Published May, 1990

PI 534504, CI 16571 (GP-117), Betzes hooded semi-dwarf and PI 534505, CI 16572 (GP-118), Betzes awned derived semi-dwarf; PI 534506, CI 16573 (GP-119), 'Compana' hooded and PI 534507, CI 16574 (GP-120), Compana awned derived; and PI 534508 (GP-121), CI 2220 awned and PI 534509 (GP-122), CI 2220 hooded derived. The Betzes hooded isoline CI 16569 has been released as 'Haybet' (1). The designation *awned derived* for CI 16570 and CI 16574 indicates that these genotypes (*kk*) were selected from the last backcross generation at the same time the *hooded* (*KK*) genotypes were selected for release, and provide a measure of how similar the background genotype is to the recurrent parent. The *hooded derived* isolines were obtained in a similar manner, except that the *KK* genotypes were selected in the last backcross generation of crosses designed to develop awned isolines in a hooded cultivar background.

The first two pairs of isolines were developed by crossing 'Strip Tease', CI 6837 (1), in 1960, as a male parent to the recurrent parent Betzes, CI 6398 (3), and retaining the hooded, but not the split palea, phenotype in subsequent backcrosses. Strip Tease is a very short dwarf (10–15 cm in height at Bozeman under irrigation) with a hooded spike where the palea is split at the top to expose part of the kernel. In 1970, normal height lines (80–85 cm in height at Bozeman under irrigation) were bulked from the Betzes*7 /Strip Tease F_4 to form the isolines CI 16569 (*KK*, 4 lines) and CI 16570 (*kk*, 8 lines). In 1972, semidwarf lines (65–70 cm in height at Bozeman under irrigation) from the Betzes*7 /Strip Tease F_5 were bulked for the isolines CI 16571 (*KK*, 5 lines) and CI 16572 (*kk*, 11 lines). These isolines closely resemble Betzes except for the hooded and plant height differences.

The next pair of isolines was developed by crossing CI 2220, a hooded type, to the recurrent parent Compana, CI 5438 (2), in 1957 and retaining the hooded phenotype in subsequent backcrosses. CI 2220 is a two-rowed, black-seeded selection that originated from a cross of 'Virginia Hooded'/'Jet' that was made at the University of Minnesota in 1916. Although the first cross was to CI 2220 as the female parent, backcrosses were to Compana as the female parent. In 1970, lines were bulked from the Compana*7/CI 2220 F_4 to form the isolines CI 16573 (*KK*, 8 lines) and CI 16574 (*kk*, 6 lines). These isolines closely resemble Compana except for the hooded difference.

The last pair of isolines was obtained by crossing Betzes as the female to CI 2220 in 1976, making subsequent backcrosses to the recurrent parent CI 2220 as the female parent while retaining the awned phenotype. In 1984, lines were bulked from the CI 2220*7/Betzes F_3 to form the isolines PI 534508 (*kk*, 14 lines) and PI 534509 (*KK*, 6 lines). These isolines closely resemble CI 2220 except for the awned difference.

These pairs of isogenic lines will allow evaluation of the gene for hoods in the cytoplasmic and nuclear background of the awned cultivars Betzes and Compana, and the evaluation of the gene for awns in the cytoplasmic and nuclear background of the hooded CI 2220.

Small samples of seed (5g) of each isoline may be obtained upon request from USDA-ARS, National Small Grains Collection, P.O. Box 307, Aberdeen, ID 83210.

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References and Notes

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Published in Crop Sci. 30:754–755 (1990).

REGISTRATION OF THREE COTTON GERMPLASM LINES

THREE germplasm lines of cotton (*Gossypium hirsutum* L.), designated as DES 920 (Reg. no. GP-418, PI 536522), DES 926 (Reg. no. GP-419, PI 536523), and DES 936 (Reg. no. GP-420, PI 536524) were released by the Delta Branch, Mississippi Agricultural and Forestry Experiment Station in 1989.

These germplasm lines originated from a single plant selection in the F_2 generation and subsequent reselection in the F_6 generation of a cross between two experimental strains (DES-S11-9 and Stoneville 8701) in 1977. Stoneville 8701 was a nectarless strain from Stoneville Pedigreed Seed Company and DES-S11-9 was the bulk population from which 'DES 119' (Reg. no. 88 and PV no. 8500176) was selected (1).

In 19 Mississippi tests (1984–1988), DES 920 produced significantly higher lint yields (4%) than DES 119. Lint yields of DES 926 and DES 936 were approximately the same as that of DES 119. Boll size and lint percentage of all three lines are significantly greater than those of DES 119. The three lines are also slightly taller and later maturing than DES 119. Fiber length and tensile strength of DES 926 are significantly better than those of DES 119. Fiber length of DES 920 and DES 936 is approximately the same as that of DES 119, but both have significantly weaker fiber. Micronaire values of all three lines are significantly higher than that of DES 119.

DES 920 and DES 936 showed resistance to fusarium wilt [caused by *Fusarium oxysporum* Schlectend.:Fr. *f.* sp. *vasinfectum* (Atk.) Snyd. and Hans.] equal to that of DES 119 and 'McNair 235' in the Regional Fusarium Wilt Nursery at Tallassee, AL. DES 926 is more susceptible to fusarium wilt than are DES 119 or McNair 235.

DES 920 and DES 936 showed more resistance to tarnished plant bug, *Lygus lineolaris* (Palisot de Beauvois) than did DES 119 or 'Stoneville 825' in a 2-yr study at Stoneville, MS. Plant bug resistance of DES 926 is equal to that of DES 119 and Stoneville 825.

DES 936 was evaluated in the 1987 and 1988 Regional Short Season Test and ranked second and third, respectively, for average lint yield over all tests. DES 936 has also shown resistance to *Heliothis* sp.

DES 920 was evaluated in the 1987 and 1988 Regional Heliothis Test and ranked first and third, respectively, for average lint yield over all tests.

DES 926 was evaluated in the 1988 Regional High Quality Test and ranked sixth in average lint yield. The average lint yield of DES 926 was 1125 kg ha^{-1} compared to 1148 kg ha^{-1} for the check cultivar, 'Deltapine 50'.

The yielding ability of these lines over a wide range of environments and their pest resistance demonstrate their value as breeding lines in the development of conventional and hybrid cultivars.

Until present supplies are exhausted, small amounts of seed of these lines are available for distribution to cotton breeders and other research workers upon written request to R.R. Bridge, Delta Branch Experiment Station, Stoneville, MS 38776. Recipients of seed are asked to make appropriate recognition of the source of the germplasm if it is used in the development of new germplasm, cultivars, or hybrids.

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References and Notes

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Published in Crop Sci. 30:755 (1990).