Registration of ‘Hull’ Peanut

D. W. Gorbet*

‘Hull’ peanut (Arachis hypogaea L. subsp. hypogaea var. hypogaea) (Reg. No. CV-98, PI 633048) cultivar was developed by the University of Florida Agricultural Experiment Station (FAES) and was approved for release in 2002. Hull is a medium-late maturity (approximately 145 d), runner market-type peanut cultivar with high-oleic (~80% C18:1) fatty acid oil chemistry in the seed. Hull has good resistance to spotted wilt caused by Tomato spotted wilt virus (TSWV), a Tospovirus. Tested experimentally as UF98326 (89xOL28-H01-7-4-1-2-b3-B), Hull originates from a 1989 three-way cross made at the North Florida Research and Education Center (NFREC), Marianna, FL, between the F1 ‘Southern Runner’ (Gorbet et al., 1987) and the FAES high-oleic breeding line F435-HO (Norden et al., 1987), used as the female parent, and pollinated with the FAES unreleased breeding line UF81206. UF81206 is a selection from PI203396 × F427B-3-1-7-4-B and has good to excellent multiple disease resistance to late leaf spot [Cercosporidium personatum (Berk. & M.A. Curtis) Deighton], stem rot (Sclerotium rolfsii Sacc.), rust (Puccinia arachidis Speg.), and TSWV (Gorbet and Shokes, 2002). The cross was made to provide material to select for high-oleic fatty acid oil chemistry with good pod and seed yields, good grades with medium to late maturity, and good multiple disease resistance. The main diseases selected for resistance were TSWV, late leaf spot, and stem rot or white mold (Gorbet, 2003). Hull originates from a single high-oleic seed from a F1 plant from the above-mentioned three-way cross.

Hull was developed from an individual plant pedigree selection program conducted at the Marianna NFREC under unsprayed (leaf spot) management with irrigation and good fertility. Single plant selections were made in unsprayed (for leaf spot control) field tests in the F2 to F6. Selection focused on runner market types and good yields, with resistance to TSWV and late leaf spot. Hull was first yield tested in F7 at Marianna in 1996 under unsprayed field conditions (Gorbet, 2003).

Plants of Hull have runner growth habit with somewhat elongated, similar in size, shape, and fertility. Hull has less vine growth than ‘C-99R’ (Gorbet and Shokes, 2002), which is currently the most widely grown leaf spot resistant cultivar in the southeastern USA. The seed of Hull is somewhat elongated, similar in size, shape, and color to those of C-99R. Seeds of Hull have a tan testa with a 100-seed weight of 7 ± 2 g, the same to slightly smaller than C-99R.

In 31 Florida field tests sprayed for leaf spot control, Hull had a pod yield advantage over C-99R (3399 vs. 3446 kg ha−1, respectively). Hull showed significantly less TSWV and better pod yields for Hull were statistically the same as for C-99R (5308 vs. 5169 ha kg−1, respectively). In 21 unsprayed field tests, the pod yields for Hull were essentially the same in resistance to TSWV (3399 vs. 3446 kg ha−1, respectively). Hull has normal seed oil chemistry (~80 vs. 59%, C18:1). Also, C-99R has normal seed oil chemistry (~80 vs. 59%, C18:1). Hull did not blanch quite as well as C-99R in 1999–2001 Florida samples, with a whole-seed blanch of 76 vs. 85%, partial blanch of 4.3 vs. 2.0%, and not blanched of 4.7 vs. 5.5%, and not blanched of 4.3 vs. 2.0%.

Hull showed significantly less TSWV and better pod yield advantage over C-99R and C-99R vs. 4322 and 3789 kg ha−1, respectively), but essentially the same as for C-99R (3.2 vs. 3.0), based on a scale of 1 to 10 scale, with 1 = no disease. In sprayed leaf spot field tests, Hull performed essentially the same as for C-99R.

The major differences between Hull and C-99R are the oil chemistry and vine growth traits. Hull has normal seed oil chemistry (~80 vs. 59%, C18:1). C-99R tends to have somewhat higher seed oil content, with a whole-seed blanch of 76 vs. 85%, partial blanch of 4.3 vs. 2.0%, and not blanched of 4.3 vs. 2.0%, and not blanched of 4.3 vs. 2.0%.

Hull and C-99R both contain about 3% sugar and 26 to 27% protein, with flavor ratings of about 5.0, which is good for late maturity. Hull has high-oleic (~80% C18:1) fatty acid oil chemistry in the seed.