

Table 1. Six barley germplasm lines resistant to septoria nodorum blotch.

Germplasm identification	Registration no.	Parentage	Height (cm)†	Maturity‡
GA-23 (GA 75-535A)	GP-123	GA Jet/Cebada Capa	95	Medium
GA-24 (GA 77-397)	GP-124	GA Jet/Volbar	100	Early
GA-25 (GA 72008)	GP-125	NY 6005/Barsoy	100	Early
GA-26 (GA 80-444)	GP-126	Volbar/*2 Atlas 68	108	Medium
GA-27 (GA 73022)	GP-127	VA 71-44-12/Knob	95	Medium
GA-28 (GA 79-629)	GP-128	Volbar/Atlas 68	100	Medium

† When grown in the Piedmont region of Georgia.

‡ Early is comparable to Dawn; medium is comparable to Milton.

nodorum (E. Müller) Hedjaroude [anamorph *Stagonospora nodorum* (Berk.) Castellani & E. G. Germano = *Septoria nodorum* Berk.] were released by the Georgia Agricultural Experiment Station in 1989 (Table 1). These germplasm lines combine high yield potential and septoria nodorum blotch resistance.

Natural infection by *Stagonospora nodorum* was found in barley breeding plots at Athens, GA in 1980 (2). A marked differential response was observed among the various genotypes. A series of replicated greenhouse and field tests was initiated to evaluate cultivars and elite breeding lines, adapted to the southeastern USA, for resistance to *S. nodorum*. Resistance to *S. nodorum* in barley has not been reported previously in North America. Magnus (4) identified resistance of *S. nodorum* of barley in Norway.

Selection of resistant lines from barley breeding nurseries in Georgia was conducted from 1980 to 1989. Disease pressure was high each season from natural infection and inoculation of plots with virulent isolates of *S. nodorum*. The best selections from each nursery were evaluated in subsequent seasons. Based on at least 3 yr of greenhouse and field tests, six lines with superior septoria resistance were selected from 227 entries (3). All six lines are six-rowed, tall (95–115 cm), semihardy winter barleys with acceptable agronomic

characteristics. They are later in maturity than 'Dawn' (1) and similar to 'Milton' (midseason maturity) when grown in the Piedmont region of Georgia. GA 75-535A, GA 77-397, and GA 79-629 have either short or no awns; the other lines have long awns. GA 72008 is susceptible to barley yellow dwarf luteovirus.

These lines will be useful as parental material in winter barley breeding programs to improve resistance to septoria nodorum blotch. Seed will be maintained by the senior author and is available for distribution. It is requested that appropriate recognition of its source be made when this germplasm contributes to an improved cultivar of barley. Seed requests should be sent to the Department of Plant Pathology, Georgia Station, University of Georgia, Griffin, GA 30223.

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References and Notes

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5. B. M. Cunfer, Dep. of Plant Pathology, Univ. of Georgia, Georgia Station, Griffin, GA 30223; A. R. Brown (retired), Dep. of Agronomy, Univ. of Georgia, Athens 30602; J. W. Johnson and P. L. Raymer, Dep. of Agronomy, Univ. of Georgia, Georgia Station, Griffin, GA 30223; P. L. Bruckner, and D. D. Morey (retired), Dep. of Agronomy, Univ. of Georgia, Coastal Plain Station, Tifton, GA 31793. Registration by CSSA. Accepted 28 Feb. 1990. *Corresponding author.

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REGISTRATION OF THREE UPLAND COTTON GERMPLASM LINES

THREE germplasm lines of cotton, *Gossypium hirsutum* L. (Reg. no. GP-422 to GP-424; PI 540254 to PI 540256), were released by the Texas Agricultural Experiment Station in November 1989. These germplasm lines were developed in an ongoing effort to combine early maturity, compact plant type, and superior fiber quality.

