Registration of ‘Windham’ Winter Feed Pea

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‘Windham’ (Reg. No. CV-27, PI 647868) is a winter feed pea (Pisum sativum L.) developed by the USDA-ARS in cooperation with the Washington Agricultural Research Center, Pullman, WA, the Idaho Agricultural Experiment Station, Moscow, ID, and Central Agricultural Research Center, Montana State University, Moccasin, MT. Windham was approved for release at the spring 2006 meetings of the Washington State University Legume Variety Release Committee and the Montana State University Variety Release Committee. It was released based on superior agronomic adaptation, winter hardiness, and tolerance to harsh winter conditions. Fall-sown peas have higher yield potential, improved efficiency of field operations, and rotational and agronomic benefits in the farming system.

Windham originated as an F₆ selection from the cross CAH-61/D258-1-3/2/CAH-61/B686-320-0/3/D258-1-2 made in 1993 by F.J. Muehlbauer. CAH-61 is a winter-hardy green cotyledon pea with a dwarf growth habit and tendrilled leaf morphology conferred by the afila gene, af. D258-1-3 is a winter-hardy breeding line derived from the cross D19-1-3/Glacier with a dwarf plant habit conferred by the le gene and conventional leaf morphology. B686-320-0 is a multivirus resistant line (Provvidenti et al., 1991) that blooms at the 9th to 10th node, has a dwarf plant habit (le), and bears two white flowers per peduncle. Additionally, it has the dominant I gene for yellow cotyledons and the recessive r gene for wrinkled seeds. D258-1-2 is a sister line to D258-1-3, having the same phenotypic characters.

Windham has a dwarf growth habit and recessive af for tendrilled leaf morphology, resulting in an upright canopy through harvest, improving harvest ease and seed quality (Fig. 1). The improved agronomic performance and canopy structure give Windham an advantage to ‘Specter’ (McPhee and Muehlbauer, 2007) in many production systems. Vine length and the internodes appear in a zigzag manner, branches are typically formed in the fall as a short rosette before entering a winter dormant period. Normal, moderately marbled. Flowering begins at the 18th node. Flowers are white, conferred by recessive a, and usually borne doubly on the peduncles with three flowers per peduncle observed occasionally. Pods are straight, blunt-ended, and medium green to six seeds. Seeds are smooth and round with yellow cotyledons. The testa is clear but is characterized by subtle mottling, referred to as “ghost mottling,” resulting from the presence of M in the presence of recessive a. Weight of 100 seeds averages 15.0 g. Presence of the subtle mottling and the small seed size make this cultivar undesirable in many edible pea markets for human consumption; however, the relatively small seed size and high yields make it an ideal pea for animal feed. Windham is resistant to race 1 of Fusarium wilt (caused by Fusarium oxysporum Schlecht. emend. Snyd. & Hans. f. sp. pisi) but is susceptible to pea enation mosaic virus and powdery mildew (caused by Erysiphe pisi DC).

Windham was tested at 29 site-years over 8 yr in eastern Washington, northern Idaho, Oregon, central Montana, North Dakota, South Dakota, and Wyoming, where average seed yield was 2367 kg ha⁻¹. Windham yielded 2491 kg ha⁻¹ compared with 2270 kg ha⁻¹ for Specter. Windham produced superior yield to Specter in 19 out of 29 head-to-head trials and exceeded the trial mean in 26 of these trials. Yields for Windham ranged from a low of 343 kg ha⁻¹.

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