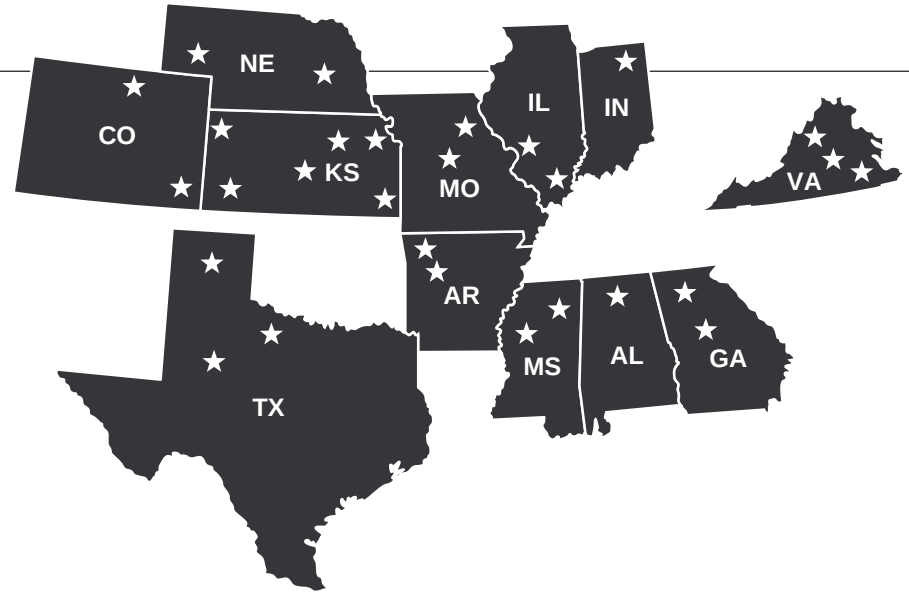
1998

GREAT PLAINS CANOLA RESEARCH

RESULTS FROM THE NATIONAL CANOLA VARIETY TRIAL



Report of Progress 823

Kansas State University Agricultural Experiment Station and Cooperative Extension Service

CONTENTS

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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.

Rapeseed production was first reported in Europe in the 1600's. During the 1950's, 60's, and 70's, rapeseed varieties were developed in Canada that were low in erucic acid and glucosinolates, and the term canola was coined to describe these varieties. In 1986, canola oil was given GRAS status, and it began appearing on grocers' shelves in the United States. Canola oil consumption has increased from zero prior to 1986 to the equivalent of over 2 million acres of production in 1994. This represents an increase in consumption of 50% since 1992. Seventy percent of this oil is imported from Canada. Canola is one of the few new crops that possesses a substantial market before its production has been established.

United States canola production has tripled in the past 3 years and reached 1.13 million acres in 1998. Most of this production is from spring types in the northern Great Plains states of North Dakota, Montana, and Minnesota. Over the past year, 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. Thumb Oil Producers, a small cooperative facility in central Michigan, began crushing canola this year. Several oilseed crushers in the Southeast and one in Goodland, KS are planning to start crushing canola in 1999.

Canola-quality varieties of rapeseed have been developed from two species, *Brassica napus* and *B. rapa*. Both species have spring and winter types. In general, *B. napus* is later, higher yielding, more winter hardy, and easier to harvest than *B. rapa*. Nearly all canola grown in the U.S. is *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 before freeze down to increase winter survival. 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 1980's. Industrial rapeseed had been investigated prior to this, but because of the limited demand for this product, interest was low. Winter canola production was attempted in the late 1980's but was not successful. The failure was primarily due to the lack of adapted varieties, the lack of management recommendations for the area, 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 region. An increased oil consumption has led to increased demand for canola seed and a market interest by oil processors.

1998 NATIONAL 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 Canola Variety Trial (NVT) has been coordinated from Kansas State University since the 1994-95 growing season. The NVT 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. 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 rapeseed germplasm for use in the eastern half of the United States.

Procedures

The NVT was established at 28 locations in 12 states during the fall of 1997. This test included 10 released varieties and 14 experimental lines. Management guidelines were supplied to each cooperator, but past experience at that locality was used for final management decisions. Local management and site descriptions can be found in Table 1. All tests were planted in small plots (approximately 100 square feet) and replicated three times. Analysis for total oil samples was performed by the University of Idaho, Moscow, ID, 83843. This test was continued in 1998-99 and includes 17 experimental lines from six different breeding programs and 14 released cultivars. It was distributed to 34 locations in 14 states.

1997-1998 Growing Conditions

Of the 28 locations planted, 21 were harvested. Fall establishment was successful at all locations except three (Ft. Collins and Walsh, CO and Lincoln, NE), where stands had establishment problems. Fall growth was greater than average, and plants at most locations went into the winter in good condition. The winter of 1997-98 was milder than normal or normal for most locations involved in these tests. Spring stands were excellent at most locations. Two tests (Bushland, TX and Sidney, NE) were not harvested, because winter injury caused poor spring stands. Tests at Manhattan and Parsons, KS were not harvested because of hail just prior to harvest. Temperatures in April, May, and June were much hotter than normal, but spring moisture was adequate at many locations. Six locations (Normal, AL; Kibler, AR; Columbia City, IN; Griffin, GA; Petersburg, VA; and Munday, TX) had at least one line that yielded over 2800 lb/a. 'Jetton' was the top-yielding line in the Southeast region, ARC91004-12L-3 was the top-yielding line in the Midwest region, and KS3580 produced the top yields in the Great Plains.

ACKNOWLEDGMENTS

This work was funded in part by the National Canola Research Program, United States Department of Agriculture, Cooperative States Research Program; a Special Research Grant for canola research from the United States Department of Agriculture, Cooperative States Research Program; and the Kansas Agricultural Experiment Station. Assistant Scientist Cindy Blaker, as well as student workers Gaylon Corley and Jina Hippe helped with planting, care, harvest, and data preparation of some of these tests.

Table 1. Site Descriptions for Locations of the 1998 National Canola Variety Test (NVT).

Location and Cooperator	Irrigation and Rainfall	Dates of Planting and Harvest	Soil Type and Previous Crop	Fertilzers Applied, lbs/a * N, P O , K O				Seeding Rate and Row Spacing	Average Winter Survival
Normal, AL	none	36071	Decatur silty clay loam	F:	20	0	0	5 lb/a	100%
Sabry Elias	------	35962	fallow	S:	80	0	0	7 in	
Fayetteville, AR	none	36069	Captina silt loam	F:	26	52	26	7 lb/a	100%
Robert Bacon	34.3 in.	35961	fallow	S:	97	0	0	7 in	
Kibler, AR	1.0 in.	36069	Roxanna silt loam	F:	26	52	26	7 lb/a	100%
Robert Bacon	37.6 in.	35954	wheat	S:	118	0	0	7 in	
Ft. Collins, CO	twice	36043	Nunn clay loam	F:	120	60	20	5 lb/a	0%
Duane Johnson	------	not harvested	onions	S:	0	0	0	12 in	
Walsh, CO	none	36045	Wiley silt loam	F:	0	0	0	5 lb/a	------
Duane Johnson	------	not established	fallow/wheat	S:	0	0	0	12 in	
Calhoun, GA	------	36071	Waynesboro loam	F:	50	60	90	5 lb/a	100%
Paul Raymer	------	35967	corn	S:	130	0	0	7 in	
Griffin, GA	------	36074	Pacolet coarse sandy loam	F:	49	98	147	5 lb/a	100%
Paul Raymer	------	35957	fallow	S:	130	0	0	7 in	
Belleville, IL	none	36060	Weir silt loam	F:	30	0	0	5 lb/a	84%
Michael Schmidt	------	35983	Corn	S:	120	0	0	8 in	
Carbondale, IL	none	36064	Stoy silt loam	F:	30	0	0	5 lb/a	83%
Michael Schmidt	------	35989	Fallow / corn	S:	120	0	0	8 in	
Columbia City, IN	none	36043	Boyer sandy loam	F:	30	60	60	5 lb/a	97%
Ellsworth Christmas	31.0 in	35989	wheat	S:	90	0	0	6 in	
Colby, KS	1.5 in.	36035	Keith silt loam	F:	40	40	0	5 lb/a	91%
Herbert Sunderman	14.2 in.	35990	Wheat	S:	0	0	0	12 in	
Garden City, KS	none	36043	Keith silt loam	F:	60	0	0	10 lb/a	100%
Merle Witt	13.6 in.	35971	wheat	S:	0	0	0	6 in	
Hutchinson, KS	none	36049	Ost silt loam	F:	65	40	0	5 lb/a	100%
William Heer	16.2 in.	35964	wheat	S:	123	0	0	8 in	
Manhattan, KS	none	36041	Ivan silt loam	F:	55	24	0	5 lb/a	77%
Charlie Rife	22.0 in.	hailed	Oats	S:	80	0	0	8 in	

(continued)

Table 1. Site Descriptions for Locations of the 1998 National Canola Variety Test (NVT) (continued).

Location and Cooperator	Irrigation and Rainfall	Dates of Planting and Harvest	Soil Type and Previous Crop	Fertilzers Applied, lbs/a * N, P O , K O				Seeding Rate and Row Spacing	Average Winter Survival
Ottawa, KS	none	36046	Woodson silt loam	F:	6	26	13	5 lb/a	100%
Keith Janssen	24.0 in.	35965	oats	S:	80	0	0	8 in	
Parsons, KS	none	36046	Parson silt loam	F:	85	60	60	5 lb/a	100%
James Long	27.9 in.	hailed	soybeans	S:	70	0	0	7 in	
Columbia, MO	none	36042	Mexico silt loam	F:	50	100	100	5 lb/a	100%
Harry Minor	28.4 in.	35964	Roundup Ready soybean	S:	50	0	0	7.5 in	
Novelty, MO	none	36043	Putnam silt loam	F:	50	50	50	7 lb/a	100%
Harry Minor	32.3 in.	35977	soybean	S:	50	0	0	7.5 in	
Holly Springs, MS	none	36085	Grenada silt loam	F:	50	0	0	5 lb/a	94%
R. Saunders & R. lvy	46.5 in.	35970	ryegrass	S:	120	0	0	8 in	
Prairie, MS	none	36078	Houston clay	F:	0	60	0	5 lb/a	90%
Roscoe lvy	41.0 in.	35951	corn/soybean rotation	S:	170	0	0	8 in	
Lincoln, NE	none	36042	Sharpsburg silt clay loam	F:	0	0	0	5 lb/a	95%
Lenis Nelson	------	not harvested	oat	S:	0	0	0	9 in	
Sidney, NE	pre-plant	36043	Tripp Fine Sandy Loam	F:	49	24	0	5 lb/a	16%
David Baltensperger	17.0 in.	not harvested	wheat	S:	0	0	0	12 in	
Bushland, TX	twice	36057	Pullman clay loam	F:	0	0	0	5 lb/a	0%
Brent Beans	7.0 in.	not harvested	wheat	S:	0	0	0	8 in	
Lubbock, TX	14.4 in.	36056	Amarillo fine sandy loam	F:	0	0	0	8 lb/a	81%
Richard Auld	13.8 in.	35955	buffolo grass/fallow	S:	50	17	33	5 in	
Munday, TX	4.0 in.	36062	Miles fine sandy loam	F:	0	0	0	5 lb/a	99%
David Bordovsky	17.4 in.	35947	failed wheat	S:	30	0	0	10 in	
Orange, VA	none	36061	Davidson clay loam	F:	25	50	60	6 lb/a	100%
David Starner	46.0 in.	35976	forage small grain	S:	60	0	0	12 in	
Petersburg, VA	none	36067	Abell sandy loam	F:	0	0	0	6 lb/a	100%
Harbans Bhardwaj	46.5	35971	fallow	S:	100	100	100	12 in	
Suffolk, VA	none	36090	Rains fine sandy loam	F:	0	0	0	6 lb/a	100%
Harbans Bhardwaj	40.8	35954	corn	S:	100	100	100	12 in	

* F = fall application and S = spring application.

