	80 *	4/7 l	6/2 l	51	63	22	49.7	37.8
Abilene	887	1470	1328	90 *	88 *	86 *	70	4/5 e	5/30 e	50	37	22	50.4 *	39.8 *
SW 013211	875	----	----	34	----	----	93 *	4/8 l	6/2 l	49	30	33	51.3 *	39.4 *
SW 013173	841	----	----	67 *	----	----	97 *	4/6 el	5/31 el	48	35	42	51.2 *	39.4 *
KS7436	805	1569	1644 *	40	64 *	72 *	97 *	4/7 l	6/3 l	48	60	12	52.3 *	37.9
SW 013022	773	----	----	49 *	----	----	93 *	4/6 e	5/31 el	43	17	12	50.3 *	39.3 *
ARC91019-50-E2	676	1497	----	57 *	75 *	----	97 *	4/6 el	5/31 el	54	40	20	50.6 *	39.3 *
SW 013121	661	----	----	24	----	----	93 *	4/8 l	5/31 el	49	55	22	50.5 *	38.2
SW 013154	643	----	----	68 *	----	----	80 *	4/8 l	5/30 e	49	50	30	50.2 *	38.9 *
Talent	639	----	----	32	----	----	60	4/6 el	6/1 el	51	37	43	46.9	36.8
Maestro	545	----	----	53 *	----	----	67	4/7 l	5/30 e	50	58	23	49.7	38.8 *
Kronos	534	----	----	14	----	----	83 *	4/6 el	6/1 el	46	35	30	48.1	38.3
SW 013253	347	----	----	37	----	----	93 *	4/9 l	5/31 e	49	37	35	50.9 *	39.1 *
SW 013062	276	----	----	43	----	----	90 *	4/8 l	6/1 el	49	42	23	51.2 *	39.7 *
Mean	1085	1614	1505	58	72	75	87	4/6	6/1	49	28	17	50.6	39.2
LSD	817	444	325	49	25	17	25	3	3	5	NS	NS	2.1	3.0
CV	46.1	28	26	51.9	30	22	17.3	1.8	1.4	6.4	110.7	101.3	2.6	3.8

* Upper LSD group - Differences among those marked with an asterisk are not statistically significant.

1/ 2yr means include data from 2003 and 2004.

2/ 3yr means include data from 2002, 2003, and 2004.

3/ Values marked "e" are not statistically different from the earliest value; those marked "l" are not statistically different from the latest.

4/ Values marked "s" are not statistically different from the shortest value; those marked "t" are not statistically different from the tallest.

LINCOLN, NE

COOPERATOR: Lenis Nelson,
University of Nebraska

PREVIOUS CROP: oats
PLANTING DATE: September 16, 2003
HARVEST DATE: June 29, 2004

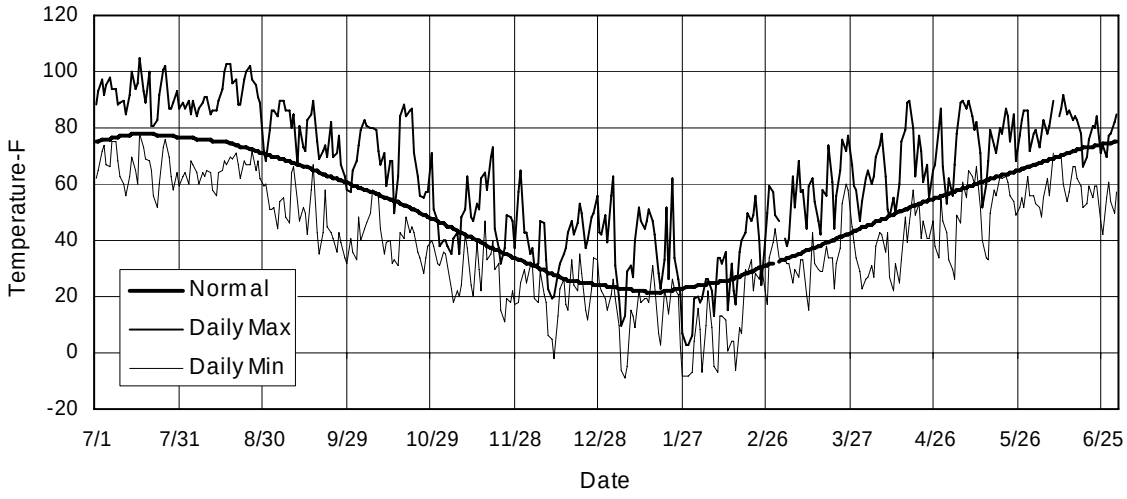
PESTICIDES:
Treflan (herbicide)

SOIL TEST
not available

FERTILIZATION
Fall: 60–40–0
Spring: 0–0–0

SEEDING RATE: 5 lb/a
ROW SPACING: 9 in
IRRIGATION: none
SOIL TYPE: Bulter silt loam

ELEVATION: 850 ft
LATITUDE: 40° 51' N
AVG. WINTER SURVIVAL: 95%
AVERAGE YIELD: 1925 lb/a



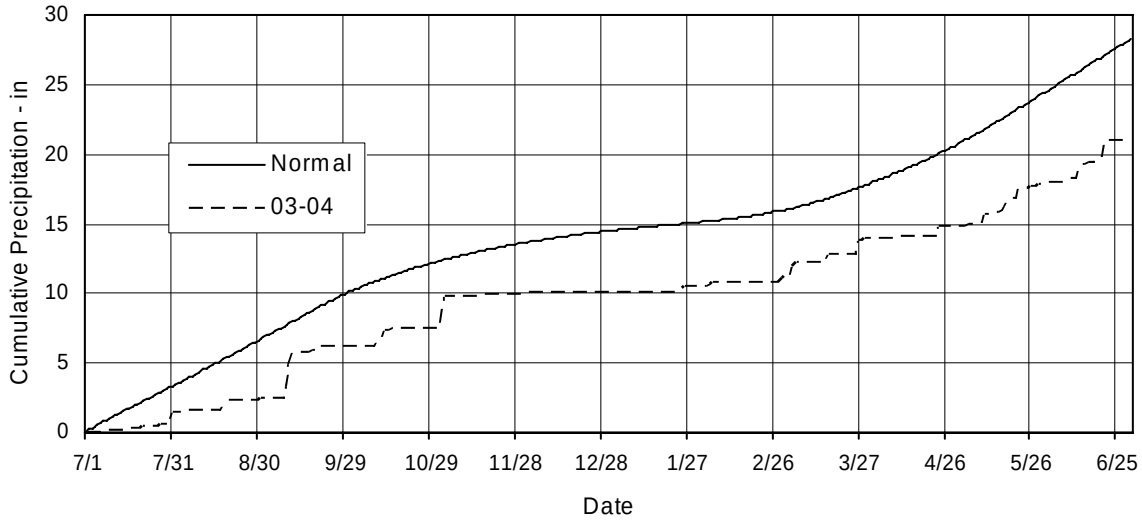


Table 17. Results from the 2004 National Winter Canola Variety Trial, Lincoln, NE.

