Registration of ‘Vanguard’ Wheat

‘Vanguard’ hard red winter wheat (*Triticum aestivum* L.) (Reg. no. CV-850, PI 593891), a cultivar with tolerance to feeding and cutting damage caused by wheat stem sawfly (*Cephus cinctus* Norton), was developed and released by the Montana Agricultural Experiment Station in 1995.

Vanguard resulted from an F₅ headrow selected and bulked in 1990 from the cross ‘Lew’/‘Tiber’/‘Redwin’. ‘Lew’, a solid-stemmed spring wheat, is the source of sawfly resistance (1). Vanguard was evaluated as MTSF2238 in Montana Preliminary, Intra-state, and Off-Station yield nurseries from 1991 through 1995 and in the Northern Regional Winter Wheat Performance Nursery in 1995. Vanguard was released to Montana producers as an emergency measure to reduce losses to wheat stem sawfly, which have been severe in areas of central and north-central Montana since the mid-1980s. Vanguard is the first sawfly-tolerant winter wheat cultivar released since ‘Rego’ and ‘Sawmont’ in 1957 and 1965, respectively (2, 3).

Vanguard has white straw and chaff with awned spikes that are inclined to nodding at maturity. Kernels are hard, red, long, and elliptical, with a midsized germ and a short brush. Kernel cheeks are rounded, with a wide, straight, deep crease. Coleoptile length of Vanguard is long, averaging about 10 mm longer than ‘Rocky’ and ‘Neeley’ in a replicated growth chamber evaluation (dark) at 20°C for 12 d. Vanguard has shown tolerance to wheat streak mosaic virus under field conditions but was susceptible to both the virus (mechanical inoculation) and its vector, the wheat curl mite (*Eriophyes tulipae* Keifer) in a growth chamber evaluations. Vanguard is also susceptible to prevalent races of stem rust (caused by *Puccinia graminis* Pers.:Pers.), leaf rust (caused by *P. recondita* Roberge ex Desmaz.), stripe rust (caused by *P. striiformis* Westend.), dwarf bunt (caused by *Tilletia controversa* Kühn in Rabenh.), and Russian wheat aphid (*Diuraphis noxia* (Mordvilko)).

Vanguard is medium in maturity, heading about 1 d later than Rocky, but 3 to 4 d earlier than Neeley. Vanguard is similar in height to ‘Judith’ and Neeley (88 cm, 54 environments), with a tendency to lodge, particularly in high-yield environments. Vanguard has marginal winterhardiness for dependable production in Montana, having similar or slightly lower winterhardiness than Neeley and Rocky. Although Vanguard expresses a high degree of stem solidity over variable environmental conditions, levels of larval infestation by wheat stem sawfly in Vanguard are often as high as in hollow-stemmed cultivars. Vanguard is tolerant to feeding and cutting damage of wheat stem sawfly, based on limited yield testing under moderate to heavy sawfly infestations and field-scale observation of resistance to sawfly cutting under heavy sawfly infestations. Grain yield of Vanguard is medium to low in the absence of wheat stem sawfly, but equivalent or superior to most hollow-stemmed cultivars under moderate to heavy sawfly infestations. From 1992 to 1995 (54 location-years), grain yield of Vanguard (3689 kg ha⁻¹) was 19, 16, 13, and 5% lower than predominant cultivars, Neeley, Judith, Rocky, and Redwin, respectively. Grain volume weight of Vanguard (763 kg m⁻³) is similar to"

Registration of ‘Ultra’ Hop

Ultra (Reg. no. CV-24, PI 593893), a mild-flavored aroma hop (*Humulus lupulus* L.) cultivar, originates from Selection no. 8305 made in 1983 at Corvallis, OR, between the polyploid ‘Hallertauer mittelfrüh’ (USDA Accession no. 21397) and the diploid ‘Saazer’-derived male genotype USDA 21237M. Ultra, a female triploid (2n = 3x = 30) genotype, is assigned in 1985. Ultra was first tested as Selection no. 8305-17, and the permanent USDA hop Accession was assigned in 1985.

Initial nursery tests near Corvallis, OR, indicated potential, alpha acid content between 4 and 5%, beta acid between 4 and 5%, and a cohumulone content of about 22% (1). In the Yakima Valley near Mabton and Prosser, WA, Ultra had high yield potential, but dried cones averaged about 1% less beta acid than those from Oregon tests.