Table 2. Yield Results (lb/a) from 7 Southeast Locations of the 1997-98 National Canola Variety Trial.

Line	Normal, AL	Kibler, AR 1998	Kibler, AR 2yr 1/	Kibler, AR 3yr 2/	Fayette, AR	Calhoun, GA 1998	Calhoun, GA 2yr 1/	Griffin, GA 1998	Griffin, GA 2yr 1/	Holly Springs, MS 1998	Holly Springs, MS 2yr 1/	Prairie, MS	1998 SE Means
Jetton	4054 *	2520 *	2557 *	2323 *	1348 *	1757 *	1901 *	2535	3046 *	1345 *	1496 *	1291 *	2121 *
KS3580	2940	2521 *	2591 *	2071 *	1080 *	2007 *	1895 *	3169 *	3060 *	1119 *	1056	934	1967 *
Ceres	2977	2687 *	2459 *	2057 *	1062 *	1590 *	1777 *	2622	2895 *	1146 *	1106	1315 *	1914
ID.92.WC.2.24.5	3421 *	2441 *	-----	-----	1350 *	1171	-----	2783 *	-----	1035	-----	1117 *	1902
UGA488.7H	3011	2629 *	-----	-----	934	1246	-----	2663	-----	989	-----	1313 *	1826
ARC91003-7L-3	2863	2543 *	-----	-----	1041 *	1257	-----	2438	-----	1086 *	-----	1398 *	1804
ARC91022-59L-4	3112	2583 *	-----	-----	694	1591 *	-----	2799 *	-----	890	-----	915	1798
Casino	3373	2527 *	2390 *	1831	1004	1300	1642 *	2156	2287	1068 *	924	1141 *	1796
ARC91004-12L-3	2858	2231 *	-----	-----	727	1392	-----	2432	-----	1180 *	-----	1346 *	1738
WW1089	2866	2495 *	-----	-----	938	1351	-----	2668	-----	902	-----	924	1735
Winfield	2844	2513 *	2370 *	1722	720	1317	1396	2623	2779 *	874	719	1010	1700
MO503-1	2753	2640 *	2676 *	2110 *	673	1514	1695 *	2677	2819 *	577	767	739	1653
Bridger	3071	2434 *	2100	1464	956	1393	1313	1698	1811	774	759	1044 *	1624
ID.92.WC.3.13.4	3028	2000	-----	-----	745	1144	-----	2473	-----	917	-----	868	1596
Plainsman	2948	2920 *	2628 *	2121 *	172	1212	1498	2365	2300	696	890	545	1551
ID.WR.465.2.4	2752	2432 *	-----	-----	714	1217	-----	2242	-----	583	-----	696	1519
Ericka	2774	2192 *	1766	-----	495	1142	1200	2187	2469	817	783	690	1471
KS3579	2633	1706	1933	1479	694	990	1120	2298	2461	757	766	864	1420
Falcon	1937	2341 *	2494 *	2032 *	707	982	1443	2851 *	2844 *	99	593	787	1386
ID.92.SW.76.75	2409	2116	-----	-----	788	1039	-----	1741	-----	536	-----	833	1352
KS3203	2476	1920	2074	-----	553	1331	1488	1932	2214	538	818	699	1350
Selkirk	2460	1564	1683	-----	665	858	1151	1987	2216	482	644	960	1282
Aspen	2151	2401 *	2173	1482	607	1264	1140	1460	1844	493	448	472	1264
KS1701	2006	1481	1730	1483	242	833	1196	2082	2145	589	622	303	1077
Mean	2822	2327	2191	1712	788	1287	1427	2370	2399	812	777	925	1619
LSD (0.05)	639	773	461	335	343	432	296	412	288	307	254	365	185
CV (%)	13.9	20.4	17.8	23.0	26.7	20.5	18.7	10.6	10.9	23.2	28.2	24.2	18.7

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

1/ Includes data from 1998 and 1997.

2/ Includes data from 1998, 1997, and 1996

Table 3. Yield Results (lb/a) from 7 Midwest Locations of the 1997-98 National Canola Variety Trial.

	Belleville, IL		Carbondale, IL			Colum., Novelty,		Orange, VA		Petersburg, VA		Suffolk, VA		1998 MW
Line	1998	2yr	1998	2yr	3yr	IN	MO	1998	2yr	1998	2yr	1998	2yr	Mean
		2/		1/	3/				1/		1/		1/	
ARC91004-12L-3	2571 *	-----	2372 *	-----	-----	2857 *	2129 *	1740	-----	2623 *	-----	1848	-----	2306 *
ID.92.WC.2.24.5	2228 *	-----	2223 *	-----	-----	2515 *	2223 *	2221 *	-----	2687 *	-----	1923	-----	2288 *
WW1089	2140 *	-----	1991 *	-----	-----	2715 *	2416 *	2360 *	-----	2397 *	-----	1676	-----	2242 *
Casino	2277 *	-----	2065 *	1867	-----	2989 *	1280	2110 *	2142	2538 *	2060	2166	1695 *	2204 *
Jetton	2277 *	-----	1896 *	2360 *	-----	2583 *	1626	2387 *	2649 *	2782 *	2842 *	1787	1829 *	2191 *
UGA488.7H	2558 *	-----	2199 *	-----	-----	2081	1677	1775	-----	2811 *	-----	1554	-----	2094
KS3580	2227 *	1901 *	1644	1807	1897 *	2789 *	1778	2184 *	2778 *	2138	1886	1514	1073	2039
ARC91022-59L-4	2439 *	-----	1711	-----	-----	2545 *	1357	1980 *	-----	1876	-----	2019	-----	1990
ARC91003-7L-3	2409 *	-----	1920 *	-----	-----	2477	1704	1900 *	-----	2075	-----	1387	-----	1982
Ceres	2674 *	2008 *	1305	1549	1813 *	2611 *	1755	2310 *	2424 *	1739	1593	1087	973	1926
Plainsman	2252 *	1649 *	1740	1658	1897 *	2332	1836	1594	1752	2309 *	1786	1368	1792 *	1919
Bridger	2100 *	1361	1909 *	1450	1349	2408	1270	1682	1709	2058	1950	1621	1322 *	1864
Selkirk	2040 *	-----	883	1014	-----	2910 *	1165	1698	1869	2559 *	1973	1495	1333 *	1822
KS3203	1990 *	-----	1742	1498	-----	2305	1852	1639	1682	1883	2119	1143	1276 *	1793
ID.WR.465.2.4	2176 *	-----	1397	-----	-----	2360	1174	1652	-----	2015	-----	1135	-----	1701
Ericka	1679	-----	1522	1266	-----	2582 *	1128	1474	1943	2165 *	1701	1083	1010	1662
KS3579	2578 *	1955 *	1691	1381	1452	1862	1139	1275	1732	1679	1310	976	1009	1600
MO503-1	1467	1453	1437	1390	1451	2110	1297	1418	1768	1866	1654	1342	1455 *	1563
ID.92.SW.76.75	1655	-----	1612	-----	-----	1895	987	1486	-----	1769	-----	870	-----	1468
KS1701	1667	1297	1313	1259	1489	1983	845	1266	1666	2212 *	1717	701	954	1427
ID.92.WC.3.13.4	1755	-----	1411	-----	-----	2581 *	150	1736	-----	1401	-----	941	-----	1425
Winfield	1031	1157	1340	1113	1181	1742	1129	1805	1880	1910	1544	823	708	1397
Aspen	0	-----	1033	833	-----	1956	1182	1063	1305	1843	1389	1003	846	1154
Falcon	0	-----	669	1330	-----	2320	1671	1275	1662	942	1013	997	1007	1125
Mean	2093	1600	1639	1429	1540	2396	1449	1751	1860	2095	1801	1353	1257	1799
LSD (0.05)	894	472	514	342	273	512	527	499	430	648	468	NS	567	197
CV (%)	21.7	21.3	18.9	20.9	20.2	13.0	22.3	17.6	19.8	19.0	23.3	32.1	28.7	18.0

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

1/ Includes data from 1998 and 1997.

2/ Includes data from 1998 and 1995.

3/ Includes data from 1998, 1997, and 1995.

Table 4. Yield Results (lb/a) from 7 Great Plains Locations of the 1997-98 National Canola Variety Trial.

