REGISTRATIONS OF GERMPLASM

Registration of NC 72 Cotton Germplasm Line

NC 72 (Reg. no. GP-715, PI 615073) cotton (Gossypium hirsutum L.) germplasm line was released by the North Carolina Agricultural Research Service in 1999. This line has excellent lint yield along with superior fiber quality.

NC 72 is an F_{56} selection derived from ‘DES 119’/‘KC 311’/‘Deltapine 90’. DES 119 is a cross of ‘DES 24’ and DES 2134-047 (Bridge, 1986). KC 311 was the result of a cross between ‘McNair 235’ and Deltapine 90 (Calhoun et al., 1997). Deltapine 90 came from a cross of Deltapine 6516 and Deltapine 6582 (Calhoun et al., 1997).

Lint yield of NC 72 averaged 1352 kg ha\(^{-1}\) compared with 1333 kg ha\(^{-1}\) for ‘Deltapine 51’ in eight North Carolina trials from 1998 to 1999. NC 72 averaged 42.6% lint compared with 41.5% for Deltapine 51. NC 72 is 7.6 cm taller than Deltapine 51. Boll size of NC 72 averaged 5.6 g, while Deltapine 51 averaged 5.9 g. Fiber length of NC 72 averaged 29.7 mm while Deltapine 51 averaged 28.9 mm. Elongation averaged 5.6 and 6.6% for NC 72 and Deltapine 51, respectively. Uniformity index was not different (\(P = 0.05\)) at 83.6 and 83.4% for NC 72 and Deltapine 51, respectively.

NC 72 had a higher fiber strength at 328.3 kN m kg\(^{-1}\), compared with 278.3 kN m kg\(^{-1}\) for Deltapine 51. NC 72 had a lower micronaire reading of 4.2, compared with 4.7 for Deltapine 51. NC 72 had a yarn (skein) strength of 36 kg, compared with 26.8 kg for Deltapine 51; and a fineness reading of 143 mtex, compared with 171 mtex for Deltapine 51. Seed index of NC 72 is 9.7 g, compared with 10.0 g for ‘Sure Grow 125’. Maturity of NC 72 is similar to Deltapine 51.

NC 72 has fair resistance (52% of plants showed foliar symptoms) to fusarium wilt [caused by Fusarium oxysporum Schlechtend.:Fr. f. sp. vasinfectum (Atk.) W.C. Snyder & H.N. Hans.] when compared with the resistant check, ‘M315’ (25% of plants with foliar symptoms), and the susceptible check, ‘Rowden’ (91% of plants wilted). Evaluation was performed in the Regional Wilt Screening Test at Tallassee, AL. NC 72 has the T\(_1\) level of pubescence (Lee, 1985), commonly referred to as ‘Deltapine Smoothleaf’. It has nectaries, normal leaf shape, and exhibits a semi-cluster fruiting pattern.

NC 72 has a fiber index of 45.6, compared with 41.5 for Deltapine 51, and a micronaire reading of 37.3, compared with 33.6 for Deltapine 51. NC 72 has a lower uniformity index of 85.0, compared with 87.4 for Deltapine 51. NC 72 has a higher elongation of 5.6%, compared with 4.7% for Deltapine 51. NC 72 has a lower seed index of 10.0 g, compared with 10.3 g for Deltapine 51. NC 72 has a higher lint yield of 1352 kg ha\(^{-1}\), compared with 1333 kg ha\(^{-1}\) for Deltapine 51. NC 72 has a higher fiber strength of 328.3 kN m kg\(^{-1}\), compared with 278.3 kN m kg\(^{-1}\) for Deltapine 51. NC 72 has a lower micronaire reading of 4.2, compared with 4.7 for Deltapine 51. NC 72 has a lower seed index of 9.7 g, compared with 10.0 g for ‘Sure Grow 125’. Maturity of NC 72 is similar to Deltapine 51.

Registration of TAM 88G-104 High-Yielding Upland Cotton Germplasm

TAM 88G-104 (Reg. no. GP-715, PI 614941) upland cotton (Gossypium hirsutum L.) was developed by the Texas Agricultural Experiment Station, College Station, Texas, in 1998. TAM 88G-104 combines high yield potential with excellent fiber properties, and is adapted to central and southern Texas. TAM 88G-104 originated as a single F\(_2\) plant from the cross of ‘Deltapine 90’ (Calhoun et al., 1994) and ‘KC 311’/‘Deltapine 6516’/‘Des 119’ (Bridge, 1986). TAM 88G-104 was developed by the TAMU Research and Development Library, Department of Soil and Crop Sciences, Texas Agricultural Experiment Station, and released between 1970 and 1995.

