Registration of ‘UA 4805’ Soybean

‘UA 4805’ soybean [ *Glycine max* (L.) Merr.] (Reg. no. CV-474, PI 639187) was developed by the Arkansas Agricultural Experiment Station. It was released as a late Maturity Group IV conventional cultivar in February 2005 because of its high yield potential, good standability, shattering resistance, and resistance to several important diseases in the mid-South. UA 4805 originated from an individual F2 plant selection from the cross ‘Hartz 5545’ × ‘KS 4895’ (Schapaugh and Dille, 1998). Hartz 5545 was derived from the cross H78–168 × ‘Narow’ (Caviness et al., 1985). The parents of H78–168 were D70–3115 × ‘Forrest’ (Hartwig and Epps, 1973). D70–3115 was derived from D64–4636 × ‘Lee’ (Johnson, 1958). D64–4636 was a selection from ‘Hill’ × D58–3311 (Johnson, 1960). The F2 and F3 populations from Hartz 5545 × KS 4895 were advanced to the F2 generation by the single pod bulk method in Fayetteville, AR (Fehr, 1991). The F2s line was selected in Keiser, AR, in 1998, and seeds were bulked as a pure line for subsequent yield trials. UA 4805 was tested as experimental line R98–1817 in a total of 20 Arkansas environments for agronomic performance and seed yield from 1999 to 2004, where it (3597 kg ha⁻¹) exceeded the seed yield of the check cultivar Manokin (3100 kg ha⁻¹) by 16.0% (Kenworthy, 1996). UA 4805 was also evaluated in the Arkansas state variety testing program in 12 environments from 2003 to 2004 (Dombek et al., 2003, 2004) where it averaged 7.6% higher in seed yield (3719 kg ha⁻¹) than Manokin (3457 kg ha⁻¹). In addition, in the USDA Southern Regional Preliminary Group IV-S Test in 2001 and in the USDA Southern Regional Uniform Group IV-S Test in 2002 and 2003 it (3349 kg ha⁻¹) averaged 6.9% higher in seed yield than Manokin (3134 kg ha⁻¹) in 45 environments (Paris, 2001, 2002, 2003). In a total of 77 full-season tests in southern states the average seed yield of UA 4805 (3470 kg ha⁻¹) was 9.3% greater than that of Manokin (3174 kg ha⁻¹). In a total of 32 full-season tests in Arkansas UA 4805 (3645 kg ha⁻¹) yielded 12.7% higher than Manokin (3235 kg ha⁻¹). It is widely adapted to the areas between 33 and 37° N latitude but appears best adapted to the Arkansas and Mississippi Delta region.

UA 4805 is a determinate cultivar with a relative maturity of 4.8, maturing 1 to 3 d earlier than Manokin. It has purple flowers, gray pubescence, and tan pod walls. Plant height of UA 4805 is similar to Manokin. Seeds of UA 4805 have yellow cotyledons with dull yellow seed coats and buff hila with seed size (11.4 g 100 seeds⁻¹) being slightly smaller than that of Manokin (12.2 g 100 seeds⁻¹). Lodging, shattering, and seed quality scores are slightly better than those of Manokin. Seed protein content (417 g kg⁻¹) of UA 4805 is 13 g kg⁻¹ higher than that of Manokin whereas oil content (195 g kg⁻¹) is 11 g kg⁻¹ lower than that of Manokin (Paris, 2001, 2002, 2003).

UA 4805 is resistant to southern stem canker [caused by *Diaephorina phaseolorum* (Cooke & Ellis) Sacc. f. sp. meridionalis Morgan-Jones], sudden death syndrome [caused by *Fusarium solani* (App. & Wollenw.) f. sp. glycines], and frogeye leaf spot (caused by *Cercospora sojina* Harms). It is moderately resistant to root knot nematode [*Meloidogyne arenaria* (Neal) Chitwood & *M. incognita* (Kofoid & White) Chitwood]. UA 4805 is susceptible to races 2, 3, and 14 of soybean cyst nematode (*Heterodera glycines* Ichinobe) and Soybean mosaic virus (*Paris*, 2001; 2002; 2003).

Foundation seed will be produced and distributed by the Arkansas Foundation Seed Program, Rice Research and Extension Center, 2900 Highway 130 East, Stuttgart, AR 72160. The Arkansas Agricultural Experiment Station will be responsible for maintenance of Breeder seed. Small quantities of UA 4805 seeds can be obtained for breeding and research purposes from the corresponding author for at least 5 yr from the date of this publication. Protection for UA 4805 under the U.S. Plant Variety Protection Act Title V will be sought.

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References


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