Registration of ‘Shawnee’ Yellow Dry Pea

‘Shawnee’ (Reg. no. CV-17, PI 619079) is a large-seeded, yellow-cotyledon dry pea (Pisum sativum L.) developed by the USDA-ARS in cooperation with the Washington Agricultural Research Center (Pullman, WA) and the Idaho Agricultural Experiment Station (Moscow, ID) and released in 1997. Shawnee has large seed size, bright yellow seed color, and resistance to powdery mildew caused by Erysiphe polygoni DC.

Shawnee originated as an F₅ selection (PS010603) from a cross (X78127//WV341F/WA110-42) made in 1984. X78127 is a backcross derivative of ‘Latah’ that was developed for resistance to Pea seed-borne mosaic virus (Muehlbauer, 1983). WV341F is a breeding line donated by Ardie Gustafson of the former Western Valley Seed Company of Moscow, ID, that was used as a source of resistance to powdery mildew and Pea enation mosaic virus (PEMV). WA110-42 was selected from PI 244251 for dwarf plant habit, exceptionally large yellow seeds, and relatively high seed yields. The cross and subsequent selection was made to combine large seed size, good color qualities, and resistance to powdery mildew and PEMV with improved seed yields.

The F₅ selection (PS010603) that led to Shawnee was grown as a single plant row in 1990 along with other single plant selections made from the same bulk population. Preliminary trials were conducted at Pullman, WA, in 1991 and 1992. On the basis of performance in preliminary trials, PS010603 was entered in advanced yield trials from 1993 to 1996 at three locations each year in the Palouse region of eastern Washington and northern Idaho. When compared with Latah, the predominant cultivar in the region, Shawnee averaged 6% higher seed yields from 1993 to 1996. Shawnee had similar yields when compared with ‘Umatilla’ (Muehlbauer, 1987). Shawnee was resistant to Fusarium wilt (caused by Fusarium oxysporum f. sp. pisi) race 1 in the wilt screening nursery at Pullman. The selection was tolerant to PEMV and root rot caused by P. graminis f. sp. pisi.

Shawnee matured in 104 d, which was a similar maturity to both Latah and Umatilla. Shawnee has uniform large and round seeds (100 seeds weigh an average of 22.3 g, compared with 17.6 g for Latah and 21.2 g for Umatilla). The seed have yellow cotyledons and the seed coats are clear. The seed size of Shawnee is desired by markets in the United States internationally. Cooking quality tests from 1994 indicated that cooking time for Shawnee was 22.0 mins with 21.6 mins for Latah and Umatilla.

Plant variety protection will not be sought for Shawnee. Breeder and Foundation seed of Shawnee will be available by the Washington State Crop Improvement Association under the supervision of the Department of Crop Sciences, College of Agriculture Research Center, Washington State University; and the USDA-ARS, Pullman, WA 99164-6434. Small quantities of seed of Shawnee for research purposes may be obtained from the corresponding author for at least 5 yr. Recipients of seed are asked to make appropriate recognition of the source of Shawnee if it is used in the development of a new cultivar, germplasm, parent or genetic stock.

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References


USDA-ARS, 303 Johnson Hall, Washington State University, Pullman, WA 99164-6434. Contribution from USDA-ARS in cooperation with the College of Agriculture and Home Economics, Washington State University; and the USDA-ARS, Pullman, WA 99164. Published January, 2002. Accepted 30 June 2001. *Corresponding author (muehlbau@ags.tamu.edu)