	Colby, KS			Garden City, KS		Hutchinson, KS			Ottawa,	Columbia, MO			Lubbock, TX		Munday, TX			1998 GP
Line	1998	2yr	3yr	1998	2yr	1998	2yr	3yr	KS	1998	2yr	3yr	1998	2yr	1998	2yr	3yr	Means
		2/	6/		3/		1/	5/			1/	5/		1/		1/	4/	
KS3580	80	604	652	1198 *	1272	1774 *	2471 *	2208 *	811	1592 *	2049 *	1724 *	493 *	502 *	3135 *	2340 *	1638 *	1298 *
Jetton	52	653 *	-----	987	-----	1713 *	2348 *	-----	1059 *	1596 *	1969 *	-----	304	473 *	3086 *	2511 *	1843 *	1257 *
ID.92.WC.2.24.5	93	-----	-----	976	-----	1314 *	-----	-----	889 *	1679 *	-----	-----	239	-----	2902 *	-----	-----	1156
ARC91003-7L-3	85	-----	-----	740	-----	1338 *	-----	-----	736	1694 *	-----	-----	299	-----	2918 *	-----	-----	1116
Plainsman	64	722 *	894 *	735	1144	1152	1667	1513	852 *	1755 *	1942 *	1609 *	156	208	2669	2053	1470	1055
ARC91022-59L-4	69	-----	-----	940	-----	1162	-----	-----	774	1098	-----	-----	303	-----	2953 *	-----	-----	1043
WW1089	62	-----	-----	1280 *	-----	735	-----	-----	397	1471 *	-----	-----	166	-----	3108 *	-----	-----	1031
UGA488.7H	72	-----	-----	919	-----	1061	-----	-----	433	1448 *	-----	-----	207	-----	3009 *	-----	-----	1021
Casino	123	578	-----	1016	-----	827	1788	-----	399	1521 *	2346 *	-----	202	344 *	2816 *	1955	1390	986
Ceres	35	558	805 *	746	1397	1079	2352 *	2135 *	944 *	1533 *	1733	1686 *	131	203	2405	2292 *	1652 *	982
ARC91004-12L-3	69	-----	-----	627	-----	1065	-----	-----	440	1354	-----	-----	272	-----	3025 *	-----	-----	979
Bridger	38	192	242	609	843	663	665	949	537	1008	1403	1285	595 *	508 *	3240 *	2241 *	1616 *	956
Winfield	55	401	463	698	938	881	1673	1755	245	1069	1646	1408 *	481 *	547 *	2945 *	2318 *	1620 *	911
ID.WR.465.2.4	101	-----	-----	889	-----	993	-----	-----	439	921	-----	-----	236	-----	2678	-----	-----	894
ID.92.WC.3.13.4	65	-----	-----	930	-----	736	-----	-----	412	1116	-----	-----	229	-----	2714	-----	-----	886
MO503-1	41	665 *	788 *	1130	1103	481	1484	1507	147	1186	1503	1431 *	116	58	2788 *	1983	1514	841
Ericka	67	-----	-----	1011	-----	793	1328	-----	456	711	1366	-----	221	158	2563	2038	-----	831
KS3203	80	-----	-----	707	-----	921	1613	-----	567	1378 *	1926 *	-----	69	236	2071	1720	-----	828
KS3579	61	315	565	565	689	798	1145	1348	196	1352	1780	1706 *	235	371 *	2375	2006	1438	798
ID.92.SW.76.75	80	-----	-----	592	-----	884	-----	-----	255	773	-----	-----	256	-----	2604	-----	-----	778
Selkirk	107	-----	-----	917	-----	744	1528	-----	331	1046	1526	-----	94	218	2170	1627	-----	773
Falcon	79	522	-----	625	-----	684	2259 *	-----	99	1281	1769	-----	199	301	2415	2250 *	1597	769
Aspen	26	251	-----	757	-----	828	747	-----	161	694	1031	-----	230	522 *	2437	1804	1253	733
KS1701	98	538	655	464	875	371	1196	1245	400	772	1424	1340	112	202	2097	1822	1298	616
Mean	71	495	618	836	1025	958	1463	1480	499	1252	1607	1437	244	293	2714	2029	1459	939
LSD (0.05)	NS	104	190	242	NS	590	384	324	220	378	467	351	191	236	509	338	245	141
CV (%)	49.7	31.4	33.6	14.5	28.8	37.7	26.4	25.6	27.0	18.5	22.6	24.4	48.1	54.7	11.5	16.0	30.0	24.7

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

1/ Includes data from 1998 and 1997.

2/ Includes data from 1998 and 1996.

3/ Includes data from 1998 and 1995.

4/ Includes data from 1998, 1997, and 1996.

5/ Includes data from 1998, 1997, and 1995.

6/ Includes data from 1998, 1996, and 1995

Table 5. Winter Survival (%) from 7 Southeast Locations of the National Canola Variety Trial, 1997-1998.

	Normal,	Calhoun, GA		Griffin, GA		Holly Springs, MS		Prairie,	Fayetteville,	Kibler, AR			1998 SE
Line	AL	1998	2yr	1998	2yr	1998	2yr	MS	AR	1998	2yr	3yr	Means
			1/		1/		1/				1/	2/	
UGA488.7H	100	100	----	100	----	96	----	92	100	100	----	----	98.3
ARC91003-7L-3	100	100	----	100	----	95	----	92	100	100	----	----	98.1
ARC91004-12L-3	100	100	----	100	----	95	----	92	100	100	----	----	98.1
Ceres	100	100	100	100	100	96	93 *	90	100	100	100	99 *	98.0
Winfield	100	100	93	100	100	96	90 *	90	100	100	100	98 *	98.0
Bridger	100	100	100	100	97	95	93 *	90	100	100	100	86	97.9
Falcon	100	100	93	100	100	95	93 *	90	100	100	100	97 *	97.9
ID.WR.465.2.4	100	100	----	100	----	95	----	90	100	100	----	----	97.8
ID.92.WC.3.13.4	100	100	----	100	----	95	----	90	100	100	----	----	97.8
Casino	100	100	100	100	100	95	92 *	90	100	100	100	94	97.8
Jetton	100	100	94	100	100	93	92 *	92	100	100	100	98 *	97.8
KS3203	100	100	98	100	98	94	93 *	90	100	100	100	----	97.8
ID.92.WC.2.24.5	100	100	----	100	----	94	----	90	100	100	----	----	97.7
WW1089	100	100	----	100	----	93	----	90	100	100	----	----	97.6
ID.92.SW.76.75	100	100	----	100	----	93	----	90	100	100	----	----	97.6
Ericka	100	100	100	100	100	93	92 *	90	100	100	100	----	97.6
KS1701	100	100	90	100	100	95	85	88	100	100	100	98 *	97.6
KS3579	100	100	94	100	100	93	91 *	90	100	100	100	98 *	97.6
MO-503-1	100	100	100	100	97	93	92 *	90	100	100	100	97 *	97.6
Plainsman	100	100	93	100	94	93	91 *	90	100	100	100	99 *	97.6
ARC91022-59L-4	100	100	----	100	----	93	----	90	100	100	----	----	97.6
KS3580	100	100	100	100	100	93	92 *	90	100	100	100	99 *	97.6
Selkirk	100	100	100	100	98	93	92 *	90	100	100	100	----	97.6
Aspen	100	100	89	100	100	93	82	90	100	100	100	78	97.6
Mean	100	100	94	100	97	94	89	90	100	100	100	96	97.8
LSD (.05)	NS	NS	NS	NS	NS	NS	7	NS	NS	NS	NS	4	NS
CV (%)	----	----	----	----	----	1.7	5.9	1.4	----	----	----	3.3	1.5

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

1/ Includes data from 1998 and 1997.

2/ Includes data from 1998, 1997, and 1996.

Table 6. Winter Survival (%) from 7 Midwest Locations of the National Canola Variety Trial, 1997-1998.

	Belleville, IL			Carbondale,IL			Colum.,	Novelty,	Orange, VA		Petersburg,	Suffolk,	1998 MW
Line	1998	2yr	3yr	1998	2yr	3yr	IN	MO	1998	2yr	VA	VA	Means
		1/	3/		1/	2/			1/				
Falcon	100	75	----	100 *	94 *	63 *	96	100	100	91 *	100	100	99.5 *
KS3579	100	90 *	86 *	85 *	88 *	59 *	100	100	100	91 *	100	100	97.9 *
Bridger	90	85 *	79 *	96 *	93 *	62 *	98	100	100	94 *	100	100	97.7 *
ID.92.WC.2.24.5	90	----	----	91 *	----	----	100	100	100	------	100	100	97.3 *
UGA488.7H	82	----	----	98 *	----	----	100	100	100	------	100	100	97.1 *
ID.92.WC.3.13.4	93	----	----	86 *	----	----	100	100	100	------	100	100	96.9 *
ID.92.SW.76.75	96	----	----	92 *	----	----	89	100	100	------	100	100	96.8 *
ARC91003-7L-3	90	----	----	85 *	----	----	100	100	100	------	100	100	96.5 *
KS3580	87	70	73 *	88 *	88 *	59 *	100	100	100	96 *	100	100	96.4 *
ID.WR.465.2.4	95	----	----	84 *	----	----	93	100	100	------	100	100	96.1 *
KS3203	94	89 *	----	87 *	84 *	----	90	100	100	92 *	100	100	95.8 *
ARC91022-59L-4	84	----	----	85 *	----	----	99	100	100	------	100	100	95.4 *
Casino	97	95 *	----	80 *	85 *	57 *	90	100	100	95 *	100	100	95.3 *
Ericka	93	81 *	----	71	82 *	----	100	100	100	94 *	100	100	94.8 *
Plainsman	72	68	72	92 *	88 *	59 *	96	100	100	90 *	100	100	94.3 *
KS1701	68	63	68	87 *	86 *	58 *	100	100	100	91 *	100	100	93.6 *
ARC91004-12L-3	86	----	----	68	----	----	100	100	100	------	100	100	93.4 *
Ceres	57	63	64	94 *	91 *	61 *	100	100	100	93 *	100	100	93.0
Winfield	76	75	75 *	75 *	83 *	56 *	100	100	100	91 *	100	100	93.0
Selkirk	61	72	----	85 *	86 *	----	100	100	100	89 *	100	100	92.3
Jetton	83	75	----	83 *	88 *	59 *	78	100	100	94 *	100	100	92.1
WW1089	77	----	----	70	----	----	96	100	100	------	100	100	91.8
MO-503-1	70	70	74 *	74 *	79 *	54 *	92	100	100	91 *	100	100	90.8
Aspen	67	53	----	28	60	40	100	100	100	84	100	100	84.9
Mean	84	76	76	83	85	57	97	100	100	90	100	100	94.7
LSD (.05)	NS	19	14	28	16	11	NS	NS	NS	10	NS	NS	6.3
CV (%)	22.3	22.5	18.5	20.5	15.0	12.1	11.3	------	------	7.5	------	------	10.9

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

1/ Includes data from 1998 and 1997. 2/ Includes data from 1998, 1997, and 1996. 3/Includes data from1998,1997 &1995.

Table 7. Winter Survival (%) from 6 Central Plains Locations of the National Canola Variety Trial, 1997-1998.

	Hutchinson, KS			Manhattan, KS			Ottawa,	Parsons, KS			Columbia, MO			Lincoln, NE			1998 CP
Line	1998	2yr	3yr	1998	2yr	3yr	KS	1998	2yr	3yr	1998	2yr	3yr	1998	2yr	3yr	Means
		1/	2/		1/	2/			1/	2/		1/	2/		1/	2/	
KS3203	100	100	----	95 *	98 *	----	100	100	100	----	100	100	----	100 *	58 *	----	99.2 *
Plainsman	100	100	88 *	98 *	99 *	90 *	100	100	100	70	100	100	69	95 *	56 *	39 *	98.9 *
UGA488.7H	100	----	----	87 *	----	----	100	100	----	----	100	----	----	100 *	----	----	97.9 *
Falcon	100	100	69	92 *	71	63	100	100	100	67	100	100	69	95 *	48	----	97.9 *
WW1089	100	----	----	92 *	----	----	100	100	----	----	100	----	----	95 *	----	----	97.8 *
Ceres	100	100	68	87 *	86	80 *	100	100	100	67	100	100	71 *	100 *	55 *	37 *	97.8 *
KS1701	100	100	79	97 *	88 *	89 *	100	100	100	68	100	100	68	90	53	36 *	97.8 *
ARC91004-12L-3	100	----	----	88 *	----	----	100	100	----	----	100	----	----	98 *	----	----	97.6 *
MO-503-1	100	100	79	95 *	95 *	93 *	100	100	100	69	100	100	69	90	49	34	97.5 *
ARC91022-59L-4	100	----	----	77	----	----	100	100	----	----	100	----	----	100 *	----	----	96.2
Casino	100	100	85	82	88 *	78	100	100	99	68	100	100	72 *	95 *	51	35	96.1
ID.92.WC.3.13.4	100	----	----	78	----	----	100	100	----	----	100	----	----	97 *	----	---- *	95.8
KS3579	100	100	96 *	80	89 *	82 *	100	100	100 *	82 *	100	100	71 *	95 *	50	34	95.8
Aspen	100	100	76	75	83	81 *	100	100	100	68	100	100	69	100 *	53	35	95.8
ID.92.WC.2.24.5	100	----	----	82	----	----	100	100	----	----	100	----	----	93	----	----	95.7
KS3580	100	100	89 *	82	81	75	100	100	98 *	79 *	100	100	71 *	90	63 *	42 *	95.3
ARC91003-7L-3	100	----	----	78	----	----	100	100	----	----	100	----	----	93	----	----	95.3
Winfield	100	100	83	80	88 *	78	100	100	100	71	100	100	69	90	50	34	95.0
Ericka	100	100	----	72	84	----	100	100	100	----	100	100	----	98 *	52	----	94.9
Selkirk	100	100	----	73	83	----	100	100	100	----	100	100	----	90	46	----	93.9
Bridger	100	100	69	68	73	70	100	100	100	68	100	100	67	88	49	33	92.6
ID.WR.465.2.4	100	----	----	40	----	----	100	100	----	----	100	----	----	100 *	----	----	90.0
ID.92.SW.76.75	100	----	----	37	----	----	100	100	----	----	100	----	----	95 *	----	----	88.7
Jetton	100	100	71	10	50	42	100	100	98	68	100	100	68	95 *	49	----	84.2
Mean	100	100	77	77	81	75	100	100	100	70	100	100	69	95	52	36	95.3
LSD (.05)	NS	NS	8	16	12	14	NS	NS	NS	7	NS	NS	3	6	10	7	2.8
CV (%)	----	----	23.7	12.9	13.2	20.5	----	----	1.5	21.7	----	----	25.3	3.7	64.9	63.9	4.3