These lines were derived by hybridization in 1977, 1980, or 1981, followed by pedigree selection. Individual plants were selected during the F₂ to F₄ generations on the basis of apparent yield potential, plant type, and high volume instrument (HVI) fiber properties.

Designations and pedigrees of these germplasm lines are given in Table 1. These germplasm lines were not significantly different in lint yield from Stoneville 213 during 1986 and 1987 or from Tamcot CD3H in 1988 at College Station, TX. However, TAM 1051 averaged 14% more lint ha⁻¹ year⁻¹ than the control cultivar and TAM 0155 averaged 5% more lint ha⁻¹.

These lines are not different in percent lint or upper-half mean length of fibers than Stoneville 213 or Tamcot CD3H. Germplasm line TAM 1062 had significantly stronger fibers than Tamcot CD3H and tended to be stronger than Stoneville 213.

These lines have a high harvest index and ratio of seed-cotton yield to vegetative mass, and are desirable in cotton production regions where the crop is harvested by stripper machines. Plants having a compact conformation often are deficient in yield, boll characteristics, and/or fiber properties. These three lines represent advancement in combining desirable agronomic attributes and compact plant conformation.

Twenty-five seeds of each of these germplasm lines will be available for distribution from the corresponding author as long as seed supplies last. Research and development of these germplasm lines were supported by the Texas Food

Table 1. Designations and pedigrees of three upland cotton germplasm lines.

Designation	Pedigree
TAM 1051	[[[(CA-491A × Lankart 57) × [(Empire × Lankart 611) × (Empire × Lankart 611)]] × [Paymaster 1209 × (Lankart 57 × Acala 5675)]] × [[Paymaster 1209 × (Lankart 57 × Acala 5675)]] × [Lankart 57 × (Deltapine 14 × Roger's Acala)]]
TAM 0155	[(CA 491A × Lankart 57) × Empire] × [(AE-179 × T-105) × (Deltapine 14 × Roger's Acala)] × [Paymaster 1209 × (Lankart 57 × Acala 5675)]
TAM 1062	[79-XX-1 (high strength line of unknown origin)] × (Tamcot SP21 S × Arkugo 4)

and Fiber Commission. Fiber properties were determined at the International Center for Textile Research and Development of Texas Tech University, Lubbock, TX.

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References and Notes

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REGISTRATION OF SEVEN UPLAND COTTON GERMPLASM LINES ADAPTED TO THE COASTAL BEND OF TEXAS

SEVEN germplasm lines of cotton, *Gossypium hirsutum* L. (Reg. no. GP-425 to GP-431; PI 540257 to PI 540263), were released by the Texas Agricultural Experiment Station in November 1989. These germplasm lines were developed as part of a cotton improvement program to provide improved germplasm adapted to the Coastal Bend region of Texas.

These lines were derived by hybridization from 1977 through 1980, followed by pedigree selection. Individual plant selections during the F₂ to F₄ generations were based on apparent yield potential in nurseries at the Texas A&M Research and Extension Center, Corpus Christi, TX. Other characters considered during the selection process were plant conformation and high volume instrument (HVI) fiber properties. Fiber properties were determined at the International Center for Textile Research and Development of Texas Tech University, Lubbock, TX. Designations and pedigrees of these germplasm lines are given in Table 1.

These germplasm lines averaged from 18 to 33% more lint than control cultivars from 1986 through 1988 at Corpus Christi, TX. These germplasm lines were compared with Stoneville 213 during 1986 and 1987 and with Deltapine 50 in 1988. Only four lines, TAM 0033, 0066, 1033, and 8177, were significantly lower in percent lint than the highest-yielding control cultivar, Deltapine 50, and none were significantly lower than Stoneville 213.

Table 1. Designations and pedigrees of seven upland cotton germplasm lines.