Line	Yield 2004	Yield 2yr 1/	Yield 3yr 2/	Winter Survival 2004	Winter Survival 2yr 1/	Winter Survival 3yr 2/	Fall Stand	50% Bloom 3/	Maturity 3/	Plant Height 4/	Lodging	Shattering	Test Weight	Total Oil
	lb/ac			%			%	date	date	in.	%	%	lb/bu	%
Kronos	2654 *	----	----	97 *	----	----	88 *	----	----	59 l	----	----	48.6	37.0
VSX-2	2491 *	----	----	95 *	----	----	92 *	----	----	54 s	----	----	47.6	37.0
KS7436	2487 *	2897 *	2482 *	100 *	100	100	83 *	----	----	60 l	----	----	48.1	38.1 *
KS9135	2351 *	----	----	92 *	----	----	68 *	----	----	60 l	----	----	48.2	37.2
Titan	2280 *	----	----	96 *	----	----	57	----	----	59 l	----	----	48.9	38.2 *
SW 013121	2231 *	----	----	94 *	----	----	55	----	----	52 s	----	----	48.7	37.9
Wotan	2214 *	----	----	71	----	----	73 *	----	----	55	----	----	47.3	36.9
Maestro	2190 *	----	----	100 *	----	----	53	----	----	58 l	----	----	48.9	38.5 *
ARC91019-50-E2	2186 *	2652 *	----	100 *	100	----	55	----	----	57	----	----	46.7	37.6
ARC90016-PR377	2179 *	2820 *	----	94 *	97	----	60 *	----	----	59 l	----	----	48.0	37.7
Wichita	2124 *	2478 *	2268 *	97 *	98	99	93 *	----	----	56	----	----	49.4 *	37.4
Abilene	2116 *	2357	2116 *	95 *	97	98	73 *	----	----	57	----	----	49.4 *	36.7
Talent	2094 *	----	----	90 *	----	----	62 *	----	----	55	----	----	48.5	38.2 *
SW 013211	2047 *	----	----	100 *	----	----	67 *	----	----	58 l	----	----	48.4	37.2
KS9183	2025	----	----	100 *	----	----	60 *	----	----	55	----	----	47.2	36.7
Sumner	1990	2265	1895	92 *	96	97	68 *	----	----	55	----	----	50.6 *	37.8
KS9124	1962	----	----	95 *	----	----	82 *	----	----	57	----	----	47.3	37.2
Banjo	1957	2105	1959	96 *	98	99	87 *	----	----	58	----	----	48.9	37.2
SW 013186	1944	----	----	98 *	----	----	80 *	----	----	53 s	----	----	49.4 *	37.9
Casino	1938	2371	2081	93 *	96	98	58 *	----	----	57	----	----	48.7	36.8
KS8367	1913	2295	2006	97 *	98	99	93 *	----	----	57	----	----	48.8	37.2
SW 013253	1887	----	----	97 *	----	----	62 *	----	----	56	----	----	47.6	36.6
ARC92007-2	1869	----	----	100 *	----	----	62 *	----	----	60 l	----	----	48.5	37.4
Jetton	1821	2689 *	2286 *	98 *	99	99	43	----	----	53 s	----	----	48.3	38.2 *
Ceres	1811	2444 *	2062	89 *	94	96	48	----	----	53 s	----	----	48.3	38.0
SW 013173	1795	----	----	100 *	----	----	65 *	----	----	50 s	----	----	48.5	38.9 *
Viking	1664	----	----	91 *	----	----	45	----	----	52 s	----	----	50.0 *	37.8
SW 013062	1643	----	----	100 *	----	----	37	----	----	58	----	----	47.7	38.4 *
Rasmus	1598	----	----	75	----	----	45	----	----	52 s	----	----	46.6	37.8
KS2002	1586	----	----	98 *	----	----	90 *	----	----	60 l	----	----	48.4	39.0 *
ARC92004-1	1581	----	----	98 *	----	----	70 *	----	----	62 l	----	----	47.7	36.1
KS2004	1569	----	----	97 *	----	----	72 *	----	----	58 l	----	----	47.9	37.3
Plainsman	1518	1931	1681	98 *	99	99	77 *	----	----	58 l	----	----	47.4	35.5
SW 013022	1457	----	----	100 *	----	----	65 *	----	----	52 s	----	----	47.4	38.7 *
SW 013154	1254	----	----	88 *	----	----	25	----	----	54	----	----	48.8	37.5
KS2427	858	----	----	93 *	----	----	52	----	----	50 s	----	----	46.5	35.1
Mean	1925	2425	2074	95	98	98	66	----	----	56	----	----	48.3	37.5
LSD (.05)	619	455	390	20	NS	NS	35	----	----	4	----	----	1.4	1.0
CV (%)	19.7	16.9	22.4	12.9	12.9	12.9	33.0	----	----	4.5	----	----	1.8	1.3

* Upper LSD group - Differences among those marked with an asterisk are not statistically significant.

1/ 2yr means include data from 2003 and 2004.

2/ 3yr means include data from 2002, 2003, and 2004.

3/ Values marked "e" are not statistically different from the earliest value; those marked "l" are not statistically different from the latest.

4/ Values marked "s" are not statistically different from the shortest value; those marked "t" are not statistically different from the tallest.

SIDNEY, NE

COOPERATOR: David Baltensperger, University of Nebraska

PREVIOUS CROP: wheat
PLANTING DATE: September 3, 2003
HARVEST DATE: July 29, 2004

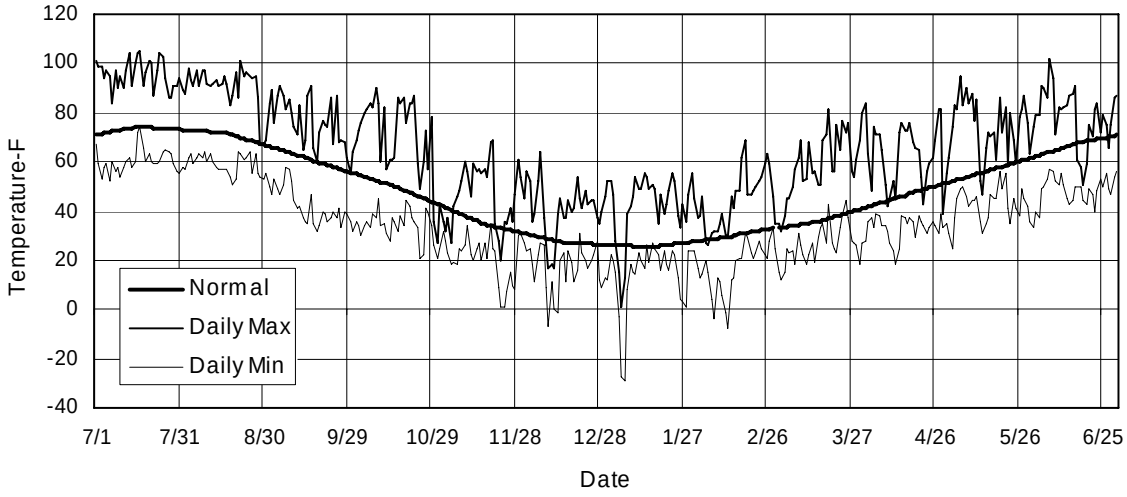
PESTICIDES:
Treflan, 1.5pt/a (herbicide)

SOIL TEST
not available

FERTILIZATION
Fall: 80–0–0–46 S

SEEDING RATE: 5 lb/a
ROW SPACING: 8 in
IRRIGATION: some
SOIL TYPE: Keith loam

ELEVATION: 4746 ft
LATITUDE: 41° 13' N
AVG. WINTER SURVIVAL: 100%
AVERAGE YIELD: 3910 lb/a



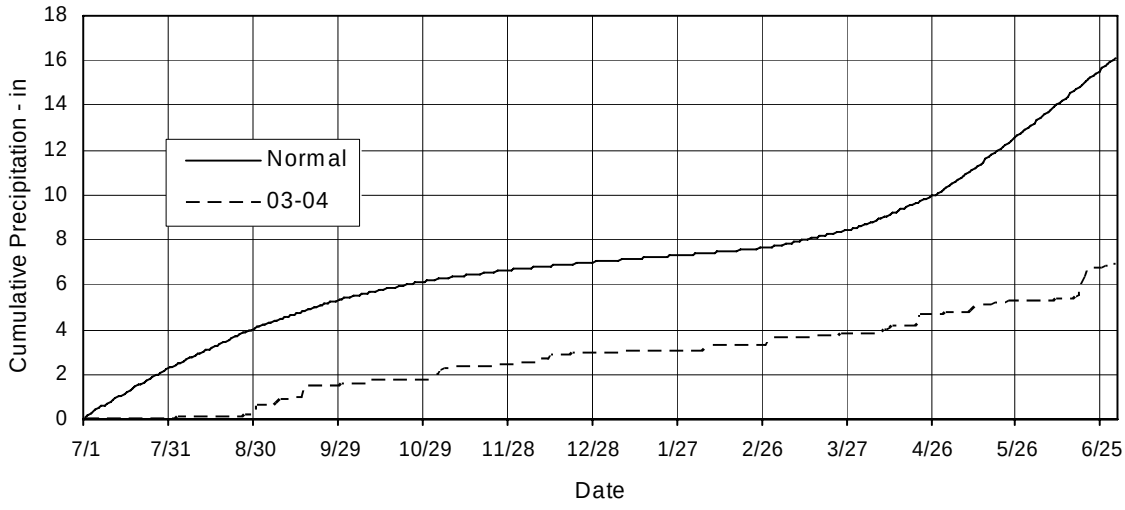


Table 18. Results from the 2004 National Winter Canola Variety Trial, Sidney, NE.

