CIS 933

COLTER
Six-row spring feed barley

L. D. Robertson, D. M. Wesenberg, J. C. Whitmore, B. D. Brown, and D. E. Burrup

Colter (PI 537967) is a new six-row spring feed barley developed and released for production in Idaho and other western states. Colter is expected to compete well with existing six-row barley varieties in both irrigated and dryland environments.

Colter is superior to Steptoe in lodging resistance and has higher kernel plumpness and test weight than Karla, one of its parents. It is also earlier in heading and shorter than Karla. Colter was developed cooperatively by the U.S. Department of Agriculture Agricultural Research Service and the Idaho, Oregon, and Washington agricultural experiment stations. It was released for commercial production in 1991.

History

Colter originated at Aberdeen as an F_5 head row from the cross 73Ab2199/Karla. The parent 73Ab2199 is a six-row spring selection developed by the Agricultural Research Service at Aberdeen from the cross Steptoe/Larker. The parent Karla was also developed by the Agricultural Research Service at Aberdeen from the cross 63Ab2987-9/2*Conquest. The parent 63Ab2987-9 is a sister selection to Karl.

Colter was identified as selection 79Ab10719-66LC prior to release. The selection 79Ab10719-66LC originated from 108 reselections of 79Ab10719, all grown in nonreplicated plots under irrigation at Aberdeen in 1984. Seventy of these 108 reselections were grown in replicated trials at Aberdeen in 1985. Selection of 66 lines composited as 79Ab10719-66LC in early 1986 was based on yield, test weight, kernel plumpness, heading date, height, incidence of Alternaria blight, and general agronomic appearance in the 1984 and 1985 trials. 79Ab10719-66LC was tested 3 years in the regional Western Spring Barley Nursery and Western Dryland Spring Barley Nursery in 1988-90.

Variety description

Colter is a midseason, white aleurone, six-row spring barley with relatively lax spikes, smooth awns, and long rachilla hairs. Colter is similar to Steptoe in height and shorter than Morex. Yields have been equal to those of Steptoe and about 20 percent greater than those of Morex under both irrigation and dryland production in southern Idaho.

Protein content tends to be lower than in most other six-row varieties. Test weight averages 1 pound per bushel heavier than that of Steptoe, and heading date is 1 day later. Percentage plump seed is less than that of Steptoe.

Areas of adaptation and agronomic characteristics

Colter is adapted for production under a broad range of irrigated and nonirrigated conditions. It has been widely tested in irrigated and dryland trials in Idaho and other western states since regional testing was initiated in 1988.

In six station-years of testing in irrigated trials at Aberdeen, Idaho, from 1986 through 1991, Colter averaged 157.7 bushels per acre or 107, 109, 115, 138, and 119 percent of the yields of Steptoe, Columbia, Gus, Morex, and Russell, respectively (table 1). In the same trials, Colter equaled or exceeded all these varieties in test weight, but its kernel plumpness was lower. Colter was similar to Steptoe and Russell in height and taller than Gus, Gustoe, Columbia, and Westbred 501.

In six station-years of testing in dryland trials at Tetonia, Idaho, from 1986 through 1991, Colter averaged 53.8 bushels per acre or 96 and 109 percent of the yields of Steptoe and Russell, respectively (table 2). In the same dryland trials, Colter, Steptoe, and Russell averaged 51.1, 49.7, and 52.4 pounds per bushel test weight. Colter was inferior to both Steptoe and Russell in kernel plumpness.

Agronomic data for other locations appear in tables 3, 4, 5, 6, and 7.

Availability of Colter seed

Breeder and foundation seed of Colter will be maintained by the Foundation Seed Program, Idaho Agricultural Experiment Station. Requests for seed should be directed to Coordinator,

University of Idaho
College of Agriculture
Cooperative Extension System □ Agricultural Experiment Station

Foundation Seed Program, College of Agriculture, University of Idaho, Moscow, Idaho 83843. The U.S. Department of Agriculture has no seed for commercial distribution.

About the authors — Larry D. Robertson, Extension crop management specialist, Aberdeen Research and Extension Center, University of Idaho; Darrell M. Wesenberg, research agronomist, Small Grains Germplasm Research Facility, USDA Agricultural Research Service, Aberdeen, Idaho; James C. Whitmore, superintendent, Tetonia Research and Extension Center, University of Idaho; Bradford D. Brown, Extension crop management specialist, Parma Research and Extension Center, University of Idaho; and Dave E. Burrup, biological technician, Small Grains Germplasm Research Facility, USDA Agricultural Research Service, Aberdeen, Idaho.

