

**Table 1. Agronomic performance of H3860224 and selected barley cultivars grown in dryland and irrigated trials in Montana, 1993 to 1999.**

ID	Pedigree	Number of years	Yield	Number of years	Test weight	Number of years	Plump	Number of years	Heading date (days after 1 January)	Number of years	Plant height
			Mg/ha		kg/hL		%				m
P149153	Gallatin (Check)	72	4.880	72	66.54	69	75.6	69	177.3	70	81.3
CI 15856	Lewis	72	4.870	72	66.54	69	77.4	69	178.4	70	81.5
P159182	Chinook	72	4.854	72	66.50	69	74.3	69	178.4	70	80.3
ND 9866	Stark	72	5.058	72	67.18	69	87.0	69	175.1	70	84.1
P156824	Baronesse	72	5.445	72	65.64	69	78.8	69	179.9	70	73.9
CI 15514	Hector	50	4.598	50	65.51	47	73.4	49	178.4	49	82.8
SK 76333	Harrington	72	4.746	72	63.71	69	74.8	69	179.6	70	79.5
H38 X6022	H3860224	72	5.042	72	65.64	69	80.0	69	180.0	70	79.0
MTLB	Valier	30	4.897	30	66.02	30	75.7	28	180.6	29	80.0
SITEME	Site mean	72	4.897	72	56.25	69	77.5	69	177.7	70	78.2

higher proportion of plump kernels than other commonly grown cultivars, except Stark (Table 1).

Foundation and Breeders seed of H3860224 will be maintained by the Montana Foundation Seed Program. Foundation and Registered seed will be available to growers and seed dealers in the spring of 2002. Seed is available in small quantities for research purposes from the corresponding author.

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### Registration of 'Valier' Barley

'Valier', a two-rowed spring feed barley (*Hordeum vulgare* L.) (Reg. no. CV-301, PI 610264), was developed by the Montana Agricultural Experiment Station and released for commercial production in May 1999.

Valier was selected from a cross of 'Lewis'/'Baronesse' made at Bozeman, MT, in 1991. The parent Lewis (CIho 15856), a two-rowed barley, was developed by ARS and Montana State University from the cross 'Hector'/'Klages'. Western Plant Breeders, Bozeman, Montana, introduced the parent Baronesse into the USA from Germany. Baronesse, an important two-rowed feed barley cultivar in the western USA, was formerly a prominent feed barley in Germany.

Valier originated at Bozeman from a series of 58 randomly isolated F<sub>5</sub> plants grown in 1994. These 58 lines were utilized in a series of linkage analysis and quantitative trait locus mapping experiments (Blake et al., 1998) that had the objectives of determining locations of genes from Baronesse that were responsible for its agronomic superiority and determining locations of genes that could possibly affect feedlot performance characteristics. Valier was derived from line number 30 of this 58 member population. Headrow-derived F<sub>9</sub> plots were bulked to form the cultivar Valier. It was designated as MTLB30 before naming and release. Valier is midseason in maturity with midlax, midlong spikes with rough awns that are seminodding to erect before and after maturity, similar to Baronesse.

Kernels have adhering, finely wrinkled hulls, white aleurone, and rachilla hairs are long. Glume awns are equal to the length of the hair-covered glume. Unlike its parent, Baronesse, Valier retains sterile lateral florets. Valier, like Baronesse, flowers nearly 2 d later than its maternal parent, Lewis. Valier is approximately 2 cm shorter than Lewis and is superior to Lewis in lodging resistance. Valier frequently develops red-tipped awns, a distinctive and obvious character. Valier has been relatively free of disease when grown in Montana.

Valier has been widely tested in both dryland and irrigated trials in Montana since 1997. It was tested in the regional Western Spring Barley Nursery and the Western Dryland Spring Barley Nursery in 1999 and 2000. In 21 location-years trials on dryland and under irrigation in Montana in 1999 and 2000, Valier's grain yield was 5515 kg ha<sup>-1</sup> or 103% of 'Gallatin' and 104% of 'Harrington'. Valier out yielded all commonly grown cultivars in the Montana trials except Baronesse. Valier also produced high test weight grain with good kernel plumpness.

Valier was developed specifically to combine excellent agronomic performance with improved cattle-feeding characteristics. In a 20 calf per treatment evaluation, Valier-fed calves gained weight more rapidly than their half-siblings fed either Lewis or Baronesse barley (Boss et al., 1999).

Foundation and Breeders seed of Valier will be maintained by the Montana Foundation Seed Program. Varietal protection under title V of the Plant Variety Protection Act is being sought. Foundation, Registered and Certified seed is now widely available throughout Montana. Seed is available in small quantities for research purposes from the corresponding author.

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