Registration of 'Hoff' Wheat

'Hoff' G.P. 268611 (Reg. no. CV-91, PI 560128) is a hard red winter wheat (Triticum aestivum L.) cultivar developed by the Oregon Agricultural Experiment Station and released in February 1992. It is the progeny of a cross between 'Probsttorfer-Extrem' and 'Tobari 66' made in 1981 at the International Maize and Wheat Improvement Center (CIMMYT) in Mexico by CIMMYT scientists. Segregating generations and yield trials were grown in Oregon. ORCR8313, the experimental designation for Hoff, was selected in the F₅ generation using a modified pedigree breeding system. Breeder seed was produced through head row selection. Hoff is a semidwarf, with white glumes, and is awned. The kernels are red, long, hard, and elliptical with a mid-sized germ and a mid-wide, shallow crease. The brush is small.

Grain yields of Hoff have been consistently higher than those of commercial hard red winter wheat cultivars currently grown in Oregon. In 28 yield trials over three environmentally diverse sites in Oregon, Hoff averaged 5362 kg ha⁻¹, compared with 2997 kg ha⁻¹ for 'Wanser' and 3746 kg ha⁻¹ for 'Batum'. Hoff ranked first in yield in all trials at all sites over years. Hoff is a one-gene semidwarf. Under irrigated or high rainfall conditions with high fertility, it tends to lodge. It is 5 d earlier than Wanser. Hoff is less winter hardy than Wanser and should not be grown where frequent winter injury is experienced.

Hoff has a higher level of resistance to foliar diseases than other commonly grown hard red winter wheat cultivars. It is moderately resistant to stripe rust (caused by Puccinia striformis Westend.) and mildew (caused by Erysiphe graminis DC. f. sp. tritici Ém. Marchal). It is moderately susceptible to leaf rust (caused by P. recondita Roberge ex Desmaz.), and septoria leaf blotch (caused by Septoria tritici Roberge in Desmaz.). Reactions to strawbreaker footrot [caused by Pseudocercosporella herpotrichoides (Fron) Deighton], and cephalosporium stripe (caused by Hymenula cerealis Ellis & Everh.; syn. Cephalosporium gramineum Nisikado & Ikata in Nisikado et al.), are similar to those of Stephens. Hoff is susceptible to most races of common and dwarf bunt [caused by Tilletia caries (DC.) Tul. & C. Tul., syn. T. tritici (Bjerk.) G. Wint. in Rabenh.; T. laevis Kühn in Rabenh.; and T. controversa Kühn in Rabenh.]; therefore, seed should be treated with a bunt-controlling fungicide to avoid problems with these diseases.

The USDA-ARS Western Wheat Quality Laboratory has rated Hoff as satisfactory for hard red wheat milling and baking properties. It has higher test weight, flour yield, mill score, kernel hardness, water absorption and corrected loaf volume than Batum or Wanser. Hoff does require a slightly longer mixing time than Wanser.

Breeder and foundation seed of Hoff is maintained by the Foundation Seed Project under the auspices of the Crop and Soil Science Department, Oregon Agricultural Experiment Station, Oregon State University, Corvallis, Oregon 97331-3002.

Registration of 'Gene' Wheat

'Gene' (Reg. no. CV-792, PI 560129) is a soft white winter wheat (Triticum aestivum L.) cultivar developed by the Oregon Agricultural Experiment Station and released in January 1992. It is an F₄-derived selection from the three-way cross Cleo//Zenzontli made in 1982. Gene is a semidwarf wheat with white grain and short straw. It is awned, fusiform, mid-dense, and non-glabrous, white, short to mid-long, shoulders mid-long, beaks narrow, acute, and 2 to 3 mm. The kernels are mid-long, soft, ovate with a small to mid-sized germ, and a mid-wide, deep crease. The brush is small.

Gene is widely adapted to most wheat growing areas in Oregon. In five years of yield trials, it averaged 8137 kg ha⁻¹, compared with 7846 kg ha⁻¹ for 'Wanser' and 8054 kg ha⁻¹ for 'Batum'. Gene is resistant to prevalent northwestern U.S. biotypes of stripe rust (caused by Puccinia striformis Westend. f. sp. tritici Ém. Marchal) and leaf rust (caused by P. recondita Roberge ex Desmaz.), and most races of common and dwarf bunt [caused by Tilletia caries (DC.) Tul. & C. Tul., syn. T. tritici (Bjerk.) G. Wint. in Rabenh.; T. laevis Kühn in Rabenh.; and T. controversa Kühn in Rabenh.].

Gene is satisfactorily to very satisfactory for winter wheat quality traits. Gene is similar to Stephens for most quality traits. It exceeds commercial club wheat cultivars (e.g., 'Stephens', 'Madsen') in yield, test weight, flour yield, mill score, loaf volume and corrected loaf volume; and is awned, fusiform, mid-dense, and non-glabrous, white, short to mid-long, shoulders mid-long, beaks narrow, acute, and 2 to 3 mm. The kernels are mid-long, soft, ovate with a small to mid-sized germ, and a mid-wide, deep crease. The brush is small.

Gene is resistant to prevalent northwestern U.S. biotypes of stripe rust (caused by Puccinia striformis Westend. f. sp. tritici Ém. Marchal) and green stripe rust (caused by P. graminea Berk., in Berk. & Broome); flag smut [caused by Urocystis agropyri (G. Pichon//Zenzontli made in 1982. Gene is a semidwarf wheat with white grain and short straw. It is awned, fusiform, mid-dense, and non-glabrous, white, short to mid-long, shoulders mid-long, beaks narrow, acute, and 2 to 3 mm. The kernels are mid-long, soft, ovate with a small to mid-sized germ, and a mid-wide, deep crease. The brush is small.

Gene has a higher level of resistance to foliar diseases than other commonly grown hard red winter wheat cultivars. It is moderately resistant to stripe rust (caused by Puccinia striformis Westend.) and mildew (caused by Erysiphe graminis DC. f. sp. tritici Ém. Marchal). It is moderately susceptible to leaf rust (caused by P. recondita Roberge ex Desmaz.), and septoria leaf blotch (caused by Septoria tritici Roberge in Desmaz.). Reactions to strawbreaker footrot [caused by Pseudocercosporella herpotrichoides (Fron) Deighton], and cephalosporium stripe (caused by Hymenula cerealis Ellis & Everh.; syn. Cephalosporium gramineum Nisikado & Ikata in Nisikado et al.), are similar to those of Stephens. Hoff is susceptible to most races of common and dwarf bunt [caused by Tilletia caries (DC.) Tul. & C. Tul., syn. T. tritici (Bjerk.) G. Wint. in Rabenh.; T. laevis Kühn in Rabenh.; and T. controversa Kühn in Rabenh.]; therefore, seed should be treated with a bunt-controlling fungicide to avoid problems with these diseases.

The USDA-ARS Western Wheat Quality Laboratory has rated Hoff as satisfactory for hard red wheat milling and baking properties. It has higher test weight, flour yield, mill score, kernel hardness, water absorption and corrected loaf volume than Batum or Wanser. Hoff does require a slightly longer mixing time than Wanser.

Breeder and foundation seed of Hoff is maintained by the Foundation Seed Project under the auspices of the Crop and Soil Science Department, Oregon Agricultural Experiment Station, Oregon State University, Corvallis, Oregon 97331-3002.

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