

Registration of 'Garland' Wheat

'Garland' (Reg. no. CV- ,PI583291) is a hard red winter wheat (*Triticum aestivum* L.) developed by the Utah Agricultural Experiment Station (UAES) and released in 1993. Garland, tested under the designation UT1706-1, was released to provide superior yield and test weight under irrigated management where mildew (caused by *Erisiphe graminis* DC. f. sp. *tritici* E.M. Marchal) can be severe. Garland was derived from the cross 'Favorite'/5/'Cirpiz'/4/'Jang Kwang'/'Atlas 66'/6/'Comanche'/3/'Velvet'/9/'Cardon' /8/'Bannock' /7/'Columbia'/6/'Delmar'/5/'Hussar'/'Turkey Red'/'Ridit'/3/'Oro'/'Ridit' /4/'Norin 10'/'Brevor'.

The F₂ through F₅ generations were grown as bulks with selection for agronomic types and resistance to powdery mildew, common bunt (caused by *Tilletia tritici* (Bjerk.) Wint. in Rabenh) and dwarf bunt (caused by *Tilletia controversa* Kühn in Rabenh). Individual heads from desirable F₅ plants were selected and planted as head rows in a nursery at the Greenville Experimental Farm, Logan, UT. The resulting agronomically desirable F₅-derived lines, resistant to dwarf bunt, were evaluated for yield and other agronomic traits in a preliminary unreplicated nursery at Logan and in the dwarf bunt nursery at Logan in 1987. A sample from this preliminary nursery and samples from yield nurseries from 1988 through 1990 were sent to Pillsbury Mills in Ogden, UT for milling and baking analysis.

UT1706-1 was evaluated in the state advanced irrigated yield nursery from 1988 to 1993. In 1990, 200 heads were selected from F_{5:10} plants and grown as head rows. After roguing off-type and non-uniform rows, the remaining 180 F₁₀-derived lines were harvested and bulked as breeder seed.

Garland is an awned, semidwarf wheat. The coleoptile is white, and juvenile growth is semi-erect. Garland is about 12 cm shorter than 'Nugaines' and 1.5 cm shorter than 'Ute'. Garland has the same heading date as Ute. The chaff is tan at maturity compared to the bronze chaff of Ute. Internodes of Garland are hollow and the flag leaf is recurved. Plants are green at the boot growth stage. The head is

dense with glumes of short length and wide width. The seed is ovate with medium length brush and a narrow, medium deep seed crease.

Breadmaking quality was evaluated by the USDA/ARS Western Wheat Quality Laboratory in Pullman, WA from 1991 to 1994. Milling and breadmaking characteristics of Garland are acceptable, although late applications of nitrogen are required for good bread quality in high yielding conditions associated with irrigated production. Garland is moderately resistant to dwarf bunt with up to 8% bunted heads under severe disease conditions. Five-year average yields in Utah for production under irrigation are 9660 kg ha⁻¹ for Garland compared to 6950 kg ha⁻¹ for Ute. Garland is 12 to 25 kg m⁻³ heavier than Ute. One of the complaints about Ute has been light volume weight.

Garland has been protected under the Plant Variety Protection Act (PVP# 9400178). Breeder seed of Garland will be maintained by the Utah Agricultural Experiment Station, Logan, UT 84322-4820.

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References and Notes

1. Dept. of Plants, Soils, and Biometeorology, Utah State University, Logan, UT 84322-4820. Contribution of the Utah Agric. Exp. Stn., Journal Paper No. 4718. Registration by CSSA Accepted 31 Aug. 1995. *Corresponding author (Email: dhole@mendel.usu.edu)

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