Registration of ‘Dennison’ Soybean


Soybean cultivar Dennison [Glycine max (L.) Merr.] (Reg. No. CV-493, PI 647087) was developed by the Ohio Agricultural Research and Development Center of The Ohio State University (OARDC-OSU). It was released on 1 August 2006 because of its high seed yield in Ohio and its resistance to Phytophthora root and stem rot [caused by Phytophthora sojae (M. J. Kaufmann and J. W. Gerdemann)]. The name was chosen to recognize the late David T. Dennison, who served as manager of the Ohio State University Agronomy Farm and as chief inspector for the Ohio Seed Improvement Association.

The cultivar Dennison (previously designated HS1-3717) derived from an F1 plant of the cross ‘Athow’ (Wilcox and Abney, 1997) × HS94-4533. The parent line HS94-4533 is from the same F2 plant as ‘Kottman’ (St. Martin et al., 2001). The cross was made in the summer of 1997 at Columbus, OH, and subsequent development was by early generation testing. The F2-derived progenitor line, HS99-5217, was tested in Ohio from 1999 to 2001. The F4 selection designated HS1-3717 was tested in multiple Ohio locations from 2002 to 2006. It was also tested regionally in the USDA Uniform Preliminary Test III in 2004 (Abney and Crochet, 2004).

The cultivar has indeterminate stem habit, white flowers, light tawny pubescence, tan pods, and yellow seeds with a black hilum. It is classified in maturity group III (relative maturity 3.5), and is adapted as a full-season cultivar from 40 to 42° N lat. In Ohio tests (2003 to 2005, four or five locations per year), mean seed yield of Dennison was 4553 kg/ha, compared with 4358 kg/ha for Kottman, the most widely grown public cultivar in Ohio.

The approximate LSD (P = 0.30) for the tests was 148 kg/ha. Dennison matured 2 d earlier than Kottman, and was 5 cm taller and slightly less resistant to lodging.

In Ohio, seed of Dennison has averaged 405 g kg–1 protein, compared with 415 g kg–1 for Kottman. Oil content has averaged 200 g kg–1, compared with 201 g kg–1 for Kottman.

Dennison and control lines carrying known resistance genes were inoculated with isolates of P. sojae differing in compatibility on hosts carrying Rps1k and Rps3. Results showed that Dennison carries both the Rps1k and Rps3 genes for race-specific resistance to Phytophthora root and stem rot. Partial resistance to P. sojae is excellent, with a score of 3.5 on a scale of 1 (best) to 9 (worst), using the procedure of Schmitthenner and Bhat (1994); this score was not significantly different from the score (3.8) of the standard resistant cultivar Conrad (LSD = 0.5 at P = 0.30).

Breeder seed of Dennison was distributed to Ohio Foundation Seeds, Inc. for production of Foundation seed in 2006. A small sample of seeds for research purposes can be obtained from the corresponding author. Recipients of seeds are asked to acknowledge the source of germplasm if it is used in the development of new germplasm, cultivars, or genetic stocks. U.S. Plant Variety Protection for Dennison will not be sought.

References


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