Table 1. Agronomic data for selected six-row barley varieties grown under irrigation at Aberdeen, 1986-91.

Variety	Feed or malt	Yield	Test weight	Plump seed	Plant height	Heading date	Lodging
		(bu/acre)	(lb/bu)	(%)	(inches)	(from Jan. 1)	(%)
Colter	F	157.7	52.0	80	34	171	9
Columbia	F	144.6	49.7	91	30	179	2
Gus	F	136.6	50.7	86	28	175	6
Gustoe	F	137.3	51.0	84	25	177	5
Morex	M	114.2	52.0	90	39	171	29
Russell	M	132.2	51.6	86	35	169	7
Steptoe	F	147.7	51.0	92	35	171	25
Westbred 501	F	132.5	50.6	90	26	173	3

Table 2. Agronomic data for selected six-row barley varieties grown on dryland at Tetonia, 1986-91.

Variety	Yield	Test weight	Plump seed	Height
	(bu/acre)	(lb/bu)	(%)	(inches)
Colter	53.8	51.1	77	26
Russell	49.2	52.4	85	25
Steptoe	55.8	49.7	93	25

Note: Data for 6 years except for height, 3 years.

Table 3. Agronomic data for selected six-row spring barley varieties for southwestern Idaho, irrigated, nine location-years, 1989-91.

Variety	Yield	Test weight	Protein	Height	Lodging
	(bu/acre)	(lb/bu)	(%)	(inches)	(%)
Colter	106.0	49.1	9.8	39	50
Advance	101.0	47.0	11.0	35	80
Gustoe	113.7	47.5	10.4	31	59
Morex	82.0	48.9	10.6	40	76
Sprinter	93.3	48.5	10.6	36	38
Steptoe	106.0	48.1	10.2	36	72

Table 4. Agronomic data for selected six-row barley varieties grown on dryland at Soda Springs, 1983-86, 1988, and 1990-91.

Variety	Yield	Test weight	Plump seed	Height
	(bu/acre)	(lb/bu)	(%)	(inches)
Colter	56.7	47.7	80	23
Morex	46.2	48.6	82	25
Russell	46.2	48.8	81	25
Steptoe	52.4	46.5	84	24

Note: Seven years data except for height, 3 years.

Table 5. Agronomic data for selected six-row spring barley varieties grown on dryland at five locations in northern Idaho, 1991.

Variety	Yield	Test weight	Height	Lodging	Plump seed
	(bu/acre)	(lb/bu)	(inches)	(%)	(%)
Colter	88.4	47.0	38	69	67
Cougbar	84.2	45.7	39	74	70
Excel	79.2	48.4	41	91	85
Hazen	81.7	48.6	42	52	91
Morex	68.4	48.9	43	91	79
Russell	86.7	48.1	40	57	76
Steptoe	88.4	45.8	40	86	88

Table 6. Agronomic data for Colter and selected six-row varieties grown 55 station-years in the Western Spring Barley Nursery, 1988-90.

Variety	Yield	Test weight	Plump seed	Height	Heading date	Lodging
	(bu/acre)	(lb/bu)	(%)	(inches)	(from Jan. 1)	(%)
Colter	99.0	49.8	75	30	174	13
Morex	80.4	50.7	79	33	175	38
Steptoe	97.3	49.1	84	30	174	29

Source: Summarized from unpublished annual summary reports of the Western Spring Barley Nursery, 1988, 1989, and 1990.

Table 7. Agronomic data for Colter and selected six-row barley varieties grown 31 station-years in the Western Dryland Spring Barley Nursery, 1988-90.

Variety	Yield	Test weight	Plump seed	Height	Heading date
	(bu/acre)	(lb/bu)	(%)	(inches)	(from Jan. 1)
Colter	53.2	49.4	55	24	177
Hector	53.6	52.6	64	26	181
Steptoe	52.6	48.0	68	23	176

Source: Summarized from unpublished annual summary reports of the Western Dryland Spring Barley Nursery, 1988, 1989, and 1990.

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