

UNITED STATES DEPARTMENT OF AGRICULTURE  
Agricultural Research Service  
Washington, D.C.

and

CLEMSON UNIVERSITY EXPERIMENT STATION  
Clemson, SC

and

COTTON INCORPORATED  
Cary, NC

**NOTICE OF RELEASE OF PD 05064, PD 05069, PD 05070, and PD 05071 GERMPLASM  
LINES OF COTTON**

The Agricultural Research Service, United States Department of Agriculture, the Clemson University Experiment Station, and Cotton Incorporated announce the release of two upland cotton germplasm lines, PD 05064, PD 05069, PD 05070, and PD 05071 that possess superior fiber quality, fiber spinning performance, and excellent yield performance under a range of growing environments. The lines provide public and private breeders with resources for concurrent improvement of fiber quality, fiber spinning, and yield performance in Upland cottons with broad adaptation across the United States.

PD 05064, PD 05069, PD 05070, and PD 05071 are full-sibs derived from a cross of PD 94042 and Fibermax 989 (FM 989, PVP #9800259). PD 94042 was derived from a cross between 'Jimian 8' and 'PD-3'. Jimian 8 was developed by the Cotton Research Institute, Chinese Academy of Sciences. PD-3 was released as a southeastern USA cultivar combining high lint yield and superior fiber and spinning ability. FM 989 was developed by the Commonwealth Scientific and Industrial Research Organisation (Australia) from a cross between 'Deltapine Acala 90' (PVP #8100143) and an experimental breeding line 75007-3. Approximately fifteen F1 plants each of PD 94042/FM 989 were self-pollinated at the ARS winter nursery in Mexico and the F2 seed bulked for each cross. Based on its yield performance, the F2 bulk was advanced to the F3 for single plant selection. The F3 plants were selected for plant type and fiber properties and advanced to F4 progeny rows. PD 05064, PD 05069, PD 05070, and PD 05071 were each derived from independent F3:4 progeny rows selected for plant type, fiber properties, and yield potential.

PD 05064 displays a full-season maturity and combines excellent yield potential, fiber quality, and fiber spinning performance. Averaged over 15 locations of the 2012 Regional Breeders Testing Network (RBTN) trial from California to Virginia, PD 05064 produced lint yield just below the check cultivars 'Deltapine 393', 'Suregrow 105', and 'Fibermax 958' (Table 1). PD 05064 produced lint percent equal to each of the three check cultivars. Lint index of PD 05064 was lower than check cultivars. Compared to other yield components of check cultivars, PD

05064 produced larger bolls and a greater number of seeds. Seed index of PD 05064 was lower than check cultivars. PD 05064 produced fiber length and strength superior to Deltapine 393, Suregrow 105, and Fibermax 958. Micronaire was lower than Deltapine 393 and Fibermax 958. The fiber quality index (a weighted average of fiber length (10 percent), micronaire (10 percent), uniformity (30 percent), and fiber strength (50 percent)) of PD 05064 was superior to each of the check cultivars. Averaged across three locations of the 2011 Elite Conventional Strains test conducted in South Carolina and North Carolina, PD 05064 produced yarn with thin places equal to the high quality check cultivar 'Phytogen 72' and Deltapine 393 (Table 2). PD 05064 yarn produced thick places and tenacity equal to Deltapine 393. PD 05064 yarn was equal to both check cultivars for force to break.

PD 05069 displays a full-season maturity and combines excellent yield potential, fiber quality, and superior fiber spinning performance. Averaged over 13 locations of the 2011 Regional Breeders Testing Network (RBTN) trial from California to Virginia, PD 05069 produced lint yield just below the check cultivars Deltapine 393 and Suregrow 105 but equal to Fibermax 958 (Table 1). PD 05069 produced lint percent equal to Deltapine 393 and superior to Fibermax 958 and Suregrow 105. Lint index of PD 05069 was greater than Deltapine 393 and Suregrow 105. PD 05069 produced bolls larger than Deltapine 393 and Suregrow 105, a greater number of seeds boll-1 than Fibermax 958 and Suregrow 105, and seed index greater than Deltapine 393. PD 05069 produced fiber length and strength superior to Deltapine 393, Suregrow 105, and Fibermax 958. Micronaire was lower than Suregrow 105. The fiber quality index of PD 05069 was equal to Fibermax 958 and superior to Deltapine 393 and Suregrow 105. Averaged across three locations of the 2011 Elite Conventional Strains test conducted in South Carolina and North Carolina, PD 05069 produced yarn with thin and thick places equal to Deltapine 393 and the high quality check cultivar Phytogen 72 (Table 2). PD 05069 produced yarn with a force to break and tenacity equal to Phytogen 72 and superior to Deltapine 393.

