LAMBERT

Soft White Winter Wheat

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Lambert (PI 583372) is a common soft white winter wheat developed by the University of Idaho and jointly released in 1993 by the UI, Washington State University, and Oregon State University. Intended as a replacement for Stephens, Lambert has yielded 2 bushels per acre more grain than Madsen and has equalled or exceeded Stephens under dryland and irrigated production. Lambert also has better tolerance or resistance to *Cephalosporium* stripe and *Septoria* leaf blotch than Stephens, and lower protein and earlier heading date than Madsen.

History

Lambert was derived from a Stephens/Sprague cross made in 1976 by W. E. Kronstad at Oregon State University and was first selected in the F4 generation at Pendleton, Oregon, by C.T. Liu, University of Idaho. The selection was assigned the experimental number ID85-153 and has been evaluated in yield trials in Idaho since 1987. From 1,000 head rows of ID85-153, uniform rows were bulked and planted in 1992 to produce breeder seed of Lambert. The name was selected to recognize Lambert Erickson, former weed science faculty member in the UI's Plant, Soil, and Entomological Sciences Department.

Description

Lambert is an awned, semi-dwarf, white chaffed common soft white winter wheat. The plant is blue-green in color with an erect to semi-erect flag leaf. The kernels are large, white, and soft.

Adaptation and performance

Lambert is an early-season variety with high yield potential and good grain quality. It is adapted for intermediate to high rainfall dryland areas in northern Idaho, eastern Washington and eastern Oregon. Lambert can be grown in irrigated regions but its height may preclude production under wheel line irrigation.

Lambert yielded 2 bushels per acre more grain than Madsen and Daws and equalled the yield of Stephens across 54 dryland northern Idaho variety evaluations (Table 1). In northern Idaho, Lambert performed best in the area from Deary south to Grangeville. In this region, Lambert averaged 88 bushels per acre, compared to 84 for Stephens and 81 bushels per acre for Madsen and Daws. In 20 southern Idaho variety evaluations (mostly irrigated), Lambert outyielded Stephens by 1 bushel per acre, Madsen by 2 bushels per acre, and Daws by 3 bushels per acre (Table 2).

When averaged across 70 statewide production environments, grain test weight of Lambert was equal to Madsen and 0.7 lb/bushel greater than Stephens (Table 3). Whole grain protein was 0.8 percent less than Madsen and 0.3 percent less than Stephens. Kernel hardness, based on near-infrared reflectance (NIR), was greater for Lambert than the check varieties but still within the acceptable range for soft white wheat based on FGIS guidelines. Lambert averaged 3 inches taller than Stephens, has good lodging resistance and is similar to Stephens for heading date. Winter-hardiness of Lambert is similar to Stephens.

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Table 1. Yield of Lambert winter wheat and three check varieties for 54 site/years in northern Idaho, dryland, 1989-95.

Test site	Site/Yrs	Lambert	Madsen	Stephens	Daws
		bu/acre			
Bonners Ferry	8	72	79	80	81
Tensed/Plummer	9	98	107	106	104
Deary/Troy	7	76	71	69	69
Moscow	6	103	99	107	101
Genesee	4	88	83	88	81
Tammany	4	87	77	72	85
Upper Tammany	6	92	85	93	86
Craigmont	4	60	60	61	60
Grangeville	6	98	85	93	80
Total/Average	54	87	85	87	85

Table 2. Yield of Lambert winter wheat and three check varieties for 20 site/years in southern Idaho 1991-95.

Test site		Site/Yrs	Lambert	Madsen	Stephens	Daws
			bu/acre			
Aberdeen	irrigated	8	138	138	139	135
Parma	irrigated	3	144	145	149	147
Kimberly	irrigated	5	142	126	133	130
Burley/Paul	irrigated	2	115	124	120	123
Idaho Falls	dryland	2	55	63	54	54
Total/Average		20	129	127	128	126

Lambert has adult plant resistance to prevalent northwestern biotypes of stripe rust and has better *Cephalosporium* stripe tolerance than Stephens. Lambert has also shown more resistance to *Septoria* leaf blotch. Lambert is susceptible to strawbreaker footrot and dwarf bunt, and moderately susceptible to powdery mildew. In regions with a high incidence of dwarf bunt, Lambert should be planted with a seed treatment effective for control of that disease.

Milling and baking quality

Average percent flour yield of Lambert was the same as Stephens and 2 percent greater than Daws. Lambert flour protein averaged 0.5 percent lower than Stephens and 0.8 percent lower than Madsen. Baking quality, as estimated by cookie diameter, was good for Lambert, averaging 0.1 cm greater than Daws. Lambert has a low flour ash (nonorganic components) score and superior cake volume and cake score. Lambert is considered to have good to excellent overall end use quality.

Table 3. Agronomic performance, grain quality, and flour quality characteristics of Lambert and three check varieties tested innorthern and southern Idaho 1989-95.

Performance characteristic	Site/Yrs	Lambert	Madsen	Stephens	Daws
Agronomic Performance					
Plant Height (ins)	70	37	35	34	34
Lodging (%)	32	10	6	7	8
Heading Date (days after June 1)	24	8	13	7	11
Grain Quality					
Test Weight (lb/bu)	70	58.6	58.6	57.9	59.2
Grain Protein (%)	28	11.5	12.3	11.8	11.3
NIR Kernel Hardness (0-100)	34	36	33	30	31
Flour Quality					
Flour Yield (%)	39	67	68	67	65
Flour Protein (%)	48	8.9	9.7	9.4	9.0
Cookie Diameter (cm)	40	8.7	8.8	8.8	8.6

Availability of Lambert seed

Breeder and foundation seed of Lambert will be maintained by the Idaho Agricultural Experiment Station. Requests for foundation seed should be directed to Coordinator, Foundation Seed Program, College of Agriculture, University of Idaho, Kimberly Research and Extension Center, 3793 N. 3600 East, Kimberly, Idaho, 83341.

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