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

1/ Includes data from 1998 and 1997.

2/ Includes data from 1998, 1997, and 1996.

Table 8. Winter Survival (%) from 5 High Plains Locations of the National Canola Variety Trial, 1997-1998.

	Colby, KS			Garden City, KS			Sidney, NE			Lubbock, TX			Munday, TX			1998 HP
Line	1998	2yr	3yr	1998	2yr	3yr	1998	2yr	3yr	1998	2yr	3yr	1998	2yr	3yr	Means
		1/	2/		1/	2/		1/	2/		1/	2/		1/	2/	
Bridger	97 *	73 *	74 *	100	57	42	45 *	23	28	95 *	83 *	85 *	100 *	81	75	87.3 *
KS3203	95 *	68 *	----	100	82 *	----	57 *	68 *	----	77	73 *	----	100 *	86	----	85.7 *
Casino	93 *	63	69 *	100	53	37	37 *	35	42	86 *	84 *	88 *	100 *	89 *	82 *	83.2 *
KS3580	98 *	72 *	79 *	100	86 *	59 *	28	58 *	57 *	86 *	75 *	76 *	100 *	85	79 *	82.5 *
MO-503-1	100 *	63	68	100	71	----	47 *	66 *	63 *	63	48	62	100 *	78	75	82.0 *
ARC91004-12L-3	93 *	----	----	100	----	----	20	----	----	93 *	----	----	99 *	----	----	81.1 *
KS3579	100 *	71 *	77 *	100	87 *	69 *	20	30	41	78	74 *	78 *	100 *	84	76	79.5
Winfield	98 *	54	61	100	52	35	7	35	31	91 *	77 *	76 *	100 *	93 *	80 *	79.1
ID.92.WC.2.24.5	95 *	----	----	100	----	----	20	----	----	81 *	----	----	97	----	----	78.5
WW1089	95 *	----	----	100	----	----	10	----	----	85 *	----	----	100 *	----	----	78.1
KS1701	100 *	73 *	77 *	100	69	63 *	5	36	32	85 *	78 *	81 *	100 *	83	73	77.9
ID.WR.465.2.4	88	----	----	100	----	----	10	----	----	87 *	----	----	100 *	----	----	77.1
UGA488.7H	95 *	----	----	100	----	----	5	----	----	82 *	----	----	100 *	----	----	76.5
ARC91022-59L-4	90 *	----	----	100	----	----	10	----	----	81 *	----	----	100 *	----	----	76.3
Ericka	85	49	----	100	68	----	15	24	----	81 *	72 *	----	100 *	89 *	----	76.1
ID.92.WC.3.13.4	90 *	----	----	100	----	----	8	----	----	82 *	----	----	99 *	----	----	75.8
Selkirk	95 *	63 *	----	100	77 *	----	3	5	----	81 *	61	----	100 *	87	----	75.8
Ceres	90 *	47	52	100	59	39	2	36	33	89 *	59	53	96	87	81 *	75.5
Plainsman	100 *	60	69	100	63	52	2	38	47	66	58	67	100 *	79	73	73.6
ID.92.SW.76.75	83	----	----	100	----	----	2	----	----	84 *	----	----	96	----	----	73.1
Jetton	85	46	54	98	49	34	7	8	21	74	55	68	100 *	90 *	81 *	72.7
Aspen	88	48	50	100	60	42	3	5	9	63	63	58	93	81	74	69.5
Falcon	87	45	47	100	55	37	0	20	25	60	74 *	78 *	100 *	93 *	84 *	69.3
ARC91003-7L-3	43	----	----	100	----	----	15	----	----	87 *	----	----	99 *	----	----	69.0
Mean	91	57	62	100	62	48	16	29	33	81	67	68	99	83	75 *	77.3
LSD (.05)	11	10	10	NS	15	12	25	18	16	17	14	16	2	6	7	6.3
CV (%)	7.1	28.1	24.4	0.6	37.8	47.2	95.9	67.0	60.0	12.9	19.0	24.0	1.5	6.2	10.5	11.3

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

1/ Includes data from 1998 and 1997.

2/ Includes data from 1998, 1997, and 1996.

Table 9. Fall Stand Ratings for 15 Locations of the National Canola Variety Trial, 1997-98.

Line	Normal, AL	Fayett., AR	Kibler, AR	Bellev., IL	Carbon., IL	Colum., IN	Garden, KS	Hutch., KS	Manhat., KS	Ottawa, KS	Holly S, MS	Prairie, MS	Sidney, NE	Munday, TX	Orange, VA	Means
UGA488.7H	9.2 *	9.7 *	9.9 *	8.5 *	8.7 *	9.3	8.0 *	8.3 *	9.3 *	8.0	9.0 *	10.0 *	8.3 *	6.7	9.2 *	8.8 *
ARC91003-7L-3	7.2 *	9.9 *	10.0 *	6.5	7.3 *	9.0	7.5 *	7.7 *	8.3 *	8.3 *	8.7 *	8.7 *	8.0 *	8.3 *	9.4 *	8.3 *
Bridger	6.2	10.0 *	9.3 *	6.5	8.8 *	9.7	3.3	6.3	9.3 *	9.3 *	8.7 *	7.0	7.7 *	7.7 *	9.7 *	8.0
ARC91022-59L-4	6.7 *	9.9 *	9.8 *	6.3	6.0	9.0	8.0 *	6.0	7.7 *	8.0	9.0 *	7.7 *	7.7 *	7.3	9.7 *	7.9
ID.92.SW.76.75	7.5 *	9.8 *	10.0 *	7.3 *	7.7 *	8.0	7.0 *	6.3	5.7	9.0 *	8.7 *	5.3	8.0 *	9.3 *	8.8 *	7.9
Casino	6.2	9.8 *	10.0 *	6.2	7.5 *	9.0	7.7 *	5.0	9.3 *	8.3 *	9.0 *	5.0	7.7 *	8.3 *	9.2 *	7.9
Jetton	6.0	9.9 *	9.8 *	6.7	5.7	9.0	7.3 *	6.7 *	9.0 *	9.7 *	8.3 *	8.0 *	4.7	7.7 *	9.4 *	7.9
ID.92.WC.2.24.5	4.5	9.9 *	10.0 *	6.7	7.5 *	7.7	8.0 *	7.0 *	9.3 *	9.3 *	8.3 *	4.3	7.0 *	8.0 *	9.8 *	7.8
ID.92.WC.3.13.4	5.7	9.5 *	9.6 *	7.0 *	6.7 *	7.3	7.3 *	7.0 *	8.3 *	8.7 *	8.7 *	6.0	8.0 *	7.7 *	9.4 *	7.8
Ericka	6.2	9.8 *	9.8 *	7.0 *	4.3	9.3	5.7	8.7 *	8.7 *	8.0	9.0 *	4.7	7.7 *	8.3 *	9.6 *	7.8
KS3580	5.5	9.6 *	9.7 *	6.5	7.0 *	7.3	6.7	5.7	9.3 *	7.7	8.3 *	6.0	7.0 *	6.7	9.6 *	7.5
Selkirk	6.3	10.0 *	9.2	7.2 *	4.7	9.3	6.3	6.3	8.0 *	8.0	8.3 *	5.0	6.7 *	7.3	9.2 *	7.5
ARC91004-12L-3	4.7	9.9 *	9.6 *	6.2	7.3 *	9.3	7.7 *	5.3	8.0 *	7.0	8.7 *	8.0 *	3.7	7.7 *	8.7 *	7.4
KS3203	6.3	9.7 *	9.5 *	6.0	6.2	8.0	9.0 *	4.0	9.0 *	8.3 *	7.0	5.3	7.3 *	6.7	9.0 *	7.4
Winfield	5.3	9.6 *	10.0 *	5.5	6.5	9.3	6.0	5.7	7.0 *	8.0	9.0 *	7.0	5.3	6.3	9.7 *	7.3
ID.WR.465.2.4	4.8	9.6 *	9.3 *	6.0	7.0 *	6.7	7.7 *	5.3	7.0 *	8.3 *	8.7 *	4.0	8.0 *	8.0 *	9.2 *	7.3
Ceres	5.2	9.9 *	9.7 *	6.8	5.2	8.0	5.7	5.0	8.0 *	8.7 *	8.7 *	7.0	2.7	9.3 *	9.8 *	7.3
KS3579	7.2 *	9.3 *	9.4 *	4.7	6.8 *	6.7	6.7	6.3	9.0 *	9.0 *	7.0	7.3	5.7 *	6.3	7.7	7.3
WW1089	4.3	9.3 *	9.4 *	5.3	5.0	5.7	7.3 *	6.0	8.0 *	8.3 *	7.7	4.7	4.7	6.3	8.7 *	6.7
KS1701	5.0	9.6 *	8.8	4.7	6.8 *	7.0	3.7	5.0	7.7 *	7.3	9.0 *	4.7	4.0	6.7	8.2	6.5
Plainsman	5.2	9.3 *	9.6 *	5.0	6.3	8.0	4.7	6.0	9.3 *	8.0	6.3	4.0	2.3	6.0	6.7	6.5
MO503-1	4.8	8.0	8.7	2.5	5.7	5.3	5.7	2.7	5.7	5.7	6.7	1.7	4.3	5.0	5.5	5.2
Aspen	3.3	6.3	9.2	0.8	2.3	5.0	5.7	6.0	7.7 *	7.3	4.7	2.7	3.2	4.0	4.3	4.8
Falcon	2.0	3.0	8.3	0.3	0.5	5.0	6.3	2.3	3.0	4.3	1.0	4.7	5.3	3.0	4.2	3.6
Mean	5.6	9.2	9.5	5.7	6.1	7.8	6.6	5.9	8.0	8.0	7.8	5.8	6.0	7.0	8.5	7.2
LSD (0.05)	2.6	0.8	0.7	1.5	2.2	NS	2.3	2.2	2.7	1.6	1.2	2.6	2.9	1.8	1.2	0.5
CV (%)	28.1	5.3	4.6	16.4	21.9	26.7	21.1	22.5	20.4	11.8	9.4	27.4	29.7	15.3	8.3	18.0

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

Table 10. 50% Bloom Dates for 17 Locations of the National Canola Variety Trial, 1997-98.