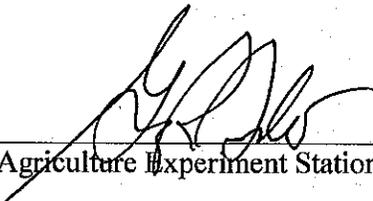
PD 05070 displays a full-season maturity and combines excellent yield potential, fiber quality, and superior fiber spinning performance. Averaged over 13 locations of the 2011 Regional Breeders Testing Network (RBTN) trial from California to Virginia, PD 05070 produced lint yield just below the check cultivars Deltapine 393 and Suregrow 105 but equal to Fibermax 958 (Table 1). PD 05070 produced lint percent equal to Deltapine 393 and superior to Fibermax 958 and Suregrow 105. Lint index of PD 05070 was equal to Deltapine 393 and Suregrow 105. PD 05070 produced bolls equal to Deltapine 393 and Suregrow 105, a greater number of seeds boll-1 than Fibermax 958 and Suregrow 105, and seed index equal to Deltapine 393. PD 05070 produced fiber length equal to Fibermax 958 but greater than Deltapine 393 and Suregrow 105. Micronaire was lower than Suregrow 105 and equal to Deltapine 393 and Fibermax 958. Fiber strength of PD 05070 was equal to Deltapine 393 and greater than Suregrow 105. The fiber quality index of PD 05070 was equal to Deltapine 393 and Fibermax 958. Averaged across three locations of the 2011 Elite Conventional Strains test conducted in South Carolina and North Carolina, PD 05070 produced yarn with thin and thick places equal to Deltapine 393 (Table 2). PD 05070 produced yarn with a force to break and tenacity equal to the high quality check cultivar Phytogen 72 and Deltapine 393.

PD 05071 displays a full-season maturity and combines excellent yield potential, fiber quality, and fiber spinning performance. Averaged over 15 locations of the 2012 Regional Breeders

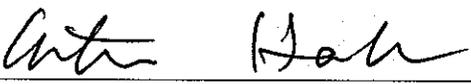
Testing Network (RBTN) trial from California to Virginia, PD 05071 produced lint yield just below the check cultivars Deltapine 393 and Fibermax 958 but equal to Suregrow 105, (Table 1). PD 05071 produced lint percent lower than each of the three check cultivars. Compared to other yield components of check cultivars, PD 05071 produced larger bolls and a greater number of seeds. Seed index and lint index of PD 05071 was lower than check cultivars. PD 05071 produced fiber length, micronaire, and fiber strength equal to or better than Deltapine 393 and Fibermax 958. The fiber quality index of PD 05071 was equivalent to each of the check cultivars. Averaged across three locations of the 2011 Elite Conventional Strains test conducted in South Carolina and North Carolina, PD 05071 produced yarn with thin and thick places, force to break, and tenacity equal to the high quality check cultivar Phytogen 72 and Deltapine 393.

These four germplasm lines provide an excellent source of high fiber quality, excellent fiber spinning performance, and high yield potential with broad adaptation across the upland cotton belt in the United States. Small quantities of seed (20 g) are available to cotton breeders, geneticists, and other research personnel upon written request to: B.T. Campbell, USDA-ARS, Coastal Plains Soil, Water, and Plant Research Center, 2611 West Lucas Street, Florence, SC 29501. It is requested that appropriate recognition of the source be given when these germplasm lines contribute to the development of a new breeding line, hybrid, or cultivar. Genetic material of this release will be deposited in the National Plant Germplasm System where it will be available for research purposes, including development and commercialization of new cultivars.

**Signatures:**

  
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Director, Agriculture Experiment Station, Clemson University

4/2/14  
Date

  
\_\_\_\_\_  
Vice President, Ag & Environmental Research  
Cotton Incorporated

5/15/2014  
Date

  
\_\_\_\_\_  
Deputy Administrator, Crop Production and Protection  
Agricultural Research Service, U.S. Department of Agriculture

5/15/14  
Date