

### Registration of 'Ishi' Barley

'Ishi' barley is a six-rowed feed barley (*Hordeum vulgare* L.) (Reg. no CV-324, PI 639496) released by the California Agricultural Experiment Station in 2005. Ishi is named for the last individual of the Yahi subgroup of the Yana Indians, who lived in the Mt. Lassen foothills of California. The cultivar was selected from the 1994 cross 'UC 828'/'UC 960' (Gallagher et al., 1996, 2002) at the University of California at Davis (UC Davis). Subsequent generations were handled in a modified bulk-pedigree selection program. A single F<sub>5</sub> head row was selected, harvested, and placed into a preliminary grain yield trial as PYT99 A-13 at UC Davis during the 1998–1999 growing season. Subsequently, the line was designated UC 1047 and placed into statewide grain yield trials and tested for 5 yr.

In grain yield tests (10 trials) in the San Joaquin Valley, Ishi averaged 6804 kg ha<sup>-1</sup>, which was 9% more than 'UC 933' (Gallagher et al., 2003) and 12.4% more than 'UC 937' (Gallagher et al., 2002). In the Sacramento Valley (10 trials), Ishi averaged 7272 kg ha<sup>-1</sup>, which was 5.5% more than UC 933 and 12.6% more than UC 937. In rainfed environments (12 trials), Ishi averaged 3134 kg ha<sup>-1</sup>, which was 91% of UC 933 and was similar to UC 937, indicating no advantage for Ishi in low rainfall, dryland situations.

Ishi has the *sdw1* gene and is short statured, averaging 84.6 cm, and is similar to UC 937 and 3.6 cm taller than UC 933, averaged over 32 location-years in Central Valley and Central Coast environments. For lodging resistance, Ishi averaged 2.5 (4–14%) on a scale of 1 to 10 and was superior to UC 937 but similar to UC 933 over 20 environments where lodging occurred. For days to heading, Ishi averaged 4 d earlier than UC 937 and 3 d later than UC 933, but all three cultivars were similar for time to maturity. Times for heading and maturity were noted only at UC Davis (five environments).

Ishi is moderately resistant to *Barley yellow dwarf virus*, leaf rust (caused by *Puccinia hordei* Otth.), powdery mildew [caused by *Erysiphe graminis* DC. f. sp. *hordei* Em. Marchal; syn. *Blumeria graminis* (DC.) E.O. Speer], net blotch (caused by *Pyrenophora teres* Drechs.), and scald [caused by *Rhynch-*

*osporium secalis* (Oudem.) J.J. Davis]. Ishi is resistant to pathotypes of stripe rust (caused by *Puccinia striiformis* Westend. f. sp. *hordei*) existing in the Central Valley of California as a result of the transmission of resistance from UC 960.

Ishi is heterogeneous for rough and smooth awns, having less than 1% smooth-awned plants. The spike is waxy and semi-erect. Kernel weight averaged 46.5 mg over 13 environments and was about 1 mg more than that observed for UC 933 and about 1 mg less than for UC 937. Test weights (31 location-years) for Ishi averaged 62.8 kg hL<sup>-1</sup> and were not significantly different from those measured for UC 933 or UC 937. The kernels are covered and the aleurone is white. Grains are long (>10 mm), semiwrinkled, and without hairs on the ventral furrow. Rachilla hairs are long. Resistance to shattering is good and similar to that of UC 933 and UC 937.

Breeder and Foundation seed classes are maintained by the Foundation Seed and Certification Services, University of California, Davis, CA 95616. Limited amounts of seed are available from the corresponding author for 5 yr. Plant variety protection will not be sought.

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### References

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