Line	Normal AL	Fayett. AR	Kibler AR	Griffin GA	Carbon. IL	Colum. IN	Colby KS	Manhat. KS	Ottawa KS	Holly S MS	Prairie MS	Colum. MO	Novelty MO	Munday TX	Orange VA	Peters. VA	Suffolk VA	Means
Aspen	3/26 e	4/2 e	3/25 e	3/15 e	4/5 l	4/17 e	5/7	4/18	4/13 e	3/27 e	3/22	4/9 e	4/18 e	3/11 e	4/2 e	3/25 e	4/9 e	4/4 e
KS3579	3/25 e	4/2 e	4/1	3/25	3/29 e	4/17 e	5/4 e	4/16 e	4/11 e	3/28 e	3/23	4/9 e	4/19 e	3/16	4/2 e	4/1	4/10 e	4/5
Bridger	3/26 e	4/2 e	3/26 e	3/20	3/30 e	4/19	5/7	4/19	4/12 e	3/28 e	3/22	4/11	4/19 e	3/26 l	4/5	4/1	4/13 e	4/6
Winfield	3/26 e	4/3 e	3/28 e	3/27	4/1 e	4/19	5/7	4/16 e	4/12 e	3/30	3/24	4/10 e	4/20	3/24	4/6	4/2	4/10 e	4/6
ARC91003-7L-3	3/27	4/4 e	3/30	3/25	3/30 e	4/18 e	5/9	4/20	4/13 e	3/30	3/24	4/10	4/19 e	3/24	4/7	4/1	4/10 e	4/7
ID.92.WC.3.13.4	3/27	4/3 e	3/30	3/28	3/29 e	4/20	5/6	4/19	4/13 e	3/29 e	3/27	4/11	4/19 e	3/25	4/5	4/1	4/13 e	4/7
Ericka	3/27	4/7	3/31	3/30	4/5 l	4/23	5/6	4/18	4/12 e	4/1	3/23	4/11	4/19 e	3/24	4/6	4/1	4/11 e	4/8
ID.92.SW.76.75	3/28	4/6	3/31	3/29	4/4	4/22	5/6	4/21	4/14	4/2	3/27	4/12	4/21	3/25 l	4/9	4/1	4/13 e	4/9
ID.WR.465.2.4	3/29	4/6	4/2	3/31	4/3	4/21	5/5 e	4/20	4/13	4/2	3/29	4/11	4/21	3/26 l	4/8	4/1	4/13 e	4/9
ID.92.WC.2.24.5	3/29	4/4 e	4/2	4/3	3/31 e	4/20	5/8	4/20	4/13 e	3/23 e	3/30	4/12	4/19 e	3/26 l	4/8	4/3	4/20	4/9
KS3580	3/29	4/10 l	4/3	3/31	3/30 e	4/21	5/6	4/19	4/15	4/2	3/30	4/12	4/20	3/26 l	4/8	4/5	4/18	4/9
MO503-1	3/30	4/10 l	4/1	3/30	3/30 e	4/21	5/8	4/20	4/15	4/4 l	3/30	4/11	4/20	3/26 l	4/10	4/2	4/19	4/9
Ceres	3/29	4/9 l	4/3	4/4	4/1 e	4/22	5/8	4/21	4/14	4/2	3/29	4/12	4/20	3/16	4/9	4/6	4/13 e	4/9
Jetton	3/27	4/8	4/4	3/28	4/3	4/21	5/11 l	4/21	4/13	3/30	3/29	4/11	4/20	3/26 l	4/9	4/1	4/11 e	4/9
ARC91022-59L-4	3/29	4/8	4/2	4/2	4/6 l	4/20	5/8	4/19	4/13	4/2	3/30	4/12	4/21	3/26 l	4/8	4/2	4/18	4/10
ARC91004-12L-3	3/31	4/11 l	4/6	4/3	3/31 e	4/24	5/8	4/21	4/18	4/2	3/30	4/14	4/21	3/26 l	4/11	4/6	4/24 l	4/11
WW1089	4/1	4/11 l	4/3	4/3	4/3	4/21	5/9	4/20	4/14	4/4 l	3/29	4/12	4/21	3/27 l	4/10	4/5	4/22 l	4/11
UGA488.7H	4/2	4/11 l	4/5	4/2	4/2 e	4/26 l	5/7	4/21	4/16	4/6 l	4/1	4/13	4/22 l	3/25 l	4/13	4/5	4/18	4/11
Falcon	3/30	4/8	4/5	4/3	4/4	4/22	5/9	4/21	4/16	4/10 l	4/1	4/13	4/19 e	3/26 l	4/10	4/5	4/14 e	4/11
KS3203	4/2	4/10 l	4/5	4/3	4/4	4/27 l	5/9	4/20	4/16	4/8 l	4/3	4/13	4/22	3/27 l	4/12	4/6	4/22 l	4/12
Casino	4/1	4/11 l	4/6	4/4	4/6 l	4/27 l	5/8	4/22 l	4/16	4/5 l	3/30	4/13	4/21	3/27 l	4/12	4/6	4/15	4/12
Selkirk	3/30	4/11 l	4/8 l	4/5 l	4/6 l	4/21	5/10 l	4/22 l	4/16	4/6 l	4/1	4/13	4/21	3/27 l	4/14	4/4	4/18	4/12
Plainsman	4/4 l	4/12 l	4/8 l	4/4	4/4	4/27 l	5/9	4/22 l	4/17	4/10 l	4/6	4/15 l	4/23 l	3/27 l	4/14	4/8 l	4/20	4/14
KS1701	4/4 l	4/12 l	4/12 l	4/7 l	4/9 l	4/27 l	5/10 l	4/23 l	4/20 l	4/10 l	4/6	4/15 l	4/23 l	3/27 l	4/19 l	4/10 l	4/28 l	4/15 l
Mean	3/29	4/8	4/2	3/31	4/2 l	4/22	5/8	4/20	4/14	4/2	3/29	4/12	4/20	3/24	4/9	4/3	4/16	4/9
LSD (0.05)	1.5	3.8	4.3	2.3	4.6	1.9	1.9	1.8	1.5	6.4	----	1.1	1.2	2.3	1.8	3.0	6.9	0.7
CV (%)	1.1	2.4	2.8	1.6	3.0	1.0	0.9	1.0	0.9	4.2	----	0.6	0.7	1.7	1.1	2.0	4.0	1.9

Note: Values marked "e" are not statisically different from the earliest value, and those marked "l" are not statistically different from the latest value.

Table 11. Maturity Dates for 8 Locations of the National Canola Variety Trial, 1997-98.

Line	Normal, AL	Calhoun, GA	Griffin, GA	Columbia City, IN	Holly Springs, MS	Prairie, MS	Munday, TX	Orange, VA	Means
Aspen	27-May e	01-Jun e	27-May e	10-Jun e	01-Jun	18-May e	22-May e	09-Jun e	30-May e
KS3579	26-May e	01-Jun e	03-Jun	09-Jun e	02-Jun	18-May e	22-May e	13-Jun	31-May
Bridger	25-May e	01-Jun e	29-May e	11-Jun e	30-May e	18-May e	26-May l	14-Jun	31-May
Winfield	27-May e	03-Jun e	03-Jun	10-Jun e	29-May e	18-May e	21-May e	12-Jun	31-May
ARC91003-7L-3	28-May	03-Jun e	05-Jun	10-Jun e	01-Jun	22-May	21-May e	14-Jun	01-Jun
ID.92.SW.76.75	27-May e	01-Jun e	04-Jun	11-Jun e	29-May e	21-May e	23-May e	14-Jun	01-Jun
KS3580	28-May	04-Jun l	03-Jun	10-Jun e	31-May e	21-May	22-May e	15-Jun	01-Jun
Ceres	26-May e	03-Jun el	04-Jun	10-Jun e	30-May e	20-May e	23-May e	13-Jun	01-Jun
Ericka	27-May	02-Jun e	02-Jun	13-Jun	31-May e	19-May e	23-May e	13-Jun	01-Jun
ID.92.WC.3.13.4	28-May	02-Jun e	04-Jun	12-Jun	01-Jun	20-May e	25-May	13-Jun	02-Jun
Jetton	29-May	04-Jun l	04-Jun	13-Jun	31-May e	20-May e	27-May l	15-Jun	02-Jun
ARC91022-59L-4	29-May	03-Jun e	05-Jun l	11-Jun e	02-Jun	23-May	26-May l	16-Jun	03-Jun
UGA488.7H	29-May	01-Jun e	06-Jun l	12-Jun	03-Jun l	26-May	23-May e	16-Jun	03-Jun
ID.WR.465.2.4	29-May	02-Jun e	04-Jun	10-Jun e	02-Jun	26-May	27-May l	16-Jun	03-Jun
MO503-1	28-May	04-Jun l	05-Jun	11-Jun e	03-Jun l	24-May	25-May	18-Jun	03-Jun
Falcon	29-May	04-Jun l	05-Jun	13-Jun l	04-Jun l	24-May	25-May	16-Jun	03-Jun
ARC91004-12L-3	29-May	05-Jun l	07-Jun l	12-Jun	04-Jun l	24-May	28-May l	18-Jun	04-Jun
WW1089	29-May	05-Jun l	08-Jun l	12-Jun	05-Jun l	27-May	25-May l	16-Jun	04-Jun
KS3203	01-Jun l	04-Jun l	04-Jun	12-Jun	04-Jun l	26-May	26-May l	17-Jun	04-Jun
Plainsman	31-May l	04-Jun l	05-Jun l	13-Jun l	05-Jun l	24-May	25-May	19-Jun	04-Jun
ID.92.WC.2.24.5	31-May l	04-Jun l	07-Jun l	10-Jun e	04-Jun l	29-May	29-May l	18-Jun	05-Jun
Casino	30-May	05-Jun l	08-Jun l	12-Jun	04-Jun l	24-May	29-May l	19-Jun	05-Jun
Selkirk	31-May l	05-Jun l	07-Jun l	12-Jun	04-Jun l	29-May	26-May l	19-Jun	05-Jun
KS1701	02-Jun l	06-Jun l	08-Jun l	15-Jun l	01-Jun	01-Jun l	29-May l	22-Jun l	07-Jun l
Mean	29-May l	03-Jun	04-Jun l	11-Jun	02-Jun	22-May	25-May l	16-Jun	02-Jun
LSD (0.05)	1.7	2.6	2.7	1.9	2.9	3.3	3.9	3.0	1.0
CV (%)	0.7	1.0	1.1	0.7	0.9	1.4	1.6	1.1	1.1

Note: Values marked "e" are not statisically different from the earliest value, and those marked "l" are not statistically different from the latest value.