Line	Yield			Winter Survival			Fall	50%	Matur-	Plant	Lodg-	Shat-	Test	Total
	2004	2yr 1/	3yr 2/	2004	2yr 1/	3yr 2/	Stand	Bloom 3/	ity 3/	Height 4/	ing	tering	Weight	Oil
	lb/ac			%			%	date	date	in.	%	%	lb/bu	%
Wotan	5146 *	----	----	100	----	----	90 *	----	----	57 t	----	----	43.3	37.8
ARC91019-50-E2	5143 *	3345 *	----	100	77 *	----	87 *	----	----	56 t	----	----	46.8	37.8
Kronos	4852 *	----	----	100	----	----	90 *	----	----	60 t	----	----	40.5	37.5
Wichita	4800 *	3260 *	2309 *	100	72 *	68 *	90 *	----	----	56 t	----	----	40.8	38.4
Titan	4646 *	----	----	100	----	----	67	----	----	60 t	----	----	42.9	39.2
Banjo	4629 *	3518 *	----	100	91 *	----	90 *	----	----	58 t	----	----	42.4	38.0
Viking	4487 *	----	----	100	----	----	87 *	----	----	48	----	----	46.6	38.4
KS8367	4351 *	3380 *	----	100	94 *	----	90 *	----	----	60 t	----	----	43.2	38.2
Sumner	4348 *	3120 *	----	100	79 *	----	90 *	----	----	54 t	----	----	45.9	38.5
ARC92007-2	4261 *	----	----	100	----	----	90 *	----	----	57 t	----	----	42.0	38.3
Rasmus	4194	----	----	100	----	----	83	----	----	56 t	----	----	41.4	37.8
Casino	4175	2711	1857 *	100	75 *	67 *	80	----	----	57 t	----	----	41.5	37.4
Maestro	4078	----	----	100	----	----	80	----	----	57 t	----	----	42.5	38.7
VSX-2	3933	----	----	100	----	----	87 *	----	----	55 t	----	----	41.4	37.5
SW 013186	3933	----	----	100	----	----	93 *	----	----	52 t	----	----	41.9	38.6
SW 013253	3922	----	----	100	----	----	90 *	----	----	58 t	----	----	44.7	37.0
ARC92004-1	3920	----	----	100	----	----	90 *	----	----	59 t	----	----	40.6	37.9
KS2002	3894	----	----	100	----	----	90 *	----	----	61 t	----	----	41.3	40.2 *
ARC90016-PR377	3891	2676	----	100	74 *	----	87 *	----	----	56 t	----	----	43.5	37.6
Jetton	3889	2826 *	1975 *	100	91 *	80 *	80	----	----	52 t	----	----	43.5	37.1
KS7436	3872	2882 *	----	100	86 *	----	90 *	----	----	58 t	----	----	41.2	37.9
Talent	3872	----	----	100	----	----	73	----	----	58 t	----	----	42.4	37.4
Abilene	3840	2844 *	2064 *	100	74 *	69 *	77	----	----	56 t	----	----	50.3 *	38.0
KS9135	3801	----	----	100	----	----	90 *	----	----	58 t	----	----	42.3	37.2
KS2004	3789	----	----	100	----	----	83	----	----	61 t	----	----	42.5	38.1
SW 013211	3774	----	----	100	----	----	90 *	----	----	55 t	----	----	45.2	36.6
KS9124	3680	----	----	100	----	----	90 *	----	----	58 t	----	----	40.0	36.7
Plainsman	3336	1732	1179	100	50	53	90 *	----	----	59 t	----	----	41.3	36.6
KS9183	3334	----	----	100	----	----	90 *	----	----	57 t	----	----	42.0	37.6
Ceres	3331	2010	1506	100	56	53	57	----	----	57 t	----	----	41.0	37.7
SW 013154	3202	----	----	100	----	----	77	----	----	58 t	----	----	44.4	37.6
SW 013173	3109	----	----	100	----	----	90 *	----	----	52 t	----	----	47.2	37.5
SW 013022	2988	----	----	100	----	----	90 *	----	----	49	----	----	40.1	38.7
SW 013121	2954	----	----	100	----	----	87 *	----	----	58 t	----	----	44.5	36.5
SW 013062	2807	----	----	100	----	----	90 *	----	----	58 t	----	----	44.2	37.5
KS2427	2593	----	----	100	----	----	70	----	----	34 s	----	----	40.4	35.7
Mean	3910	2768	1947	100	77	68	85	----	----	56	----	----	42.9	37.7
LSD (.05)	915	711	487	NS	25	15	9	----	----	10	----	----	3.0	0.6
CV (%)	14.3	28.2	39.2	----	20.2	19.7	6.4	----	----	10.4	----	----	4.2	1.0

* Upper LSD group - Differences among those marked with an asterisk are not statistically significant.

1/ 2yr means include data from 2003 and 2004.

2/ 3yr means include data from 2000, 2003, and 2004.

3/ Values marked "e" are not statistically different from the earliest value; those marked "l" are not statistically different from the latest.

4/ Values marked "s" are not statistically different from the shortest value; those marked "t" are not statistically different from the tallest.

GOODWELL, OK

COOPERATOR: Rick Kochenower,
Oklahoma State University

PREVIOUS CROP: wheat
PLANTING DATE: September 24, 2003
HARVEST DATE: June 15, 2004

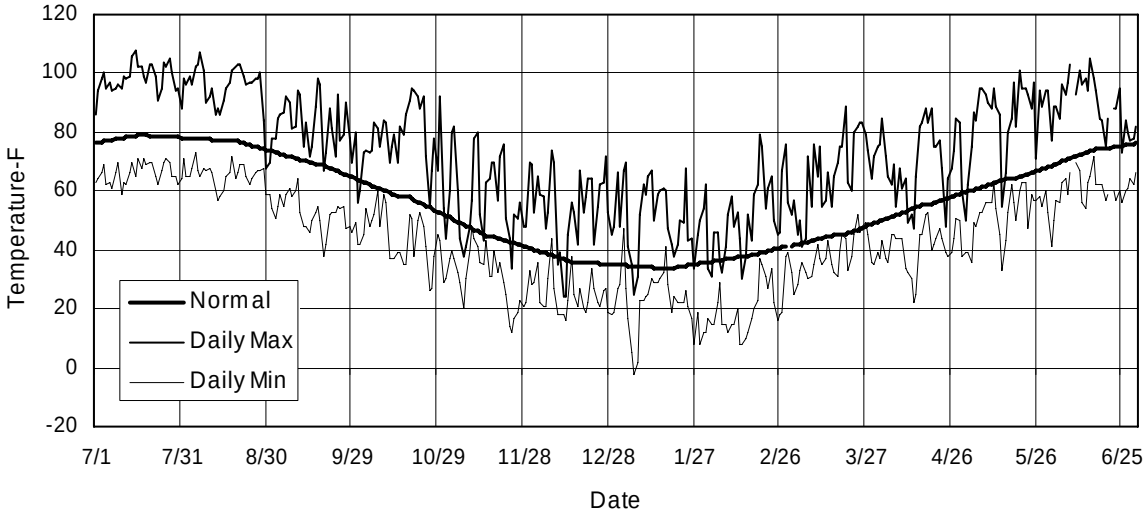
PESTICIDES:
Ally 0.10 oz/a (herbicide)

