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Plainsman Canola

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Plainsman is the first winter canola variety developed by the Kansas Agricultural Experiment Station and it was released in 1998. Foundation and certified seed of Plainsman was distributed on a limited basis during the fall of 1998 and is available on a widespread basis for fall planting in 1999.

Origin and development. Plainsman was selected from the cross Indore / Sipal / / Liraglu / / / Bienvenu. This cross was made in 1987 at the Idaho Agricultural Experiment Station at Moscow, ID 83843. An F_3 bulk population was received by the Kansas Agricultural Experiment Station at Colby, KS in 1990. Single plant selections were advanced, open pollinated, in the vicinity of sister lines for 2 years at Colby and 1 year at Manhattan, KS. Breeder seed of Plainsman was increased from 18 single plants selected on the basis of oil and meal quality in the F_8 generation.

Agronomic characteristics. Seed of Plainsman is low in erucic acid and glucosinolates. Plainsman has shown a significant improvement in winter hardiness over previously released winter canola cultivars for conditions of the Great Plains. During the 4 seasons of 1994-95 through 1997-98, Plainsman averaged 75.2 percent winter survival compared to 69.5 percent for 'Ceres' at 79 environments (Table 1). These means include 24 environments with 100 percent survival and 8 environments with 0 percent survival. Differences in survival are more dramatic in the Great Plains where environments have the potential to be more extreme.

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Yield potential of Plainsman has been good in the conditions of the Great Plains (Table 2). In 1995, the average yield for Plainsman was 1,239 pounds per acre (106 percent of the average). In 1996, its yield was in the top LSD group at 1,028 pounds per acre (148 percent of average). In 1997, in the southeast United States, Plainsman yielded 1,667 pounds per acre (109 percent of average). Plainsman had yields of 1,741 pounds per acre (122 percent of average) in the midwest United States and 2,323 pounds per acre (142 percent of average) in the central Great Plains. Plainsman yielded 976 pounds per acre (95 percent of average) in the High Plains. Yields of Plainsman in 1998 were 1,551 pounds per acre (96 percent of average) in the Southeast; 1,918 pounds per acre (107 percent of average) in the Midwest; and 1,053 pounds per acre (112 percent of average) in the Great Plains.

Plainsman is 1.7 days later than Ceres for 50 percent bloom date and reaches maturity 2.2 days later than Ceres (Table 1). Plainsman is 49.1 inches tall, and about average for total oil with 36.3 percent. Plainsman has average resistance to shattering and better than average tolerance to lodging. Test weights were 46.6 pounds per bushel. Plainsman's response to virulent blackleg [caused by Leptosphaeria maculans (Desmaz.) Ces. and De Not.] is similar to that of Falcon, which is considered tolerant.

Area of Adaptation. Plainsman has out performed other canola varieties in eastern and northern Kansas. Winter hardiness may not always be sufficient for the two northern tiers of counties. Plainsman also has performed well at test locations in Missouri, Illinois, and Arkansas.

Canola in the Great Plains. Canola is an oilseed that is new to the Great Plains. Canola production would benefit Great Plains agriculture by diversifying crop rotations, spreading economic risk, producing a desirable oil and high quality protein feed supplement, more effectively controlling grassy weeds, and reducing levels of certain pathogens. Canola is an excellent crop to rotate with winter wheat. Research has shown yield increases of 8 to 12 percent for wheat in the first year following canola. Small grain equipment is used for canola production so large investments in machinery are not required.

Table 1. Agronomic characteristics of Plainsman and other common varieties.

	% Winter Survival	50% Bloom Date	Maturity Date	Height in	Lodging %	Shattering %	Test Wt. lb / bu	Total Oil %	Blackleg[1]
Plainsman	75.2	4 / 19	6 / 13	49.1	7.4	5.5	46.6	36.3	13
KS3580	76.6	4 / 15	6 / 10	44.8	8.5	4.4	46.5	36.8	13
Ceres	69.5	4 / 17	6 / 11	44.9	8.0	4.3	46.5	36.8	14
Bridger	71.2	4 / 13	6 / 8	42.0	25.6	7.5	45.4	37.7	24

[1]Blackleg rated as total percentage of plants killed by blackleg or with severe basal stem canker. Falcon had a rating of 12.

Table 2. Yield (lb / a) of Plainsman and other common varieties in different regions of the United States.

	Regional Averages					Kansas Averages	
Line	South-east	Mid-west	Central Plains	High Plains	U.S. Means	Eastern & Northern	South-central & Southwest
Plainsman	1562	1832	1471	1076	1497	1446	1432
KS3580	1847	1964	1572	1356	1690	1171	1823
Ceres	1875	1831	1632	1241	1664	1344	1925
Bridger	1393	1570	932	855	1181	811	811