Table 12. Plant Heights (inches) for 18 Locations of the National Canola Variety Trial, 1997-98.

Line	Normal AL	Calhoun GA	Griffin GA	Bellev. IL	Carbon. IL	Colum. IN	Colby KS	Garden KS	Hutch. KS	Colum. MO	Novelty MO	Holly S MS	Prairie MS	Lubbock TX	Munday TX	Orange VA	Peters. VA	Suffolk VA	Means
KS3579	43 s	54 s	49 s	39 s	40 s	47 s	36	42 s	38 s	46 s	46	29 s	31 s	44 s	56 s	50 s	39 s	38	43 s
Jetton	42 s	50 s	53 s	39 s	39 s	52	33 s	39 s	42 s	46 s	44	28 s	37	40 s	60	49 s	36 s	39	43 s
Aspen	42 s	61 t	49 s	45	40 s	48 s	32 s	42 s	44	47	46	27 s	34 s	46 s	56 s	48 s	38 s	38	44 s
Winfield	46	57	53 s	37 s	42 s	45 s	36	42	44	44 s	48	35 s	36	46 s	61	50 s	43	37	45
ID.92.WC.3.13.4	46	57	54 s	44	40 s	49 s	42	46 t	43	46 s	36 s	37 t	38	42 s	63	51 s	39 s	33 s	45
Ericka	47	56	52 s	46	45 s	54 t	36	41 s	40 s	42 s	46	34 s	36 s	42 s	59 s	51 s	42	38	45
Bridger	44 s	55 s	55 s	45	42 s	49 s	37	44	44	49	48	34 s	40	48 t	63	49 s	38 s	39	46
Ceres	45	55 s	56	46	43 s	50 s	40	46 t	46	49	42	35 s	42	42 s	61	53	40 s	39	46
ID.92.SW.76.75	51	61 t	57	45	43 s	48 s	39	39 s	45	48	45	36 t	45 t	46 s	62	54	38 s	41	47
KS3580	47	58	54 s	46	49 t	49 s	38	45	45	51	51 t	33 s	38	48 t	62	51 s	42	40	47
Falcon	45	58	54 s	45	49 t	55 t	39	46 t	43	53	50	34 s	45 t	48 t	58 s	52 s	44	43 t	48
WW1089	48	56	55 s	47	45 s	55 t	41	50 t	45	45 s	49	35 s	45 t	48 t	62	53	48 t	45 t	48
ARC91003-7L-3	49	59 t	54 s	50 t	44 s	52	37	46 t	47 t	49	51 t	38 t	44 t	48 t	63	52	46 t	42	49
MO503-1	50	60 t	60 t	50 t	40 s	56 t	40	48 t	44	50	49	34 s	42	44 s	63	59 t	48 t	43 t	49
UGA488.7H	48	57	57	47	45 s	52	40	48 t	43 s	51	48	40 t	47 t	48 t	63	59 t	48 t	41	49
Casino	48	60 t	57	48	45 s	54 t	40	46 t	48 t	52	49	41 t	47 t	48 t	64	55	44 t	42	49
ID.WR.465.2.4	50	59 t	59 t	48	48 t	51 s	43 t	47 t	46	51	53 t	39 t	39	52 t	66 t	57	43	40	50
KS1701	51	61 t	58	49	48 t	54 t	42	38 s	43 s	55 t	49	45 t	43 t	46 s	58 s	61 t	49 t	43 t	50
ARC91022-59L-4	50	57	60 t	51 t	48 t	53 t	38	49 t	50 t	53	50	39 t	42	48 t	67 t	55	44	45 t	50
ID.92.WC.2.24.5	52	61 t	65 t	44	46 s	51 s	44 t	49 t	47 t	50	50	37 t	46 t	48 t	66 t	55	47 t	44 t	50
Selkirk	56 t	56	54 s	45	54 t	53	42	47 t	48 t	55	52 t	41 t	46 t	50 t	67 t	62 t	47 t	43 t	51
ARC91004-12L-3	53	60 t	59 t	48	49 t	55 t	44 t	46 t	50 t	58 t	54 t	40 t	46 t	52 t	67 t	59 t	48 t	43 t	52 t
Plainsman	50	64 t	54 s	54 t	48 t	59 t	42	45	52 t	59 t	56 t	38 t	43	48 t	66 t	57	48 t	46 t	52 t
KS3203	53	59 t	53 s	48	55 t	56 t	46 t	48 t	51 t	58 t	55 t	42 t	48 t	54 t	68 t	58 t	50 t	44 t	53 t
Mean	48	58	55	46	45	52	40	45	45	50	49	36	42	47	63	54	44	41	48
LSD (0.05)	2	6	7	4	7	6	3	4	6	4	6	5	5	7	3	4	6	4	1
CV (%)	2.8	6.0	7.3	5.1	9.7	7.1	5.3	5.8	7.4	5.1	6.9	9.1	7.6	8.5	2.9	4.7	7.8	5.3	6.4

Note: Values marked "s" are not statisically different from the shortest value, and those marked "t" are not statistically different from the tallest value.

Table 13. Lodging (%) for 12 Locations of the National Canola Variety Trial, 1997-98.

Line	Normal, AL	Calhoun, GA	Griffin, GA	Belleville, IL	Carbondale, IL	Colum., IN	Hutchinson, KS	Ottawa, KS	Prairie, MS	Columbia, MO	Novelty, MO	Orange, VA	Means
Plainsman	0	25	0 *	13 *	13	13 *	1	1 *	1	2 *	1 *	0 *	6 *
ID.92.WC.2.24.5	0	63	0 *	0 *	13	0 *	0	3 *	1	1 *	1 *	0 *	7 *
ARC91022-59L-4	7	38	0 *	8 *	8 *	0 *	1	2 *	1	15 *	4 *	3 *	7 *
Casino	0	46	0 *	13 *	8 *	0 *	0	8 *	1	1 *	5 *	7 *	7 *
KS3580	0	54	0 *	13 *	13	13 *	1	3 *	1	1 *	4 *	3 *	9 *
KS1701	0	63	0 *	38	4 *	0 *	1	2 *	1	5 *	7 *	0 *	10 *
KS3203	0	71	0 *	8 *	13	0 *	0	2 *	1	1 *	1 *	33 *	11 *
Falcon	0	46	0 *	13 *	38	13 *	0	17 *	2	2 *	1 *	0 *	11 *
Ceres	0	96	0 *	6 *	8 *	13 *	4	2 *	1	4 *	1 *	0 *	11 *
Jetton	0	92	0 *	6 *	4 *	13 *	0	1 *	1	1 *	7 *	13 *	12 *
Selkirk	0	71	0 *	13 *	17	13 *	3	8 *	1	1 *	10 *	7 *	12 *
ARC91004-12L-3	0	71	0 *	13 *	8 *	13 *	6	6 *	0	1 *	1 *	30 *	12 *
ID.92.WC.3.13.4	0	100	0 *	13 *	4 *	7 *	2	11 *	1	7 *	1 *	3 *	12 *
WW1089	0	58	0 *	18	17	13 *	1	38	2	5 *	7 *	3 *	14
ARC91003-7L-3	0	67	0 *	18	8 *	20 *	8	4 *	1	2 *	10 *	33 *	14
ID.WR.465.2.4	0	83	33 *	17	13	0 *	4	12 *	1	1 *	1 *	17 *	15
Ericka	0	67	33 *	4 *	13	0 *	10	11 *	1	17 *	1 *	55	18
KS3579	12	100	17 *	18	0 *	0 *	0	33	1	7 *	10 *	28 *	19
ID.92.SW.76.75	30	79	42	13 *	8 *	0 *	0	16 *	1	10 *	7 *	27 *	19
MO503-1	0	67	0 *	33	17	20 *	1	40	1	17 *	15	30 *	20
Aspen	0	42	67	13 *	17	27 *	0	29	5	37	5 *	3 *	20
Bridger	0	58	92	25	17	20 *	12	4 *	2	9 *	10 *	50	25
Winfield	0	67	0 *	25	13	53	1	58	1	27	20	53	26
UGA488.7H	2	100	0 *	13 *	4 *	100	1	32	2	46	30	65	33
Mean	2	68	12	15	11	15	2	14	1	9	7	19	15
LSD (0.05)	NS	NS	38	13	14	35	NS	25	-----	19	10	41	8
CV (%)	542	61	197	53	74	145	250	105	-----	125	86	128	130

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

Table 14. Shattering (%) for 8 Locations of the National Canola Variety Trial, 1997-98.

Line	Normal, AL	Carbondale, IL	Colby, KS	Hutchinson, KS	Ottawa, KS	Prairie, MS	Columbia, MO	Novelty, MO	Means
Jetton	0 *	2	3 *	1	2 *	1	10 *	7	3.3 *
Plainsman	0 *	4	7 *	1	5 *	5	4 *	10	4.5 *
KS3579	4 *	4	2 *	1	8 *	5	10 *	7	5.3
Casino	1 *	3	7 *	3	13	5	10 *	1 *	5.4
ID.92.WC.2.24.5	1 *	7	8 *	1	5 *	5	10 *	7	5.5
Ceres	4 *	5	13	1	4 *	5	7 *	5 *	5.5
Falcon	6	10	8 *	0	3 *	5	4 *	10	5.8
KS1701	2 *	15	5 *	0	3 *	5	10 *	7	5.9
KS3580	1 *	5	7 *	1	9 *	5	10 *	10	5.9
UGA488.7H	3 *	1	8 *	2	15	5	7 *	7	6.0
Winfield	2 *	3	3 *	4	7 *	5	17	10	6.3
Aspen	10	5	2 *	4	6 *	5	10 *	10	6.5
WW1089	1 *	4	17	0	12	5	8 *	7	6.8
ARC91003-7L-3	5 *	10	4 *	5	9 *	5	13	10	7.5
KS3203	1 *	5	12	1	8 *	10	13	10	7.5
MO503-1	1 *	12	8 *	2	7 *	10	13	10	7.9
Ericka	7	8	2 *	8	12 *	0	17	10	7.9
ID.92.WC.3.13.4	5 *	3	4 *	5	25	5	17	0 *	8.0
ARC91004-12L-3	2 *	8	20	3	11 *	5	7 *	10	8.3
ARC91022-59L-4	3 *	7	8 *	3	18	10	10 *	10	8.7
Bridger	7	1	5 *	6	22	5	20	10	9.5
ID.92.SW.76.75	12	7	5 *	2	27	5	23	13	11.7
Selkirk	2 *	14	15	3	28	10	13	10	11.9
ID.WR.465.2.4	5 *	8	2 *	4	50	5	20	10	13.0
Mean	3	6	7	3	13	5	12	8	7.3
LSD (0.05)	6	NS	7	NS	10	-----	9	5	1.5
CV (%)	97	85	58	108	46	-----	46	36	73

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

Table 15. Moisture (%) for 15 Locations of the National Canola Variety Trial, 1997-98.