SOIL TEST
P = 15 ppm, K= 883 ppm, pH = 7.7

FERTILIZATION
Fall: 60–30–15
Spring: 0–0–0

SEEDING RATE: 5 lbs
ROW SPACING: 7.5
IRRIGATION: none
SOIL TYPE: Richfield clay loam

ELEVATION: 3293 ft
LATITUDE: 36° 36' N
AVG. WINTER SURVIVAL: 85%
AVERAGE YIELD: 1476 lb/a



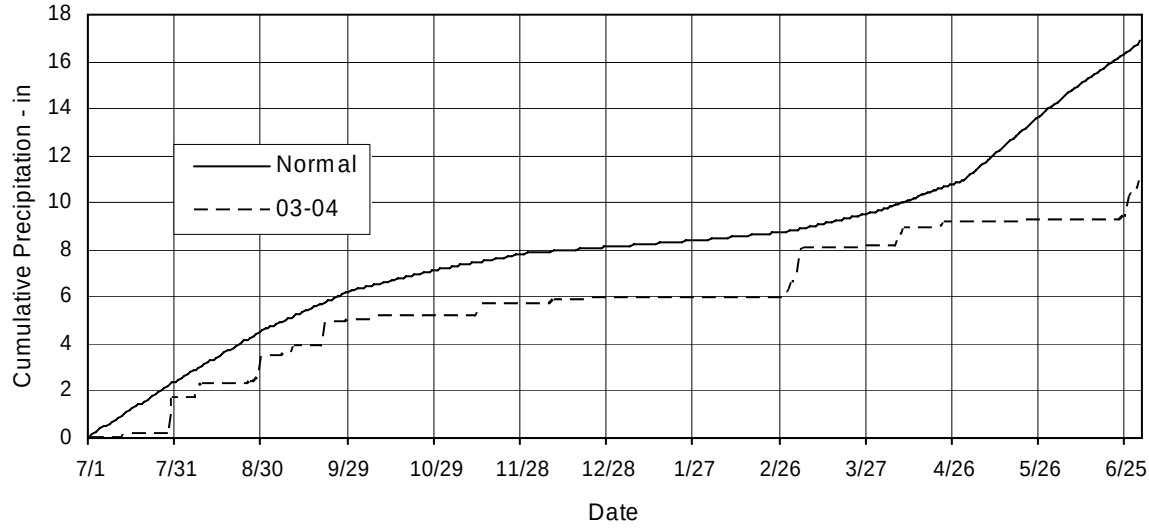


Table 19. Results from the 2004 National Winter Canola Variety Trial, Goodwell, OK.

Line	Yield 2004	Yield 2yr 1/	Yield 3yr 2/	Winter Survival 2004	Winter Survival 2yr 1/	Winter Survival 3yr 2/	Fall Stand	50% Bloom 3/	Maturity 3/	Plant Height 4/	Lodging	Shattering	Test Weight	Total Oil
	lb/ac			%			%	date	date	in.	%	%	lb/bu	%
Kronos	2841 *	----	----	100 *	----	----	88 *	1291 *	----	41 t	----	7	51.4 *	35.5
Titan	2524 *	----	----	97 *	----	----	83	1147 *	----	38	----	3	50.7 *	36.3 *
VSX-1	2264	2137 *	1955 *	95 *	98 *	98 *	92 *	1029	----	31	----	0	47.6	35.0
Wichita	2179	1859 *	1635	100 *	100 *	100 *	87 *	990	----	34	----	0	48.7	34.3
VSX-2	2152	----	----	95 *	----	----	85 *	978	----	32	----	0	47.0	34.9
Wotan	2059	----	----	98 *	----	----	83	936	----	40 t	----	0	50.9 *	36.0 *
Banjo	1967	1958 *	1844 *	95 *	97 *	98 *	95 *	894	----	37	----	3	50.8 *	35.5
KS9124	1961	----	----	93 *	----	----	95 *	892	----	36	----	0	48.8	35.9 *
Jetton	1843	1898 *	1756 *	92 *	95 *	96 *	88 *	838	----	31	----	0	46.0	33.1
KS8367	1763	1585	1480	87 *	93 *	96 *	88 *	801	----	37	----	3	48.4	35.3
Casino	1751	1610	1463	98 *	99 *	99 *	78	796	----	37	----	0	45.3	35.5
Viking	1693	----	----	88 *	----	----	85 *	769	----	29 s	----	0	48.7	33.9
Talent	1659	----	----	90 *	----	----	82	754	----	36	----	7	47.6	35.4
KS7436	1615	1731	1533	80	90	93	93 *	734	----	37	----	3	46.6	35.2
SW 013186	1597	----	----	92 *	----	----	85 *	726	----	33	----	3	50.9 *	35.8 *
Maestro	1581	----	----	93 *	----	----	73	718	----	42 t	----	17	50.9 *	36.5 *
ARC91019-50-E2	1563	1503	----	85	93 *	----	92 *	711	----	38	----	7	49.7 *	35.5
KS9135	1543	----	----	92 *	----	----	92 *	701	----	35	----	0	50.0 *	34.3
Sumner	1495	1492	1347	87 *	93 *	95 *	82	679	----	33	----	0	49.3	34.5
Rasmus	1395	----	----	93 *	----	----	78	634	----	35	----	0	42.8	34.9
ARC90016-PR377	1378	1434	----	78	89	----	93 *	627	----	37	----	0	47.4	34.7
ARC92007-2	1281	----	----	82	----	----	88 *	582	----	39 t	----	3	49.5 *	35.3
Abilene	1249	1213	1121	83	91	92	88 *	568	----	31	----	0	49.5 *	35.1
SW 013253	1244	----	----	80	----	----	92 *	565	----	35	----	3	48.4	34.6
SW 013121	1208	----	----	80	----	----	82	550	----	34	----	0	47.4	35.8 *
SW 013211	1203	----	----	77	----	----	95 *	547	----	37	----	3	49.8 *	35.1
SW 013173	1147	----	----	78	----	----	88 *	521	----	32	----	3	48.4	35.7 *
KS9183	1116	----	----	85	----	----	97 *	507	----	35	----	7	50.1 *	34.2
KS2004	1083	----	----	87 *	----	----	93 *	493	----	35	----	3	47.1	35.2
KS2002	1052	----	----	87 *	----	----	88 *	478	----	40 t	----	20	46.4	35.3
SW 013062	1010	----	----	82	----	----	90 *	459	----	36	----	0	47.1	36.9 *
ARC92004-1	961	----	----	82	----	----	90 *	437	----	35	----	0	45.3	33.9
Plainsman	854	931	884	87 *	92	94 *	95 *	388	----	35	----	0	45.8	34.5
SW 013154	841	----	----	77	----	----	83	383	----	31	----	0	48.1	35.7 *
Ceres	746	986	994	73	85	90	75	339	----	35	----	0	50.2 *	35.7 *
SW 013022	516	----	----	50	----	----	87 *	234	----	26 s	----	3	48.4	35.6 *
KS2427	291	----	----	47	----	----	83	132	----	29 s	----	0	48.4	31.6
Mean	1476	1487	1373	85	92	94	87	671	----	35	----	3	48.4	35.1
LSD (.05)	530	0	0	13	0	0	13	241	----	4	----	7	2.0	1.2
CV (%)	22.0	20	22	9.6	6	7	9.2	22.0	----	7.0	----	149.8	2.6	1.7

* Upper LSD group - Differences among those marked with an asterisk are not statistically significant.

1/ 2yr means include data from 2003 and 2004.

2/ 3yr means include data from 2002, 2003, and 2004.

3/ Values marked "e" are not statistically different from the earliest value; those marked "l" are not statistically different from the latest.

4/ Values marked "s" are not statistically different from the shortest value; those marked "t" are not statistically different from the tallest.

