Regulation of 'Defiance' Soybean

'Defiance' soybean [Glycine max (L.) Merr.] (Reg. no. CV-364, PI 596407) was developed by the Ohio Agricultural Research and Development Center of The Ohio State University (OARDC-OSU). It was released on 1 Aug, 1996 because of its high yield potential and resistance to phytophthora rot (caused by Phytophthora sojae M.J. Kaufmann & J.W. Gerdemann).

Defiance is an F4-derived line, originally designated HS91-4523, from the cross HM8778 × 'A3733'. The parent HM8778 is from 'Zane' × HW79149 (7,8). The male parent, A3733, was developed by Asgrow Seed Co. from the cross 'Elf' × 'A3127' (2). A3127 is from 'William' × 'Essex' (1,6). The cross from which Defiance was derived was made in the summer of 1988 at Columbus, OH. Defiance was developed by early-generation testing. The F2-derived line, HS89-5342, was tested in Ohio from 1989 to 1991. Defiance, which derived from an F4 plant of HS89-5342, was tested in multiple Ohio locations from 1992 to 1996 (5). As HS91-4523, Defiance was evaluated regionally in Uniform Preliminary Test IIIA in 1993 and in Uniform Test III in 1994 and 1995 (9).

Defiance has indeterminate stem habit, purple flowers, gray pubescence, brown pods, and dull yellow seedcoats with imperfect black hila. Seedcoat peroxidase activity is low. Defiance is in Maturity Group III (relative maturity 3.3), and is adapted as a full-season cultivar from 40° to 42° N lat. In Ohio tests (1993 to 1996) (5), seed yield of Defiance was 5% greater than that of 'Resnik' (3). Defiance was 6 cm taller than Resnik, but had similar lodging resistance. In comparison with Resnik, seed protein content of Defiance was 9 g kg⁻¹ less, but seed oil content was 3 g kg⁻¹ greater. In regional tests, Defiance yielded 1% less than 'Thorne' (4) and was 1.4 d earlier in maturity.

Defiance carries the Rps3 gene, derived from HW79149, for resistance to Races 1, 3, 4, and 25 of P. sojae, but not Race 7. Defiance is susceptible to brown stem rot (caused by Phialophora pachybasia) and Fusarium solani (Mart.) Sacc. death syndrome (SDS) (caused by Fusarium oxysporum var. phaseoli f. sp. sojae) (16).