The resulting F\(_4\) progeny row was selected for further evaluation as a pure line. TAM 88G-104 is a mid- to full-season, picker-type upland cotton cultivar with a growth habit intermediate between ‘Sure Grow 125’ and ‘Deltapine 50’ (Calhoun et al., 1994) and Deltapine 90 when grown with supplemental irrigation in College Station, TX. Averaged across 2 yr at College Station and grown under irrigated culture, TAM 88G-104 reached 60% open bolls in 96 d from planting, while Deltapine 50 required 129 d, and ‘Sure Grow 125’ required 165 d. TAM 88G-104 reached 57% open bolls in 83 d from planting, while Deltapine 50 required 110 d, and ‘Sure Grow 125’ required 165 d.

Lint yield of NC 72 averaged 1352 kg ha\(^{-1}\) compared with 1333 kg ha\(^{-1}\) for ‘Deltapine 51’ in eight North Carolina trials from 1998 to 1999. NC 72 averaged 42.6% lint compared with 41.5% for Deltapine 51. NC 72 is 7.6 cm taller than Deltapine 51. Boll size of NC 72 averaged 5.6 g, while Deltapine 51 averaged 5.9 g. Fiber length of NC 72 averaged 29.7 mm while Deltapine 51 averaged 28.9 mm. Elongation averaged 5.6 and 6.6% for NC 72 and Deltapine 51, respectively. Uniformity index was not different (\(P = 0.05\)) at 83.6 and 83.4% for NC 72 and Deltapine 51, respectively.

NC 72 had a higher fiber strength at 328.3 kN m kg\(^{-1}\), compared with 278.3 kN m kg\(^{-1}\) for Deltapine 51. NC 72 had a lower micronaire reading of 4.2, compared with 4.7 for Deltapine 51. NC 72 had a yarn (skein) strength of 36 kg, compared with 26.8 kg for Deltapine 51; and a fineness reading of 143 mtex, compared with 171 mtex for Deltapine 51. Seed index of NC 72 is 9.7 g, compared with 10.0 g for ‘Sure Grow 125’. Maturity of NC 72 is similar to Deltapine 51.

NC 72 has fair resistance (52% of plants showed foliar symptoms) to fusarium wilt [caused by Fusarium oxysporum Schlechtend.:Fr. f. sp. vasinfectum (Atk.) W.C. Snyder & H.N. Hans.] when compared with the resistant check, ‘M315’ (25% of plants with foliar symptoms), and the susceptible check, ‘Rowden’ (91% of plants wilted). Evaluation was performed in the Regional Wilt Screening Test at Tallassee, AL. NC 72 has the T\(_1\) level of pubescence (Lee, 1985), commonly referred to as ‘Deltapine Smoothleaf’. It has nectaries, normal leaf shape, and exhibits a semi-cluster fruiting pattern.

NC 72 is an F_{56} selection derived from ‘DES 119’/‘KC 311’/‘Deltapine 90’. DES 119 is a cross of ‘DES 24’ and DES 2134-047 (Bridge, 1986). KC 311 was the result of a cross between ‘McNair 235’ and Deltapine 90 (Calhoun et al., 1997). Deltapine 90 came from a cross of Deltapine 6516 and Deltapine 6582 (Calhoun et al., 1997).

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TAM 88G-104 is a mid- to full-season, picker-type upland cotton cultivar with a growth habit intermediate between ‘Sure Grow 125’ and ‘Deltapine 50’ when grown with supplemental irrigation in College Station, TX. Averaged across 2 yr at College Station and grown under irrigated culture, TAM 88G-104 reached 60% open bolls in 96 d from planting, while Deltapine 50 required 129 d, and ‘Sure Grow 125’ required 165 d. TAM 88G-104 had the T\(_1\) level of pubescence (Lee, 1985), commonly referred to as ‘Deltapine Smoothleaf’. It has nectaries, normal leaf shape, and exhibits a semi-cluster fruiting pattern.