Line	Normal, AL	Calhoun, GA	Griffin, GA	Colum., IN	Colby, KS	Hutch., KS	Ottawa, KS	Holly S, MS	Prairie, MS	Colum., MO	Novelty, MO	Munday, TX	Orange, VA	Peters., VA	Suffolk, VA	Means
Winfield	8.7 *	7.6	8.4 *	7.9	5.9	9.3 *	7.0 *	5.5 *	11.2	11.1 *	8.4	2.5 *	7.6 *	7.3	8.0	7.7 *
Ericka	8.5 *	7.7	8.4 *	8.0	5.0 *	10.5 *	7.4 *	5.6 *	12.7	10.8 *	8.4	3.0	7.3 *	7.2	7.8	7.9 *
UGA488.7H	8.6 *	7.9	8.3 *	7.9	5.0 *	10.6 *	7.0 *	5.4 *	11.0	11.6 *	8.5	3.3	8.3	7.1 *	8.1	7.9 *
Aspen	8.7 *	7.4	8.3 *	8.5	5.0 *	7.7 *	7.6 *	5.8	13.1	12.4 *	8.6	3.1	7.3 *	8.0	8.0	8.0 *
Jetton	8.8 *	7.6	8.4 *	8.4	5.9	12.2 *	8.1	5.4 *	11.9	10.6 *	8.4	3.2	7.6 *	6.6 *	6.5 *	8.0 *
KS3579	8.3 *	7.7	8.2 *	8.1	5.9	11.5 *	7.2 *	5.6	12.4	13.0 *	8.6	2.8 *	7.0 *	7.1 *	8.0	8.1 *
ARC91003-7L-3	8.8 *	7.7	8.3 *	8.6	6.1	9.4 *	7.0 *	5.6	11.9	15.6	8.4	2.8 *	7.3 *	7.8	8.0	8.2
ID.92.SW.76.75	8.8 *	7.5	8.3 *	8.3	6.4	14.2	7.0 *	5.4 *	11.8	11.7 *	8.4	3.3	7.6 *	7.4	7.5	8.2
ID.92.WC.3.13.4	8.3 *	7.6	8.4	8.2	5.6	12.6	7.2 *	5.6	11.8	13.6 *	8.6	3.6	7.3 *	7.8	7.6	8.2
KS3580	8.6 *	7.4	8.5	8.1	5.6	14.4	7.4 *	5.6 *	12.5	13.2 *	8.8	2.7 *	7.0 *	7.4	6.6 *	8.3
ARC91022-59L-4	8.7 *	7.7	8.4	8.3	5.6	14.0	7.1 *	5.5 *	12.5	12.7 *	8.7	3.3	6.7 *	7.0 *	7.9	8.3
Plainsman	9.6	7.6	8.5	7.9	5.7	13.1	7.4 *	5.6	11.7	14.1 *	8.5	2.9 *	7.6 *	6.6 *	8.2	8.3
Bridger	8.6 *	7.8	8.2 *	8.2	5.0 *	13.4	7.4 *	5.5 *	11.6	13.7 *	8.7	3.6	8.3	7.4	8.0	8.4
MO503-1	9.1 *	7.5	8.4	7.8	5.0 *	15.2	7.4 *	5.6 *	13.7	12.4 *	8.6	3.1	7.3 *	7.0 *	7.7	8.4
ID.WR.465.2.4	9.1 *	7.5	8.4 *	8.4	5.8	13.7	7.4 *	5.5 *	11.6	14.0 *	8.6	3.3	7.3 *	7.6	8.0	8.4
ID.92.WC.2.24.5	9.4	7.8	8.6	8.3	5.9	12.5 *	8.0	5.6	11.6	13.6 *	8.5	3.7	7.3 *	7.8	7.9	8.4
Ceres	8.5 *	7.6	8.6	8.5	5.0 *	14.8	7.6 *	5.7	13.3	13.4 *	8.6	3.0 *	7.3 *	7.2 *	7.9	8.5
ARC91004-12L-3	9.3 *	7.5	8.5	8.0	5.6	12.3 *	8.3	5.6 *	11.8	15.4	8.6	3.7	7.8	7.6	8.1	8.5
KS3203	8.4 *	7.6	8.3 *	7.8	9.4	14.9	7.4 *	5.4 *	11.9	14.7	8.4	2.9 *	7.8	7.0 *	7.5	8.6
Falcon	8.9 *	7.6	8.6	8.0	5.6	17.2	9.3	5.5 *	12.0	14.3 *	8.5	3.1	7.6 *	7.8	8.0	8.8
WW1089	10.1	7.6	8.4	8.1	5.4 *	15.1	7.6 *	5.9	12.3	16.3	8.7	3.8	7.3 *	7.8	7.6	8.8
Casino	10.2	7.8	8.6	8.1	6.3	16.8	7.6 *	5.7	12.5	15.7	8.7	3.4	7.3 *	7.7	7.4	8.9
Selkirk	9.3 *	7.7	8.5	8.0	7.5	16.5	8.8	5.4 *	13.0	17.4	8.5	3.8	9.2	7.8	7.1	9.2
KS1701	9.7	7.6	8.5	7.8	8.0	16.9	9.7	5.7	16.1	17.1	8.4	3.2	8.1	7.6	7.6	9.5
Mean	9.0	7.6	8.4	8.1	5.9	13.3	7.7	5.6	12.3	13.7	8.6	3.2	7.5	7.4	7.7	8.4
LSD (0.05)	1.0	NS	0.1	NS	0.5	4.9	0.8	0.2	NS	3.7	NS	0.5	0.9	0.6	0.5	0.4
CV (%)	7.0	2.8	1.1	5.1	5.0	22.3	6.3	2.2	11.5	16.4	1.9	9.4	7.6	4.9	3.6	12.9

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

Table 16. Test Weights (lb/bu) for 11 Locations of the National Canola Variety Trial, 1997-98.

Line	Normal, AL	Fayett., AR	Kibler, AR	Colum., IN	Garden, KS	Hutch., KS	Ottawa, KS	Holly S, MS	Prairie, MS	Munday, TX	Orange, VA	Means
UGA488.7H	49.5 *	42.7 *	47.9 *	50.1	52.3	47.1 *	50.7 *	49.5 *	46.3	53.3 *	49.2 *	49.0 *
WW1089	48.5	42.5 *	47.9 *	50.7 *	52.4	48.2 *	48.4	50.0 *	48.0	51.5 *	49.1 *	48.8 *
ARC91004-12L-3	48.7	39.5 *	45.3 *	51.0 *	51.2	49.8 *	50.9 *	50.3 *	46.6	53.0 *	48.6 *	48.6 *
Falcon	49.3 *	40.5 *	47.3 *	51.2 *	53.9 *	48.2 *	50.2	48.0	42.7	53.2 *	48.8 *	48.5 *
Ceres	49.8 *	38.7 *	49.7 *	51.3 *	52.9 *	48.3 *	51.7 *	51.0 *	44.3	45.2	49.3 *	48.4 *
Plainsman	49.0	40.0 *	48.8 *	50.4	51.3	47.7 *	49.9	47.9	44.9	52.2 *	48.9 *	48.3 *
ID.92.WC.2.24.5	47.7	41.5 *	45.6 *	50.4	53.3 *	47.6 *	50.5 *	50.0 *	45.7	49.2	48.4	48.2 *
Casino	48.0	39.7 *	44.8	50.6	52.6	46.2	50.0	50.5 *	46.7	52.3 *	48.1	48.2 *
ARC91003-7L-3	48.8	40.9 *	46.1 *	50.2	52.6	47.9 *	49.8	48.1	47.3	49.8	48.0	48.1 *
KS3580	50.7 *	37.9	46.0 *	50.8 *	53.0 *	47.3 *	50.6 *	49.7 *	43.0	51.0 *	48.9 *	48.1
Winfield	49.5 *	40.9 *	46.0 *	49.2	51.3	49.1 *	49.5	49.4 *	43.5	50.8 *	48.3	48.0
ID.92.WC.3.13.4	49.8 *	37.7	43.3	50.4	52.2	47.1 *	50.0	50.3 *	45.9	52.0 *	48.9 *	48.0
MO503-1	48.0	38.2	48.3 *	51.0 *	52.0	44.6	48.8	49.0 *	46.5	51.3 *	48.8 *	47.9
Bridger	49.8 *	37.0	44.7	50.3	50.6	46.1	50.7 *	48.1	47.1	53.0 *	48.7 *	47.8
Jetton	50.0 *	38.5 *	43.1	50.6	52.3	47.3 *	50.3	49.0 *	45.6	51.3 *	47.8	47.8
KS3203	47.8	36.5	48.8 *	51.2 *	51.7	49.4 *	50.1	47.5	44.2	49.0	49.4 *	47.8
ARC91022-59L-4	48.8	36.2	44.7	50.1	52.3	46.3	49.7	49.6 *	47.3	52.2 *	48.2	47.8
Selkirk	48.0	38.2	46.8 *	50.7 *	52.9 *	45.8	49.9	47.9	44.1	52.3 *	48.1	47.7
ID.WR.465.2.4	48.3	37.7	47.9 *	50.4	51.1	45.6	49.8	48.9	45.0	51.0 *	48.4	47.6
Aspen	48.3	36.8	47.0 *	50.4	49.6	47.1 *	50.9 *	49.1 *	44.9	50.3 *	47.7	47.5
ID.92.SW.76.75	48.3	38.0	47.2 *	49.4	51.7	48.2 *	49.1	47.9	42.1	51.7 *	47.5	47.4
Ericka	49.5 *	34.8	44.3	50.1	51.7	45.7	50.8 *	49.4 *	45.0	51.2 *	47.7	47.3
KS1701	48.0	40.0 *	47.5 *	50.1	49.0	45.9	50.0	48.4	37.9	52.3 *	48.5	47.1
KS3579	49.8 *	34.5	38.5	50.8 *	47.8	46.9 *	48.0	50.0 *	45.8	48.5	47.8	46.2
Mean	48.9	38.7	46.1	50.5	51.7	47.2	50.0	49.1	45.0	51.2	48.5	47.9
LSD (0.05)	1.5	4.4	4.6	0.6	1.3	3.3	1.4	2.1	NS	3.1	0.9	0.9
CV (%)	1.8	7.0	6.1	0.7	1.6	4.2	1.7	2.6	6.7	3.7	1.1	3.8

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

Table 17. Total Oil (%) for 22 Locations of the National Canola Variety Trial, 1997-98.