CHILLICOTHE, TX

COOPERATOR: David G. Bordovsky, Texas A&M University

PREVIOUS CROP: fallow
PLANTING DATE: September 25, 2003
HARVEST DATE: June 11, 2004

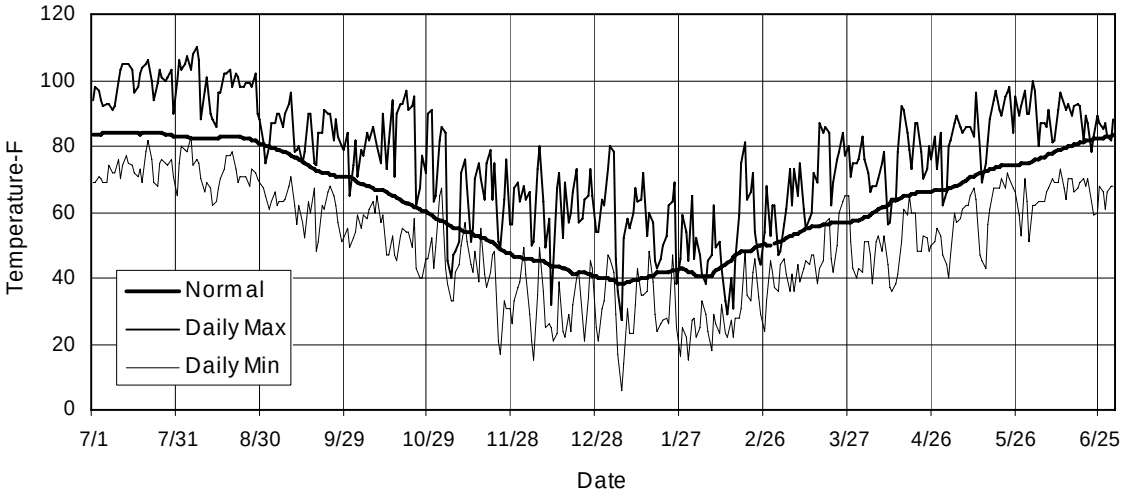
PESTICIDES:
Treflan, 1pt/a applied Sept. 10 (herbicide)
Lorsban, April 5 for aphids (insecticide)

SOIL TEST:
N= 25 ppm, P = 46 ppm, K= 349 ppm, pH = 7.0

FERTILIZATION
Fall: 92–0–0 on September 10
Spring: none

SEEDING RATE: 5 lb/a
ROW SPACING: 10 in
IRRIGATION: 6 in. pre-plant
SOIL TYPE: Abilene clay loam

ELEVATION: 1401 ft
LATITUDE: 34° 11' N
AVG. WINTER SURVIVAL: 96%
AVERAGE YIELD: 1186 lb/a



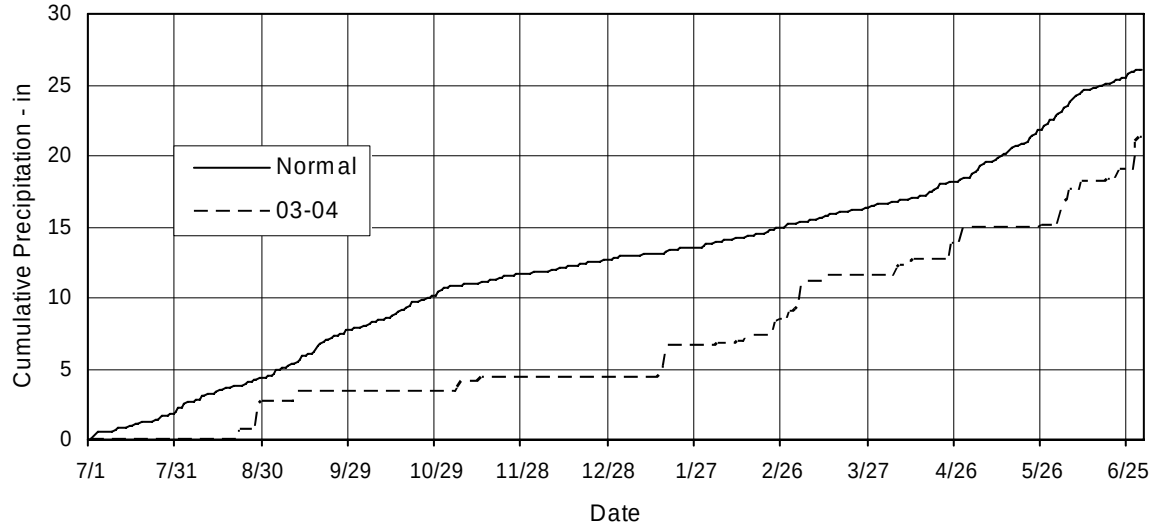


Table 20. Results from the 2004 National Winter Canola Variety Trial, Chillicothe, TX.

Line	Yield 2004	Yield 2yr 1/	Yield 3yr 2/	Winter Survival 2004	Winter Survival 2yr 1/	Winter Survival 3yr 2/	Fall Stand	50% Bloom 3/	Maturity 3/	Plant Height 4/	Lodging	Shattering	Test Weight	Total Oil
	lb/ac	lb/ac	lb/ac	%	%	%	%	date	date	in.	%	%	lb/bu	%
ARC92007-2	1715 *	----	----	100 *	----	----	46 *	3/27 e	----	55	0	63	49.9	37.2 *
Wichita	1605 *	996 *	1342 *	100 *	100	97 *	54 *	3/30 e	----	53	0	40 *	48.3	37.4 *
KS7436	1526 *	989 *	1375 *	100 *	100	97 *	43 *	3/27 e	----	56	3	63	51.1 *	38.6 *
ARC91019-50-E2	1509 *	889 *	----	95 *	98	----	55 *	3/27 e	----	57 t	2	62	49.5	38.5 *
Banjo	1503 *	988 *	1456 *	100 *	100	97 *	54 *	3/28 e	----	54	3	55	50.7 *	37.4 *
Sumner	1461 *	878 *	1151	100 *	100	97 *	51 *	3/27 e	----	51	0	42 *	48.6	39.1 *
SW 013186	1439 *	----	----	98 *	----	----	35	3/30 e	----	50 s	0	38 *	50.7 *	38.0 *
Jetton	1425 *	912 *	1353 *	97 *	98	94 *	54 *	3/30 e	----	47 s	2	35 *	47.8	37.1 *
KS9124	1417 *	----	----	100 *	----	----	42 *	3/31 e	----	55	0	48 *	49.9	36.7
VSX-2	1379 *	----	----	97 *	----	----	43 *	3/29 e	----	51 s	8	43 *	49.0	36.4
Titan	1370 *	----	----	100 *	----	----	40	4/8 l	----	56	2	50 *	51.0 *	37.8 *
VSX-1	1360 *	897 *	1219	100 *	100	96 *	55 *	3/30 e	----	49 s	3	40 *	48.5	36.6
Rasmus	1358 *	----	----	95 *	----	----	39	3/27 e	----	51 s	0	38 *	48.0	38.2 *
KS8367	1328	850 *	1183	100 *	100	97 *	51 *	3/29 e	----	54	0	47 *	49.7	37.3 *
ARC90016-PR377	1318	922 *	----	100 *	100	----	41	3/28 e	----	55	2	52 *	50.2	37.9 *
ARC92004-1	1286	----	----	98 *	----	----	47 *	3/29 e	----	61 t	0	58	49.2	37.2 *
Plainsman	1277	728	1070	97 *	98	81	43 *	4/4 l	----	56	0	53	50.4	36.6
KS9135	1215	----	----	100 *	----	----	46 *	3/30 e	----	58 t	10	52 *	49.9	35.5
Ceres	1205	713	1155	97 *	98	94 *	34	3/29 e	----	51	0	58	50.1	36.4
SW 013121	1174	----	----	85	----	----	44 *	4/8 l	----	53	2	58	50.9 *	35.4
Maestro	1158	----	----	98 *	----	----	41	3/29 e	----	55	0	75	50.2	38.0 *
Abilene	1143	815 *	1140	98 *	99	96 *	38	3/29 e	----	53	2	42 *	48.8	35.9
Talent	1139	----	----	97 *	----	----	42	3/29 e	----	54	7	60	50.4	36.8
Viking	1101	----	----	95 *	----	----	44 *	3/28 e	----	48 s	10	33 *	49.5	37.3 *
SW 013154	1072	----	----	95 *	----	----	36	4/7 l	----	52	0	67	50.2	35.2
SW 013022	1030	----	----	70	----	----	48 *	4/6 l	----	47 s	3	53	49.0	35.2
SW 013173	932	----	----	88	----	----	51 *	4/4 l	----	51 s	0	65	50.5 *	35.5
Casino	920	582	982	100 *	100	88	49 *	3/31 e	----	57 t	3	60	50.4	36.2
SW 013062	885	----	----	83	----	----	48 *	4/7 l	----	56	10	62	51.6 *	35.2
Wotan	861	----	----	98 *	----	----	46 *	4/4 l	----	56	12	68	52.1 *	34.4
KS9183	851	----	----	100 *	----	----	48 *	3/26 e	----	55	7	67	48.3	35.5
KS2427	770	----	----	98 *	----	----	44 *	4/1	----	53	7	52 *	49.8	34.0
SW 013211	641	----	----	88	----	----	55 *	4/2	----	54	8	68	50.1	35.7
Kronos	598	----	----	100 *	----	----	51 *	4/1	----	55	10	73	50.9 *	35.2
SW 013253	550	----	----	100 *	----	----	45 *	4/4 l	----	56 t	22	75	51.2 *	34.9
Mean	1186	777	1113	96	98	90	46	3/31	----	54	4	55	49.9	36.6
LSD (.05)	362	248	206	9	6	6	13	5	----	4	NS	19	1.6	2.1
CV (%)	18.67	38	29	5.72	6	8	17.57	3.41	----	4.84	222.7	21.03	2.0	2.8

