Registration of 'Rampart' Wheat

Rampart, a hard red winter wheat (*Triticum aestivum* L.) cultivar (Reg. no. CV-845, PI 593889) with tolerance to damage caused by wheat stem sawfly (*Cephus cinctus* Norton), was developed and released by the Montana Agricultural Experiment Station in 1996. Rampart resulted from an F5 selection from the cross 'Lew'/'Tiber'/'Redwin'. Lew is the source of sawfly resistance (1). Rampart was evaluated as MTS92042 in Montana Preliminary, Intrasate, and Off-Station yield nurseries from 1992 to 1996 and in the Northern Regional Winter Wheat Performance Nursery in 1996. Following selection for stem solidness and uniformity in F7 headrows and F8 linerows during 1993 and 1994, 103 linerows were bulked as breeder seed. Rampart will supplement and/or replace 'Vanguard' (2), a sib selection which is currently the only other sawfly-tolerant winter wheat available for Montana producers.

Rampart is a bronze-chaffed cultivar with awned spikes. Kernels are hard, red, and long, with a sloped back, a midsized germ, and a heavy brush. Kernel cheeks are rounded to angular, with an open crease. Coleoptile length of Rampart is very long, averaging 10 to 20 mm longer than the conventional-height cultivars Vanguard, Rocky, and Neeley in replicated growth chamber evaluation (dark) at 20°C for 12 d. Rampart has some field tolerance to wheat streak mosaic virus (WSMV) or its vector, wheat curl mite (*Aceria tosichella* Keifer), in Montana. Rampart is resistant to prevalent races of stem rust (caused by *Puccinia graminis* Pers.:Pers.) but susceptible to leaf rust (caused by *P. recondita* Roberge ex Desmaz.), stripe rust (caused by *P. striformis* Westend.), dwarf bunt (caused by *Tilletia controversa* Kühn in Rabenh.), and Russian wheat aphid (*Diuraphis noxia* Mordvilko).

Rampart is medium in maturity, heading about 1 d later than Rocky and 'Judith' but 2 to 3 d earlier than Neeley. Rampart is similar in height to Judith, Neeley, and Vanguard (86 cm, 36 environments), with a tendency to lodge, particularly in high-yield environments. Winterhardiness of Rampart is similar to Vanguard, Rocky, and 'Centurk'. Rampart expresses high levels of stem solidness in most environments, and like other solid-stemmed genotypes, shows lower levels of larval infestation, reduced feeding damage, and less head weight reduction than hollow-stemmed genotypes (3). Additionally, stem solidness reduces the numbers of larvae which cut stems and reach a successful overwintering position (3). Rampart 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 Rampart is slightly lower than the best hollow-stemmed cultivars in the absence of wheat stem sawfly, but equivalent or superior to most hollow-stemmed cultivars under moderate to heavy sawfly infestations. From 1993 to 1996 (36 location-years), grain yield of Rampart (3931 kg ha⁻¹) was 7.5, and 2% lower than predominant cultivars, Neeley, Judith, and Rocky, respectively, and 5 and 11% higher than Redwin and Vanguard, respectively. Grain volume weight of Rampart (768 kg m⁻³) is similar to that of Rocky, and 'Centurk'.

Registration of 'Erhardt' Wheat

'Erhardt' hard red winter wheat (*Triticum aestivum* L.) (Reg. no. CV-846, PI 564761) was developed and released by the Montana Agricultural Experiment Station in 1996. Erhardt is an F₄ selection from the cross, TX55-391-56-D8/MT6928. MT6928 is a high-yielding semidwarf cultivar, with a wide heading dates range and a medium stature, adapted to Montana. TX55-391-56-D8 is a sib selection from the cross, TX55-391-56-D8/'Westmont'. The pedigree of TX55-391-56-D8 is 'Sinvaloch'/Wichita/3/'Hope'/4/7. The 'Cheyenne'/3/Wichita/4/'SeuSeun 27'. Erhardt was evaluated as 'Erhardt' hard red winter wheat (*Triticum aestivum* L.) (Reg. no. CV-846, PI 564761) was developed and released by the Montana Agricultural Experiment Station in 1996. Erhardt is named in honor of Erhardt R. Hehn, former winter wheat breeder and Head, Plant & Soil Science Dep., Montana State University. Erhardt is adapted to areas of Montana where a moderate to high winterhardiness are required, combined with improved yield potential and reduced height. Erhardt is tolerant to prevalent races of stem rust (caused by *Puccinia graminis* Pers.:Pers.), stripe rust (caused by *P. striiformis* Westend.), dwarf bunt (caused by *Tilletia controversa* Kühn in Rabenh.), and Russian wheat aphid (*Diuraphis noxia* Mordvilko).

Erhardt is medium in maturity, heading about 1 d later than Rocky and 'Judith' but 2 to 3 d earlier than Neeley. Erhardt is similar in height to Judith, Neeley, and Vanguard (86 cm, 36 environments), with a tendency to lodge, particularly in high-yield environments. Winterhardiness of Erhardt is similar to Vanguard, Rocky, and 'Centurk'. Erhardt expresses high levels of stem solidness in most environments, and like other solid-stemmed genotypes, shows lower levels of larval infestation, reduced feeding damage, and less head weight reduction than hollow-stemmed genotypes (3). Additionally, stem solidness reduces the numbers of larvae which cut stems and reach a successful overwintering position (3). Erhardt 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 Erhardt is slightly lower than the best hollow-stemmed cultivars in the absence of wheat stem sawfly, but equivalent or superior to most hollow-stemmed cultivars under moderate to heavy sawfly infestations. From 1993 to 1996 (36 location-years), grain yield of Erhardt (3931 kg ha⁻¹) was 7.5, and 2% lower than predominant cultivars, Neeley, Judith, and Rocky, respectively, and 5 and 11% higher than Redwin and Vanguard, respectively. Grain volume weight of Erhardt (768 kg m⁻³) is similar to that of Rocky, and 'Centurk'.