Line	Normal, AL	Fayett., AR	Kibler, AR	Calhoun, GA	Griffin, GA	Bellev., IL	Carbon., IL	Colum., IN	Colby, KS	Garden, KS	Hutch., KS	Means
Winfield	39.3 *	37.3 *	40.0 *	47.8 *	46.2 *	36.7	38.4 *	40.6 *	24.2	38.4 *	37.4 *	38.9 *
Bridger	40.2 *	36.5 *	40.5 *	47.1 *	46.4 *	38.0 *	38.1 *	40.9 *	22.4	37.1 *	35.7	38.6 *
ID.92.SW.76.75	39.0	36.1 *	40.1 *	45.0	44.6	37.4 *	38.0 *	40.6 *	25.3	38.5 *	36.3 *	38.6 *
ID.WR.465.2.4	39.2 *	37.5 *	39.9 *	46.2	45.3 *	36.6	38.2 *	39.8 *	26.6 *	37.0 *	36.2 *	38.5
ID.92.WC.2.24.5	39.1	36.4 *	37.7	44.6	43.6	38.4 *	37.9 *	40.4 *	27.6 *	37.8 *	34.7	38.2
UGA488.7H	38.8	34.2 *	37.7	44.7	45.1	36.9 *	37.4 *	39.2	27.0 *	36.1	35.0	37.8
Selkirk	37.3	32.9	38.0	44.7	44.7	38.3 *	37.8 *	39.7 *	25.6	38.0 *	34.6	37.6
KS3580	38.1	33.7	38.0	43.8	43.9	36.7	37.5 *	40.6 *	24.7	36.9 *	34.3	37.6
ARC91004-12L-3	38.0	34.2 *	37.3	44.1	44.0	36.9 *	37.0 *	39.1	27.9 *	36.7	36.2	37.6
MO503-1	38.5	33.7	38.6	44.3	43.9	38.2 *	37.3 *	39.3	25.1	37.2 *	35.1	37.5
Jetton	38.2	34.7 *	37.7	44.3	44.1	37.2 *	36.1	39.4 *	26.7 *	35.4	35.0	37.5
Ceres	38.5	34.1 *	38.4	44.6	42.7	36.3	37.0 *	39.1	26.0	36.0	34.5	37.4
KS1701	38.4	31.4	38.9	43.7	45.1	36.7	38.2 *	40.6 *	25.3	37.2 *	34.5	37.4
ARC91003-7L-3	37.2	34.8 *	38.2	45.2	44.8	36.9 *	36.4	38.8	26.1	36.2	35.3	37.4
Casino	38.2	35.1 *	37.3	44.7	43.6	35.1	35.7	39.6 *	26.2	36.4	34.6	37.3
ID.92.WC.3.13.4	38.8	32.7	38.1	44.9	43.5	35.3	37.2 *	39.9 *	28.4 *	37.0 *	34.2	37.2
Falcon	38.5	33.0	38.5	43.6	42.5	36.0	34.1	39.6 *	26.4 *	35.8	35.1	37.0
WW1089	38.3	33.4	37.3	42.7	41.9	35.6	35.9	39.2	27.3 *	35.5	34.7	36.8
Ericka	37.8	31.3	36.6	42.7	43.1	38.4 *	36.7	40.3 *	24.8	36.1	34.9	36.8
ARC91022-59L-4	36.7	31.1	36.9	43.7	42.3	35.6	36.4	38.4	26.4 *	35.9	34.2	36.8
Plainsman	37.3	29.5	38.8	42.7	42.0	36.3	36.8	38.8	25.5	35.9	35.1	36.6
KS3579	38.5	33.8	36.4	44.9	43.4	34.9	36.7	38.2	22.4	34.3	34.8	36.5
KS3203	37.6	31.7	38.2	43.9	42.4	37.3 *	36.3	38.2	23.4	36.2	34.3	36.4
Aspen	37.8	32.7	37.9	44.0	43.6	33.8	35.7	39.7 *	22.4	35.2	34.4	36.4
Mean	38.3	33.8	38.2	44.5	43.9	36.6	37.0	39.6	25.6	36.5	35.0	37.4
LSD (0.05)	1.0	3.5	1.4	1.5	1.2	1.6	1.5	1.6	2.1	1.5	1.2	0.3
CV (%)	1.6	6.3	2.2	2.1	1.7	2.7	2.5	2.7	5.1	2.3	2.1	2.7

(continued)

Table 17. Total Oil (%) for 22 Locations of the National Canola Variety Trial, 1997-98 (continued).

Line	Ottawa, KS	Parsons, KS	Colum., MO	Novelty, MO	Holly S., MS	Prairie, MS	Lubbock, TX	Munday, TX	Orange, VA	Peters., VA	Suffolk, VA	Means
Winfield	40.0 *	33.9	39.0 *	40.4 *	39.6 *	41.8 *	37.0 *	38.1 *	41.1 *	40.4 *	38.0 *	38.9 *
Bridger	39.8	35.6	37.8 *	38.5	40.7 *	42.1 *	37.9 *	34.2	41.2 *	40.1 *	38.6 *	38.6 *
ID.92.SW.76.75	40.2 *	35.3	38.0 *	39.8 *	40.5 *	41.5 *	36.2	37.6 *	40.5 *	39.8 *	38.2 *	38.6 *
ID.WR.465.2.4	40.9 *	33.4	36.7 *	38.7	40.1 *	42.4 *	36.5	37.0	40.4 *	39.8 *	38.1 *	38.5
ID.92.WC.2.24.5	39.8	36.8	37.8 *	38.8	39.6 *	42.6 *	36.5	34.7	39.6	39.4 *	36.8	38.2
UGA488.7H	40.0 *	37.1	36.8 *	38.5	39.6 *	41.0	36.0	36.3	39.2	38.2	37.9 *	37.8
Selkirk	40.2 *	35.5	36.3	39.1	38.8	41.9 *	34.6	34.0	39.5	39.5 *	37.3	37.6
KS3580	40.4 *	36.2	36.5	38.2	40.2 *	41.1	35.6	35.6	39.6	37.7	37.4 *	37.6
ARC91004-12L-3	39.8	36.7	36.3	37.1	38.6	41.0	35.0	35.7	39.5	39.0 *	36.5	37.6
MO503-1	39.4	33.5	36.7 *	38.1	39.2	41.2	35.1	35.7	39.6	38.5	36.4	37.5
Jetton	39.6	34.4	36.8 *	37.9	39.9 *	41.5 *	36.1	35.0	39.2	38.7 *	36.4	37.5
Ceres	39.7	34.9	36.2	38.7	38.6	41.2	35.6	37.1 *	38.9	38.7 *	36.4	37.4
KS1701	40.2 *	36.4	34.3	40.0 *	38.8	39.7	34.1	34.7	39.6	38.7 *	36.7	37.4
ARC91003-7L-3	40.0 *	34.9	37.1 *	36.4	38.9	41.1	35.9	35.6	39.6	37.8	35.9	37.4
Casino	39.4	35.7	36.2	37.7	38.8	40.2	36.1	35.0	38.9	37.4	37.5 *	37.3
ID.92.WC.3.13.4	39.5	32.2	36.4	38.1	38.5	41.7 *	35.9	34.3	38.8	38.6 *	35.6	37.2
Falcon	39.8	35.4	36.0	39.7 *	38.2	40.7	35.3	34.8	38.9	37.6	35.4	37.0
WW1089	38.7	34.3	36.8 *	37.1	38.9	40.7	34.9	34.2	38.8	38.2	35.8	36.8
Ericka	39.6	34.5	35.9	37.3	38.1	39.8	34.7	34.8	38.3	38.2	36.0	36.8
ARC91022-59L-4	39.5	34.7	35.3	36.8	38.6	41.1	36.5	34.1	38.6	39.3 *	36.9	36.8
Plainsman	39.3	33.9	35.7	38.4	37.9	40.1	34.9	35.8	38.5	37.6	34.8	36.6
KS3579	37.9	33.7	34.8	36.8	38.2	40.4	34.5	35.3	38.3	38.6 *	35.7	36.5
KS3203	39.2	34.2	35.3	37.6	38.2	39.9	33.5	34.9	36.9	37.7	34.6	36.4
Aspen	37.5	35.3	35.0	36.6	37.6	38.1	35.3	37.3 *	38.2	36.8	35.7	36.4
Mean	39.6	34.9	36.4	38.2	39.0	41.0	35.6	35.5	39.2	38.6	36.6	37.4
LSD (0.05)	1.0	NS	2.3	1.1	1.1	1.2	1.3	1.1	1.3	1.9	1.3	0.3
CV (%)	1.5	5.0	3.8	1.7	1.6	1.8	2.1	1.9	1.8	2.7	2.0	2.7

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

Table 18. Sources for Seed and Blackleg Ratings for Entries of the National Canola Variety Trial, 1997-98.

Seed Source	Entries	Blackleg Rating 1/ 1998		Blackleg Rating 1/ 2yr
Calgene Oil Division	Falcon	5	*	12
1190-A U.S. Route 19 South	Jetton	7	*	11
Leesburg, GA 31763				
Kansas State University	KS1701	17		18
Department of Agronomy	KS3203	10	*	15
Throckmorton Hall	KS3579	20		23
Manhattan, KS 66506-5501	KS3580	7	*	13
	Plainsman (KS3505)	0	*	13
McKay Seed Company	Ceres	10	*	14
2945 Road N N.E.				
Moses Lake, WA 98837				
Spectrum Crop Devlopment	WW1089	27		----
Post Office Box 541	Casino	13		15
Ritzville, WA 99169				
University of Arkansas	ARC91003-7L-3	13		----
Department of Plant Science	ARC91004-12L-3	7	*	----
Fayetteville, AR 72701	ARC91022-59L-4	17		----
University of Georgia	UGA488.7H	30		----
Department of Crop & Soli Science				
Georgia Station, Griffin, GA 30223-1797				
University of Idaho	Aspen	40		39
Dept. of Plant, Soil, and Envo. Science	Bridger	23		24
Moscow, ID 83843-4196	Ericka	17		17
	ID.92.SW.76.75	17		----
	ID.92.WC.2.24.5	10	*	----
	ID.92.WC.3.13.4	10	*	----
	ID.WR.465.2.4	10	*	----
	Selkirk	10	*	14
University of Missouri	MO503-1	13		16
Waters Hall				
Columbia, MO 65211				
Allelix, Inc.	Winfield	10	*	15
Ontario, Canada				
	Mean	20		21
	LSD (0.10)	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 with severe basal stem canker. Data collected at Griffin and Midville, GA by D.V. Phillips, C.B. Hill, L.Denmon, and D. Spradlin. These 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.

Senior Author

Charlie Rife, Dept. of Agronomy, Kansas State Univ., Manhattan

Other Contributors

William Heer, KSU South Central Experiment Field, Hutchinson
Keith Janssen, KSU East Central Experiment Field, Ottawa
James Long, KSU Southeast Agricultural Research Center, Parsons
Herbert Sunderman, KSU Northwest Research-Extension Center, Colby
Merle Witt, KSU Southwest Research-Extension Center, Garden City
Richard Auld, Texas Tech University, Lubbock
Robert Bacon, University of Arkansas, Fayetteville
David Baltensperger, University of Nebraska, Scottsbluff
Brent Bean, Texas A&M University, Bushland
Harbans Bhardwaj, Virginia State University, Petersburg
David Bordovsky, Texas A&M University, Vernon
Ellsworth Christmas, Purdue University, West Lafayette, IN
Sabry Elias, Alabama A&M University, Normal
Roscoe Ivy, Mississippi State University, Prairie
Duane Johnson, Colorado State University, Ft. Collins
Harry Minor, University of Missouri, Columbia
Lenis Nelson, University of Nebraska, Lincoln
Paul Raymer, University of Georgia, Griffin
R. Saunders, Mississippi State University, Holly Springs
Michael Schmidt, Southern Illinois University, Carbondale
David Starner, Virginia Tech University, Orange

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

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