* Upper LSD group - Differences among those marked with an asterisk are not statistically significant.

1/ 2yr means include data from 2003 and 2004; 2003 data from Munday, TX.

2/ 3yr means include data from 2002, 2003, and 2004; 2002 and 2003 data from Munday, TX.

3/ Values marked "e" are not statistically different from the earliest value; those marked "l" are not statistically different from the latest.

4/ Values marked "s" are not statistically different from the shortest value; those marked "t" are not statistically different from the tallest.

TORRINGTON, WY

COOPERATOR: Jim Krall,
University of Wyoming

PREVIOUS CROP: spring wheat
PLANTING DATE: August 29, 2003
HARVEST DATE: July 20, 2004

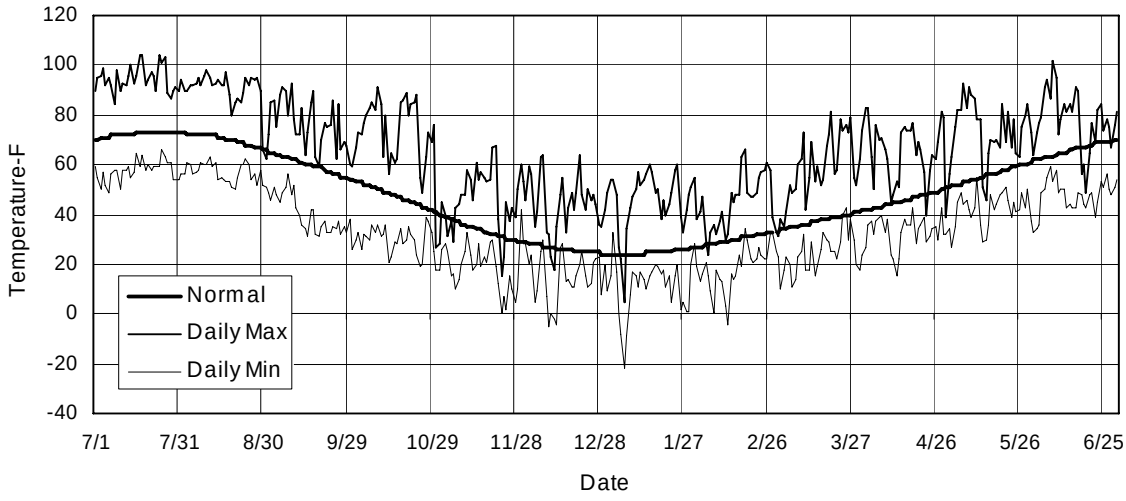
PESTICIDES:
Treflan, pre plant (herbicide)

SOIL TEST:
not available

FERTILIZATION
Fall: 0–0–0
Spring: 0–0–0

SEEDING RATE: 5 lb/a
ROW SPACING: 14 in
IRRIGATION: yes
SOIL TYPE: sandy loam

ELEVATION: 4104 ft
LATITUDE: 42° 6' N
AVG. WINTER SURVIVAL: 65%
AVERAGE YIELD: 949 lb/a



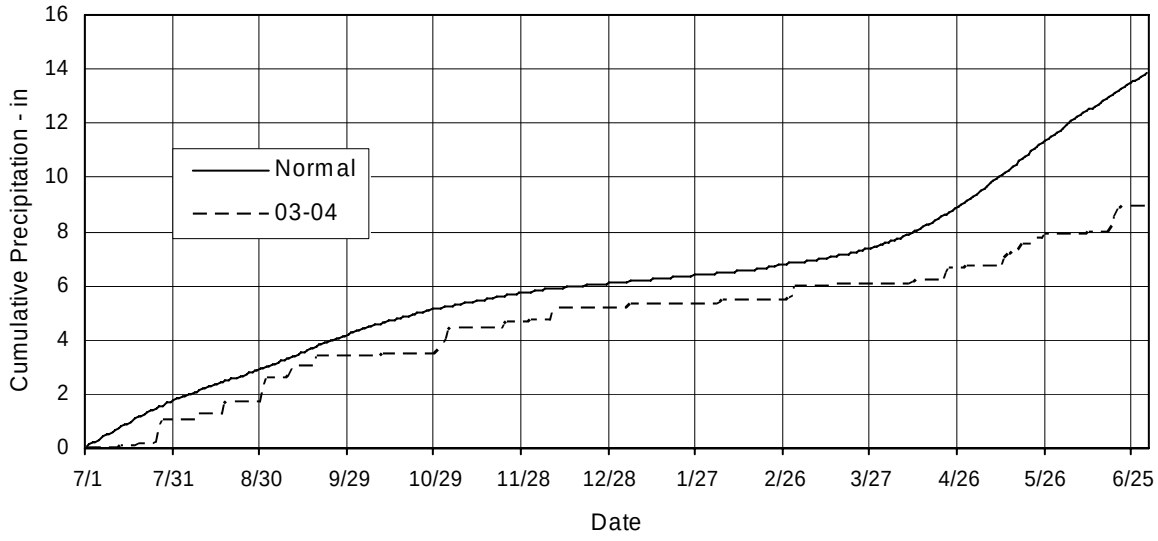


Table 21. Results from the 2004 National Winter Canola Variety Trial, Torrington, WY.