Designation	Pedigree
TAM 8165	PD 6520 × [[Lankart 57 × (Deltapine 14 × Roger's Acala)] × Lankart 3840] × DSR6-19]
TAM 9163	[[North Carolina Smooth 2 × (AE-179 × Tideland 69)] × (Paymaster 1209 × Lankart 57)] × [[Lankart 57 × (Deltapine 14 × Roger's Acala)] × Lankart 3840] × DSR6-19]
TAM 73840	[[Lankart 57 × (Deltapine 14 × Roger's Acala)] × Lankart 3840] × DSR6-19] × [(Gregg × Fox 4) × (Lankart 57 × Acala 5675)]
TAM 0033	{Tancot SP21 S × [(CA 491A × Lankart 57) × 6M-10]} × [(Paymaster 1209 × DSR6-19) × [(Deltapine 14 × Roger's Acala) × Lankart 57]]
TAM 8177	PD 6891 × [[Lankart 57 × (Deltapine 14 × Roger's Acala)] × DSR6-19]
TAM 0066	(New Mexico 1073-30 × 407-20) × [(Paymaster 1209 × DSR6-19) × Tancot CAMD-E]
TAM 1033	[[AE-179 × T 501] × (Deltapine 14 × Roger's Acala)] × (Paymaster 1209 × DSR6-19)] × [[Lankart 57 × (Deltapine 14 × Roger's Acala)] × Lankart 3840] × [(Gregg × Fox 4) × (Lankart 57 × Acala 5675)]

TAM 0033 had significantly longer upper-half mean length (UHM) of fibers than the average of the two control cultivars and no germplasm had significantly shorter fibers. Only germplasm line TAM 1033 had significantly weaker fibers than Stoneville 213. Three of the seven lines, TAM 0033, 0066, and 8177, had significantly finer fibers as indicated by micronaire readings than either Stoneville 213 or Deltapine 50.

Twenty-five seeds of each germplasm line will be available for distribution from the corresponding author until seed supplies are exhausted. Research and development of these germplasm lines were supported in part by the Texas Food and Fiber Commission.

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REGISTRATION OF 10 UPLAND COTTON GERMPLASM LINES HAVING IMPROVED FIBER BUNDLE STRENGTH

TEN germplasm lines of cotton, *Gossypium hirsutum* L. (Reg. no. GP-432 to GP-441; PI 540264 to PI 540273), were released by the Texas Agricultural Experiment Station in November, 1989. These germplasm lines were developed as part of a cotton breeding program to improve the fiber bundle strength of cotton produced in central and southern Texas. These lines were derived by hybridization in 1981 or 1982 followed by pedigree selection. Individual plant selections during the F₂ to F₄ generations were based on apparent yield potential, plant conformation, and high volume instrument (HVI) determined fiber properties. Plant and progeny selections and agronomic evaluations were conducted at the Texas A&M University Research Farm, College Station, TX. Designations and pedigrees of these germplasm lines are given in Table 1.

Least squares analysis of lint yields of irrigated plants indicated that these lines did not vary significantly from Stoneville 213, the high-yielding control cultivar, during 1986, 1987, and 1988 at College Station, TX. All lines had fiber bundle strengths (as measured by HVI) significantly higher than Stoneville 213 and not different from Acala 1517-75, the high-quality control cultivar. Upper-half mean fiber lengths of TAM 1025, 1057, 1080, 2111, and 2126 were not significantly different from Acala 1517-75, while all other lines were significantly shorter. TAM 1074 and 2111 had significantly coarser fibers than Acala 1517-75, while the remaining eight lines were not significantly different in fiber fineness than Acala 1517-75. TAM 2008 had significantly lower fiber-length uniformity than Acala 1517-75 but is acceptable at a value of 82. All lines had acceptable fiber elongation values.

Twenty-five seeds of each of these germplasm lines will be available for distribution from the corresponding author until seed supplies are exhausted. Research and development of these germplasm lines were supported in part by Cotton, Inc., and the Texas Food and Fiber Commission. Fiber properties were determined at the International Center for Textile