REGISTRATION OF CULTIVARS

Registration of 'Scarlet' Wheat

'Scarlet' hard red spring wheat (Triticum aestivum L.) (Reg. no. CV-869, PI 601814) was developed by the Agricultural Research Center of Washington State University in cooperation with the Agricultural Experiment Stations of the University of Idaho and Oregon State University, and the USDA-ARS. Scarlet was jointly released by the Washington Agricultural Research Center, the Oregon Agricultural Experiment Station, and the USDA-ARS. Scarlet was released as a replacement for 'Butte 86' in the semiarid, non-irrigated wheat production regions of Washington state, based on its high grain yield and superior end-use quality.

Scarlet, tested under the experimental designations WA7802 and K9200106, is an F₄½ head-row selection derived from the cross HF820049/WA007301/‘Tecumseh’/K8405055. Line HF820049/ WA007301 is ‘Tifton 3725’/‘Walladay’/3/‘Fielder’/‘Bronz’/ ‘Koeltz-7941 S.5’/5/‘Henry’/‘Karn 90, S.90’/‘Burt’/Onas 52/3/ ‘Lemhi 66’/4/‘Yaktana 54A’*4/‘Norin 10’/‘Brevor 14/6/Tifton 3725/Walladay/3/Fielder/Bronz/Koeltz-7941 S.5. Line K8405055 is Tifton 3725/Walladay/4/‘Bezostaja-1’/14x53-101’/‘Burt’#4/3/ Burt/Kenya Farmer 70136’. The following modified pedigree-bulk breeding method was used to advance early generation progeny. Bulked seed (30 g) from several F₂ plants, was used to establish an F₃ field plot. Approximately 100 heads were selected at random from individual F₂ plants, and a 40-g subsample of seed was used to establish a single F₃ plot. Seed from the F₃ plot was bulk harvested, and a 60-g subsample was used to establish an F₄ field plot.

Single heads from 150 F₄ plants were threshed individually to establish F₅ head-row families. Following selection for grain appearance, plant height, and general adaptation, seed from 30 to 50 plants within each selected head row was bulk harvested to obtain F₄½ seed for grain yield assessment. F₂, F₃, F₄, and F₅ progeny were advanced in field nurseries in Pullman, WA; F₃ progeny were advanced at the Lind Dryland Experiment Station in Lind, WA.

Scarlet is a tall, single-gene semidwarf with lax, fusiform heads that have white awns and midseason maturity. It has white glumed spikes, with midlong to long kernels that are red, hard, and ovate. Seed of Scarlet has a midsize germ, with a midwide, middeep crease, rounded cheeks, and a midsize, midlong brush. Among the major pests of spring wheat in the Pacific Northwest of the USA, Scarlet has non-race-specific, moderate high-temperature, adult plant resistance to races of stripe rust (caused by Puccinia striiformis Westend.) common in North America, and also has adult resistance to Russian wheat aphid (Diuraphis noxia Mordvilko), and 'Westbred 926' (3763 kg ha⁻¹), which was 6.5 to 13.0 g L⁻¹ depending on location. Grain volume weight of Scarlet averaged equal or exceed those of other hard red spring wheat entries in 1992 to 1997, Scarlet had a higher average milling score (84) and loaf volume average (981 cm³) than Butte 86 (80 and 932 cm³), respectively when the end-use quality of grain samples in the target production region were compared.

Seed of Scarlet will be maintained by the Western Crop Improvement Association under supervision of the Crop and Soil Sciences and the Washington Agricultural Research Center, and may be obtained by correspondence to the author or through the National Plant Germplasm System.