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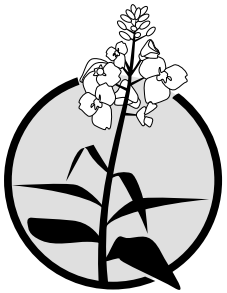

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Wichita Canola

Wichita is a new winter canola variety developed by the Kansas Agricultural Experiment Station. It was released in 1999. Foundation and certified seed of Wichita was distributed on a widespread basis for fall planting in 1999.

Origin and development. Wichita was selected from the cross Indore/Sipal/Liraglu/3/ Jet Neuf. 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 Hays, KS in 1990. Single plant selections were advanced, open pollinated, near sister lines for 2 years at Hays and 1 year at Manhattan. Breeder seed of Wichita was increased from 45 single plants selected on the basis of oil and meal quality in the F_8 generation.

Agronomic characteristics. Seed of Wichita is low in erucic acid and glucosinolates. Wichita has shown a significant improvement in winter hardiness over previously released winter canola cultivars that were not developed in the Great Plains. Since 1999, Wichita averaged 81.7 percent winter survival compared to 80.2 percent for Plainsman and 70.6 percent for Ceres at 94 environments (Table 1). These means include 31 environments with 100 percent survival and 8 environments with less than 2 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 Wichita has been good in the conditions of the Great Plains (Table 1). In 1995, yields for Wichita were in the top LSD group with 1,422 pounds per acre (122 percent of the average). In 1996, yields of Wichita were 879 pounds per acre (127 percent of average). In 1997 in the southeast United States, Wichita yielded 1,840 pounds per acre (121 percent of average). Wichita had yields of 1,801 pounds per acre (127 percent of average) in the Midwest and yields of 2,391 pounds per acre (146 percent of average) in the central Great Plains. Wichita was the top yielding line, with 1,362 pounds per acre (133 percent of average), in the High Plains. Yields of Wichita were in the top LSD group in the Southeast in 1998 and were 1,967 pounds per acre (122 percent of average). Yields were 2,094 pounds per acre (116 percent of average) in the Midwest. Wichita was again the top yielding line during 1999 in the Great Plains, with yields of 1,298 pounds per acre (138 percent of average).

Wichita is 1.5 days earlier than Ceres to 50 percent bloom, but its maturity is similiar to that of Ceres (Table 2). Wichita is 45 inches tall, and has average total oil percentage levels with 37.1 percent. Wichita has better than average resistance to shattering and better than average tolerance to lodging. Test weights were 46.5 pounds per bushel. Wichita'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. Wichita has outperformed other canola varieties in south central and southwest Kansas. Wichita is earlier and appears to have better heat stress tolerance than Plainsman. Although Wichita's overall winter survival percentage is slightly better than Plainsman's, Plainsman appears to have better cold tolerance than Wichita and is better suited to northern Kansas, where minimum temperatures are a concern. Wichita also has performed well at test locations in Arkansas, Georgia, Illinois, Indiana, Missouri, Texas, and Virginia.

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. Yield and winter survival of Wichita and other common varieties in different regions of the country.

	Yield (lb/a)				Winter Survival (%)			
Line	South-east	Mid-west	Great Plains	U.S. Means	South-east	Mid-west	Great Plains	U.S. Means
Wichita	1781	1910	1456	1658	97.8	83.6	65.3	81.7
Plainsman	1381	1669	1252	1424	95.8	84.4	63.9	80.2
Ceres	1666	1823	1461	1645	96.9	81.1	50.3	70.6
Bridger	1361	1672	927	1377	95.1	83.1	54.1	73.3

Table 2. Agronomic characteristics of Wichita and other common varieties.

	50% Bloom[1]	Maturity[1]	Height in.	Lodging %	Shattering %	Test Weight lb/bu	Total Oil %	Blackleg[2]
Wichita	106.1	161.5	45.6	8.5	4.4	46.5	37.1	13
Plainsman	109.7	163.8	49.3	7.4	5.5	46.6	36.4	13
Ceres	107.6	161.6	45.2	8.0	4.3	46.5	37.0	14
Bridger	103.2	159.4	43.8	25.6	7.5	45.4	38.3	24

[1] Days after January 1.

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