Line	Yield			Winter Survival			Fall	50%	Matur-	Plant	Lodg-	Shat-	Test	Total
	2004	2yr 1/	3yr 2/	2004	2yr 1/	3yr 2/	Stand	Bloom 3/	ity 3/	Height 4/	ing	tering	Weight	Oil
	lb/ac			%			%	date	date	in.	%	%	lb/bu	%
KS8367	1717 *	2072 *	2064 *	77 *	88 *	91 *	65 *	----	----	----	----	----	----	37.7 *
KS9135	1593 *	----	----	83 *	----	----	90 *	----	----	----	----	----	----	37.2 *
ARC92004-1	1413 *	----	----	85 *	----	----	78 *	----	----	----	----	----	----	38.0 *
Kronos	1383 *	----	----	99 *	----	----	85 *	----	----	----	----	----	----	40.3 *
Wichita	1379 *	1469	1416	92 *	96 *	96 *	75 *	----	----	----	----	----	----	35.9
Banjo	1340 *	1795 *	----	80 *	90 *	----	90 *	----	----	----	----	----	----	38.5 *
VSX-1	1260 *	1508	----	79 *	90 *	----	75 *	----	----	----	----	----	----	36.5 *
KS9183	1256 *	----	----	88 *	----	----	77 *	----	----	----	----	----	----	37.2 *
KS9124	1218 *	----	----	83 *	----	----	67 *	----	----	----	----	----	----	37.2 *
KS2004	1119 *	----	----	70 *	----	----	60	----	----	----	----	----	----	37.2 *
Titan	1039 *	----	----	82 *	----	----	52	----	----	----	----	----	----	33.9
ARC91019-50-E2	1014 *	----	----	69 *	----	----	67 *	----	----	----	----	----	----	34.1
KS7436	991 *	1658 *	1652 *	75 *	88 *	85 *	78 *	----	----	----	----	----	----	35.5
ARC92007-2	970 *	----	----	75 *	----	----	72 *	----	----	----	----	----	----	38.0 *
Jetton	948 *	1556 *	1617	82 *	91 *	91 *	48	----	----	----	----	----	----	36.1 *
Abilene	947 *	1218	1316	53 *	76 *	82 *	53	----	----	----	----	----	----	37.7 *
Viking	883 *	----	----	80 *	----	----	58	----	----	----	----	----	----	37.4 *
Plainsman	846 *	570	765	58 *	78 *	80 *	68 *	----	----	----	----	----	----	37.3 *
VSX-2	817 *	----	----	69 *	----	----	62	----	----	----	----	----	----	35.7
KS2002	751 *	----	----	60 *	----	----	65 *	----	----	----	----	----	----	37.1 *
Talent	722 *	----	----	70 *	----	----	53	----	----	----	----	----	----	35.4
Sumner	706 *	996	1248	53 *	77 *	81 *	43	----	----	----	----	----	----	36.0
Rasmus	670	----	----	25	----	----	38	----	----	----	----	----	----	34.1
Wotan	635	----	----	55 *	----	----	50	----	----	----	----	----	----	33.1
ARC90016-PR377	631	----	----	36	----	----	60	----	----	----	----	----	----	34.3
Ceres	555	981	953	27	63	59	22	----	----	----	----	----	----	36.1 *
Maestro	335	----	----	43	----	----	33	----	----	----	----	----	----	38.1 *
Casino	308	948	1095	26	62	73	40	----	----	----	----	----	----	36.2 *
KS2427	58	----	----	25	----	----	57	----	----	----	----	----	----	----
Mean	949	1355	1354	65	83	82	61	----	----	----	----	----	----	36.5
LSD (.05)	1023	530	412	54	24	18	27	----	----	----	----	----	----	3.8
CV (%)	52.87	38	34	40.72	21	20	21.62	----	----	----	----	----	----	3.7

* Upper LSD group - Differences among those marked with an asterisk are not statistically significant.

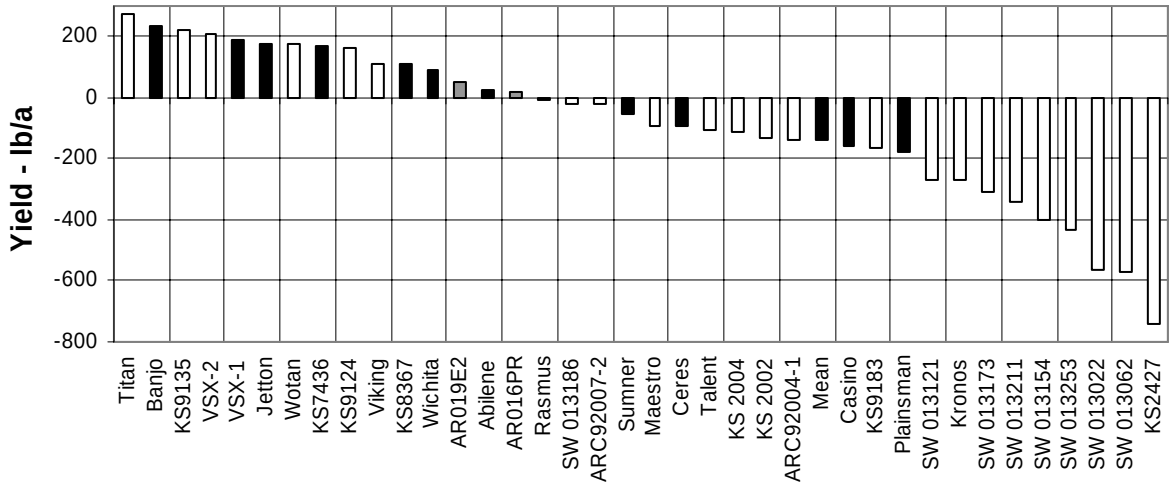
1/ 2yr means include data from 2003 and 2004.

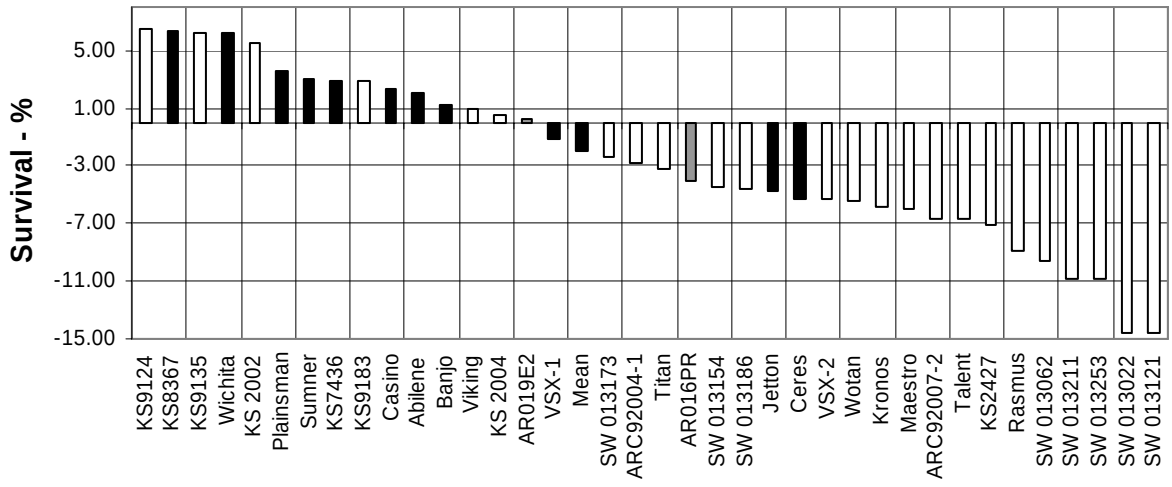
2/ 3yr means include data from 2002, 2003, and 2004.

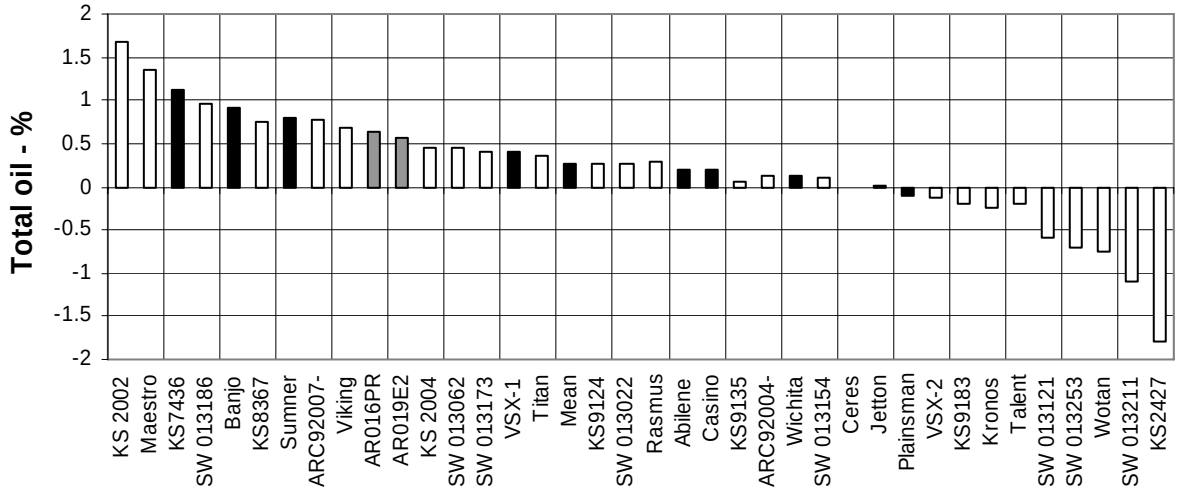
3/ Values marked "e" are not statistically different from the earliest value; those marked "l" are not statistically different from the latest.

