Registration of ‘LD00–3309’ Soybean

LD00–3309 soybean [*Glycine max* (L.) Merr.] Reg. no. CV-480, PI 6397480] was developed by the Illinois Agricultural Experiment Station at the University of Illinois. It was released as a midgroup IV maturity cultivar because of its high yield, resistance to soybean cyst nematode (SCN; *Heterodera glycines* Ichinohe), and moderate resistance to sudden death syndrome (SDS) [caused by *Fusarium solani* (Mart.) Sacc.].

LD00–3309 originated as an F4 plant selection from the cross ‘Maverick’ × ‘Dwight’ made at the Illinois Agricultural Experiment Station in 1997 (Sleper et al., 1998; Nickell et al., 1998). The F1 generation was grown in the field in 1998 and the F2 and F3 generation plants were advanced by the single-pod bulk method in Puerto Rico during the winter of 1998–1999 (Brim, 1966; Fehr, 1987). The F4 generation plants were harvested at Urbana in 1999 and the F1-derived progeny rows were harvested in bulk in 2000. LD00–3309 was evaluated in replicated yield trials in Illinois during 2001 through 2004, in the Northern Region SCN Uniform Preliminary Group III Test in 2003 (Cary, 2003), and in both the Northern Region SCN Uniform Group IV Test and the USDA Uniform Soybean Group IV Test in 2004 (Crochet, 2004; Cary, 2004).

LD00–3309 is an indeterminate cultivar classified as having a midgroup IV maturity (relative maturity 4.5). Compared to the maturity group IV check ‘LN97–15076’ across 25 locations of the 2004 USDA and SCN group IV uniform tests, LD00–3309 matured 1 d later, yielded 13% more (4441 kg ha\(^{-1}\) vs. 3924 kg ha\(^{-1}\) ), was 8 cm shorter, lodged 0.4 units less, and had 29 mg seed\(^{-1}\) less seed weight (Diers et al., 2004). Across nine locations of these tests, LD00–3309 had 21 g kg\(^{-1}\) less seed protein (394 vs. 415 g kg\(^{-1}\)) and 4 g kg\(^{-1}\) greater seed oil (196 vs. 192 g kg\(^{-1}\)). Compared with ‘LS93–0375’, the SCN resistant check grown in the same tests, LD00–3309 matured the same day, yielded 6% more, was 2 cm shorter, had the same lodging, 30 mg seed\(^{-1}\) less seed weight, and 14 g kg\(^{-1}\) less seed protein and 6 g kg\(^{-1}\) greater seed oil (Schmidt and Klein, 2002). Compared with 'Macon' across 39 locations of the 2003–2004 USDA and SCN uniform tests, LD00–3309 matured 5 d later, yielded 14% more (4280 vs. 3742 g kg\(^{-1}\) ), was 2 cm taller, had 0.1 unit less lodging, and 37 mg seed\(^{-1}\) less seed weight (Nickell et al., 1996). Across 15 locations of these tests, LD00–3309 had 5 g kg\(^{-1}\) less seed protein (389 vs. 394 g kg\(^{-1}\)) and 3 g kg\(^{-1}\) less seed oil (200 vs. 203 g kg\(^{-1}\) ).

LD00–3309 has purple flowers, tawny pubescence, brown pod color at maturity, and dull yellow seeds with black hila. LD00–3309 is susceptible to Phytophthora rot (caused by *Phytophthora sojae* M.L. Kaufmann & J.W. Gerdemann), and resistance to Race 3 (HG Type 0) (Niblack et al., 2002) of SCN (Cary, 2003, 2004). LD00–3309 had moderate resistance to SDS. Across eight environments of field tests 2004, the disease index of LD00–3309 was 7, compared with 46 for ‘Spencer’, a susceptible check, and 3 for ‘LS94–3207’, a resistant check (Schmidt and Schmidt, 2004; Schmidt and Klein, 2004; Wilcox et al., 1989).

Seed of LD00–3309 will be maintained by the Illinois Agricultural Experiment Station at the University of Illinois, Urbana, IL 61801. A small seed sample of LD00–3309 may be obtained from the experiment station for research purposes, including development and commercialization of new cultivars, for at least 5 yr. It is requested that appropriate recognition be made if LD00–3309 contributes to the development of new cultivars, germplasm, parental lines, or genetic stocks. No application will be made for U.S. Plant Variety Protection for LD00–3309.

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References


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