

REGISTRATION OF CROP CULTIVARS

REGISTRATION OF 'BEARPAW' BARLEY

'BEARPAW' Barley (*Hordeum vulgare* L.) (Reg. no. 217, PI 531228) was developed cooperatively by USDA-ARS and the Montana Agricultural Experiment Station and released in Sept. 1989 by the Montana Agricultural Experiment Station. Bearpaw is a selection from the cross TR440/'Clark' made at Bozeman, MT, in 1979 by E.A. Hockett. TR440 is from a cross of 'Klages'/'Zephyr'/'Centennial' made at Saskatoon, Saskatchewan, and Clark is a cross of 'Hector'/'Klages'. The F_3 selection 81-41-616 was tested in Montana in 1982 and 1983. In 1983, seven lines from the original F_3 selection were bulked to form MT 81616, which was yield tested from 1985 through 1987 in Montana and Western Regional barley nurseries. In 1987, nine uniform plant progeny rows from MT 81616 were bulked to form PI 531228 and tested in Montana nurseries in 1988. Breeder seed of PI 531228 was increased in Yuma, AZ, in 1987-88 and in Montana in 1988 and 1989.

Bearpaw is a two-rowed, white-kerneled, spring barley that is midseason in maturity. It has mid-lax, mid-long spikes which are seminodding before maturity and nodding at maturity in a manner similar to that of Clark. The spike has rough awns, glume awns which are equal in length to those of the hair covered glumes, and rachis edges with hairs. The kernels are mid-size, with long-haired rachillas and adhering, finely wrinkled, thin hulls without barbs on the lateral veins.

When compared to Hector, Bearpaw is 2 d later in heading, has lower test weight, and is similar in percentage of plump kernels. It is about 3 cm shorter in height than Hector and has stiffer straw. The thin hull of Bearpaw may require more care in threshing than other cultivars, to avoid excessive kernel skinning. The disease resistance of Bearpaw is largely unknown, but it was similar to Klages for net blotch (caused by *Pyrenophora teres* Drechs.) reaction in North Dakota. In a three-year (1985-1988) yield comparison with 186 station years in Montana and Western Regional nurseries, Bearpaw yielded 1% more than 'Gallatin', 5% more than 'Harrington', 6% more than Hector, 13% more than Klages, but 2% less than 'Steptoe'. Bearpaw is especially well adapted to central and north central Montana: in a 53-station comparison it yielded 3% more than Steptoe, 3% more than Gallatin, 5% more than Harrington, 9% more than Hector, and 14% more than 'Pirolina'. Bearpaw is expected to be best adapted to dryland and irrigated areas of central and north central Montana or areas in the Pacific Northwest and Northern Great Plains with environments similar to those where it is adapted in Montana.

On the basis of 31 Montana and Western Regional nursery samples grown in 1985-1987, Bearpaw is superior in malting quality to Harrington and Klages. Bearpaw had 80.8% malt extract, 176 degrees diastatic power, and 53.4 20° units α -amylase compared to 80.2 and 79.3% malt extract, 149 and 148 degrees diastatic power, and 47.4 and 42.9 20° units α -amylase for Harrington and Klages, respectively. Pilot scale malting evaluations of 1986 and 1987 crops of Bearpaw by the American Malting Barley Association, Inc., were satisfactory. A winter increase was grown in 1987-1988 in Arizona so that Bearpaw could be tested on a plant scale for malting and brewing from the 1988 crop grown in Montana and Washington. Classification of Bearpaw as a malting cultivar awaits the results of the 1988 and 1989 plant scale tests. In a feeding trial using 1988 Montana-grown Bearpaw, it had significantly better feed conversion (kg feed/kg gain) than Gallatin, 'Lewis,' or 'WPB 501' feed barleys when fed to swine (C.W. Newman, Montana State University, 1988, unpublished data). Bearpaw at present is recommended as a feed barley for production on dry and irrigated land in Montana.

Bearpaw is named for the Bear Paw Mountains, in north central Montana, where this cultivar is best adapted.

Breeder and foundation seed of Bearpaw will be maintained by the Foundation Seed Stocks Program, Plant and Soil Science Department, Montana Agricultural Experiment Station, Montana State University, Bozeman, MT 59717-0002.

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References and Notes

1. E.A. Hockett, T.K. Blake, and A.F. Cook, Plant and Soil Sci. Dept., Montana State Univ., Bozeman, MT 59717-0002; G.R. Carlson, Northern Agric. Res. Ctr., Havre, MT 59501; G.D. Kushnak, Western Triangle Res. Ctr., Conrad, MT 59425; G.D. Jackson, Central Agric. Res. Ctr., Moccasin, MT 59462; J.L. Eckhoff, Eastern Agric. Res. Ctr., Sidney, MT 59270; V.R. Stewart, Northwestern Agric. Res. Ctr., Kalispell, MT 59901; G.F. Stallknecht, Southern Agric. Res. Ctr., Huntley, MT 59037; and M.P. Davis, Am. Malting Barley Assoc., Inc., 735 N. Water St., Milwaukee, WI 53202. Cooperative investigations of USDA-ARS and the Montana Agric. Exp. Stn. Journal article no. 2360 of the Montana Agric. Exp. Stn. Registration by CSSA. Accepted 31 July 1989. *Corresponding author.