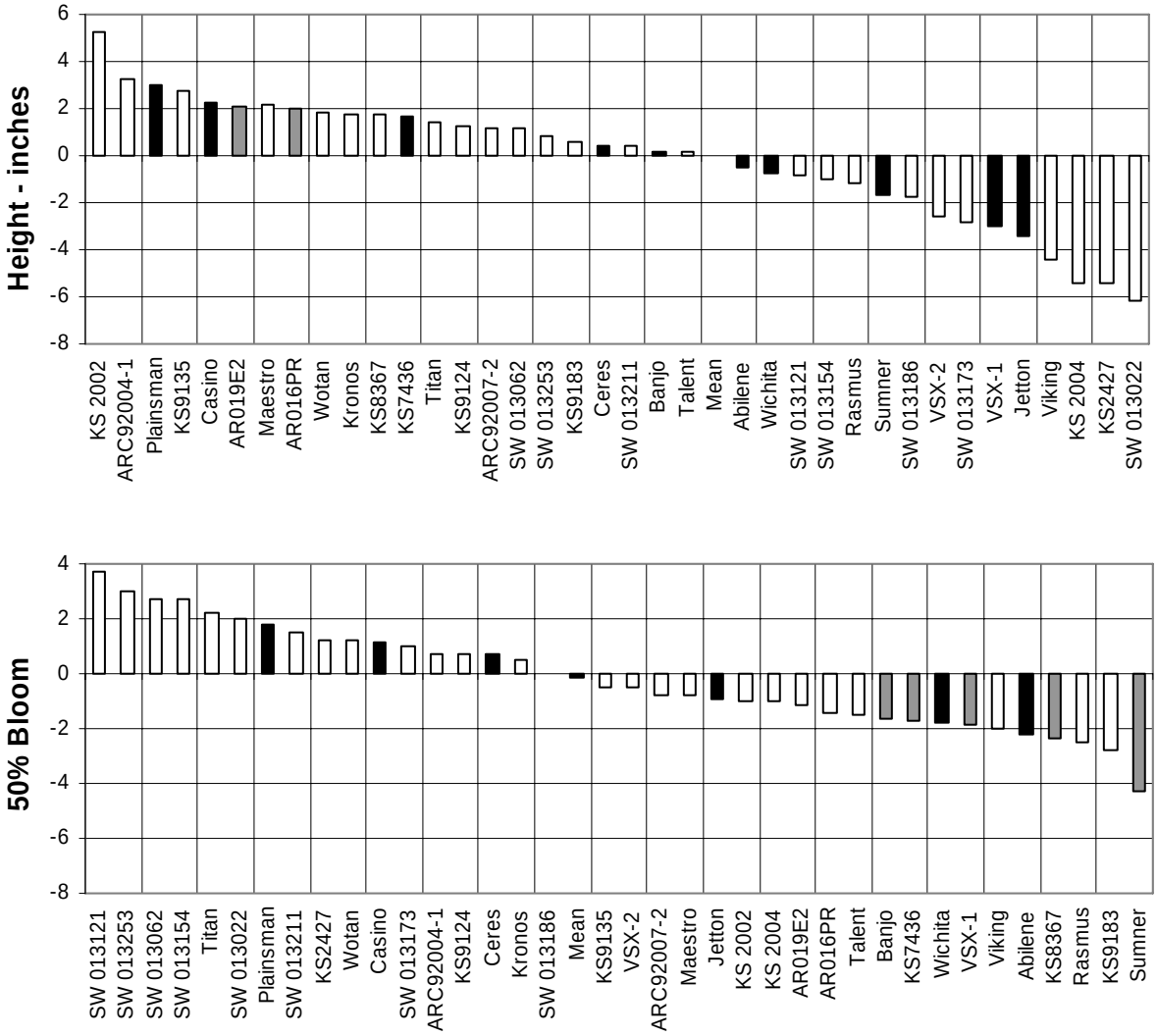
4/ Values marked "s" are not statistically different from the shortest value; those marked "t" are not statistically different from the tallest.

Figure 3. Great Plains Winter Canola Summary, 1996-2004.









Note: Values are averages of the differences between each cultivar and the mean of Jetton, Ceres, Plainsman, and Wichita for yield (lb/a), winter survival (%), total oil content (%), plant height (inches), and 50% bloom date (days). The number of observations for each trait is represented by the different colors of the bars (as shown at the right).

Table 22. Sources for Seed and Blackleg Ratings for Entries of the National Winter Canola Variety Trial.

		Blackleg Rating 1/		
Seed Source	Line	2004	2yr 2/	3yr 3/
Kansas State University	Abilene	13 *	17	17
Department of Agronomy	Plainsman	27	33	18
Throckmorton Hall	Wichita	20	10	15
Manhattan, KS 66506-5501	Sumner	----	17	17
	KS2002	----	----	----
	KS2004	----	----	----
	KS2427	23	----	----
	KS7436	13 *	13	10
	KS8367	10 *	17	----
	KS9124	13 *	----	----
	KS9135	13 *	----	----
	KS9183	7 *	----	----
Norddeutsche Pflanzenzucht	Ceres	17 *	3	10
Hans-Georg Lembke KG	Jetton	7 *	13	15
Hohenlieth, D-24363 Holtsee, GERMANY	Kronos	17 *	----	----
	Rasmus	20	----	----
	Talent	13 *	----	----
	Titan	17 *	----	----
	Viking	23	----	----
	Wotan	30	----	----
Svalöv Weibull	Casino	30	13	12
SE-268 81 Svalöv	Banjo	27	20	----
SWEDEN	Maestro	13 *	----	----
	SW 013062	23 *	----	----
	SW 013154	40	----	----
	SW 013186	13 *	----	----
	SW 013022	20	----	----
	SW 013121	60	----	----
	SW 013173	27	----	----
	SW 013211	17 *	----	----
	SW 013253	30	----	----
University of Arkansas	AR90016-PR377	7 *	23	----
Department of Plant Science	AR91019-50-E2	7 *	13	----
Fayetteville, AR 72701	AR92004-1	13 *	----	----
	AR92007-2	23	----	----
Virginia State University	VSX-1	7 *	20	14
BOX 9152	VSX-2	10 *	----	----
Petersburg, VA 23806				
	Mean	22	21	21
	LSD (0.10)	15	14	11

* Upper LSD group - Differences among those marked with an asterisk are not statistically significant.

1/ Blackleg rated as total percentage of plants killed by blackleg or having severe basal stem canker.
Data collected at Griffin, GA, by D.V. Phillips and D. Spradlin. Nurseries were located on, or adjacent to, fields infected with Phoma blackleg the previous season. Disease severity was increased further by spreading infected stubble over the nurseries shortly after planting.

2/ 2yr means include data from 2003 and 2004.

3/ 3yr means include data from 2001, 2003, and 2004.

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This Report of Progress was edited, designed, and printed by the Department of Communications at Kansas State University.

Kansas State University Agricultural Experiment Station and Cooperative Extension Service, Manhattan 66506

SRP 937 April 2005

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