

TARGHEE

Two-row spring feed barley

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Targhee (PI 537438) is a new two-row spring feed barley variety developed and released for production in Idaho and other western states. Targhee is expected to compete favorably with existing two-row spring barley varieties such as Hector in nonirrigated and dryland environments.

Targhee is also expected to have advantages over Hector in short-season, limited-irrigation environments because of its improved lodging resistance. In five Idaho trials with differential lodging, Targhee averaged 9 percent lodging compared with 26 percent for Hector. Targhee was developed cooperatively by the U.S. Department of Agriculture Agricultural Research Service and the Idaho, Oregon, and Washington agricultural experiment stations.

History

Targhee was developed from the cross 60Ab1810-53/Hector. The parent 60Ab1810-53 is one of the 35 component lines of the two-row spring malting barley variety Klages. The parent Hector was developed by Agriculture Canada at Lethbridge, Alberta, from the cross Betzes/Palliser.

Targhee originated at Aberdeen, Idaho, as an F₃ generation selection in 1978 and was identified as 78Ab10099 and 78Ab10099-B prior to release. 78Ab10099-B is a breeder seed bulk of 280 head rows, first grown at the Aberdeen Research and Extension Center in 1986.

Targhee was first tested in replicated trials in Idaho in 1980. Since that time, it has been extensively tested in irrigated and nonirrigated trials. It was tested 9 years in the regional Western Dryland Spring Barley Nursery, from 1982 through 1990.

Variety description

Targhee is a midseason, white aleurone, two-row spring barley with lax spikes, rough awns, and long rachilla hairs. Targhee has similar yields to those of Hector under non-

irrigated conditions and generally higher yields under short-season environments with limited irrigation.

Targhee is not as well adapted to highly productive irrigated conditions due to its lesser lodging resistance compared with other stronger-strawed varieties. Targhee is similar to Hector in test weight, slightly higher in plump seed percentage, 2 inches shorter, and has stronger straw.

Areas of adaptation and agronomic characteristics

Targhee is adapted for production under nonirrigated conditions in Idaho and other western states. It is also adapted to short-season environments with limited irrigation. In 9 station-years of testing in nonirrigated trials at Tetonia from 1982 to 1991 (table 1), Targhee averaged 59.0 bushels per acre or 100, 107, and 117 percent of the yields of Hector, Clark, and Pirolina, respectively. In the same trials, Targhee, Hector, and Pirolina had essentially identical test weights, which were slightly higher than that of Clark.

Targhee averaged 89 percent plump seed (over a 6/64 screen) compared with 87, 85, and 83 percent for Hector, Clark, and Pirolina, respectively. The varieties were similar in height. In six Idaho trials with differential lodging, Targhee averaged 15 percent lodging versus 32 percent for Hector.

In 12 station-years of testing in irrigated trials at Aberdeen from 1980 to 1991 (table 2), Targhee averaged 128.4 bushels per acre or 112 percent of the yield of Klages. Targhee also exhibited advantages over Klages in kernel plumpness and heading date, but was inferior to Klages in lodging resistance, having 18 percent lodging compared with 12 percent for Klages.

In 9 years of testing (1982-90) in the regional Western Dryland Spring Barley Nursery (table 3), Targhee's yield averaged 102 percent that of Hector and 104 percent that of Clark. Its test weight was 0.8 pounds per bushel lower

than that of Hector and equal to that of Clark. Targhee was 3 percentage points higher than Hector in kernel plumpness and about 2 inches shorter. Targhee, Hector, and Clark had similar heading dates.

Other agronomic data are presented in tables 4, 5, and 6.

Availability of Targhee seed

Breeder and foundation seed of Targhee will be maintained by the Foundation Seed Program, Idaho Agricultural Experiment Station. Requests for seed should be directed to Coordinator, Foundation Seed Program, College of Agriculture, University of Idaho, Moscow, Idaho 83843. The U.S.

Table 1. Agronomic data for Targhee and selected barley varieties grown on dryland at Teton, 1982-84 and 1986-91.

Variety	Yield	Test weight	Plump seed	Height	Lodging
	(bu/acre)	(lb/bu)	(%)	(inches)	(%)
Targhee	59.0	52.1	89	23	21
Clark	55.0	51.1	85	24	12
Hector	58.9	52.2	87	25	35
Piroline	50.5	52.1	83	23	8

Note: Nine years of data are presented for yield, test weight, plump seed; three for height; and one for lodging.

Table 2. Agronomic data for Targhee and Klages grown under irrigation at Aberdeen, 1980-91.

Variety	Yield	Test weight	Plump seed	Height	Heading date	Lodging
	(bu/acre)	(lb/bu)	(%)	(inches)	(from Jan. 1)	(%)
Targhee	128.4	53.4	93	34	176	18
Klages	115.0	53.1	84	35	179	12

Note: Data are for 12 years for all characteristics except lodging, which has 8 years.

Table 5. Yields of Targhee and selected two-row barley varieties grown on dryland, 1990-91.

Variety	1990 Sublett	1990 Fairfield	1990 Drummond	1991 Drummond	1990 Soda Springs	1991 Soda Springs	1990 Preston	1991 Idaho Falls
	----- (bu/acre) -----							
Targhee	16.1	33.4	55.1	58.7	48.9	66.1	41.4	32.1
Gallatin	13.6	36.0	56.8	—	56.1	—	32.0	—
Hector	16.9	39.7	58.9	57.4	47.5	69.3	38.2	35.6
Klages	6.0	—	47.0	59.5	47.2	57.8	26.0	26.8
Piroline	13.6	34.3	54.9	54.8	46.8	58.7	38.0	36.2

Table 6. Agronomic data for Targhee and selected two-row barley varieties grown during 1990-91.

Variety	Test weight	Test weight	Protein	Height	Heading date	Lodging	Plump seed
	(lb/bu)	(lb/bu)	(%)	(inches)	(from Jan. 1)	(%)	(%)
Irrigated or dry	irr	dry	both	both	both	irr	both
No. of locations	3	8	8	8	5	2	11
Targhee	51.9	46.7	12.2	30	182	60	74
Hector	52.1	47.7	12.3	31	182	60	72
Klages	51.8	47.5	11.7	29	183	55	64
Piroline	52.6	47.2	12.3	29	181	55	68

Note: Locations are the same as in tables 4 and 5.

Department of Agriculture has no seed for commercial distribution.

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Table 3. Agronomic data for Targhee and selected two-row varieties grown in the Western Dryland Spring Barley Nursery.

Variety	Yield	Test weight	Plump seed	Height	Heading date
	(bu/acre)	(lb/bu)	(%)	(inches)	(from Jan. 1)
Targhee	63.4	51.6	74	26	179
Clark	61.4	51.5	71	28	179
Hector	62.9	52.4	71	28	178

Source: Abstracted from the unpublished 1988 annual summary report of the Western Dryland Spring Barley Nursery.

Table 4. Yields of Targhee and selected two-row barley varieties grown under irrigation, 1990-91.

Variety	1990 Kimberly	1991 Kimberly	1990 Minidoka	1990 Idaho Falls	1991 Howe
	----- (bu/acre) -----				
Targhee	139.3	129.8	119.4	66.3	91.0
Gallatin	135.0	—	109.9	86.1	—
Hector	—	—	103.8	64.5	85.5
Klages	130.6	147.1	100.1	85.0	64.3
Piroline	114.9	—	95.4	85.2	80.5

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