

**H1277 AND H1560
TWO NEW VARIETIES FROM
HARTZ COTTON FOR 1996**

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Abstract

H1277 is Jacob Hartz's first introduction from its own proprietary breeding program. It is an early "true" smooth leaf variety with good fiber properties and excellent Fusarium wilt tolerance. H1560 originated from the Louisiana Agricultural Experiment Station and was bred by Dr. Jack Jones. It joins the family of his previous releases by Hartz, H1215, H1220 and H1244. H1560 has shown excellent seedling vigor as well as Fusarium wilt tolerance. It has demonstrated superior yields in drought stress areas and on mixed to heavy soils. Fiber strength of H1560 is in the premium range.

H1277 has exhibited consistent yields over two years of testing and multiple locations, it ranks as one of its strongest attributes (Table 1, 2). H1277 was first tested in state commercial strains test in 1994. In combined comparisons from Arkansas, Mississippi and Tennessee, H1277 out yielded DP50 2.78% (Table 3). In 1994 Hartz smooth leaf test, H1277 from ten Beltwide locations out yielded DP50 1.9% (Table 4). Compared to DP50, H1277 is 2.0 g/tex stronger in fiber and ranges from 25.5 to 28.7 g/tex. Micronaire is slightly lower to equal DP50. Gin turn out averages 2.2% higher for H1277, and produces 34 and 35 staple lengths (Table 3).

Some phenotypical characteristics of H1277 are medium plant height and a bush type. It fruits lower to the ground at the average 5.8 nodes. Height to first fruiting branch is 7.7 inches compared to ST474 at 10.2 inches. Leaf type is medium and sometimes slightly cupped, it gives the appearance of an open type canopy. H1277 produces medium size seed with a count of approximately 4575/lb. The acid seed index is 9.925/grams. Boll type of H1277 is open with excellent storm resistance with boll weight averaging 5.0 grams. The earliness of H1277 is another one of its primary attributes. Its maturity is in the range of 115 to 125 days. On a percent first pick basis, H1277 is 1.2% earlier than DP50. As relative maturity to other varieties it is equal Sure Grow 125, Stoneville 132 and Hartz H1215 (Table 5).

H1277 has an excellent rating against the Fusarium/root knot wilt complex. For two years at the Tallasse Wilt Nursery H1277 averaged 16% infected plants compared to

M-315 the most resistant check 6% and Rowden 78% the most susceptible check. Verticillium wilt tolerance is also excellent. Good seedling vigor is another of H1277's strengths, it has drawn excellent comments from seed producers in both Arizona and Arkansas.

H1277 is adapted primarily to the Midsouth and parts of Arizona. Its medium plant habit makes it more naturally fitted to rich Delta soils and Alluvial River and creek bottom areas where rank growth is a concern. H1277 responds well to irrigation and should not be limited prior to bloom. In regions of Arizona H1277 has performed extremely well. Lint yields of H1277 in Hartz tests at Maricopa, Arizona were 1771 and 1776 for years 1994 and 1995 respectively. Heat tolerance in the desert appears to be excellent.

Hartz H1560 is the second of Hartz's introductions for 1996. It has demonstrated superior performance in Hartz and state yield trials across the Belt. H1560 is a medium maturing variety developed by LAES cotton breeder Dr. Jack Jones; its primary area of development was at the St. Joe Experiment Station on some of the mixed type and clay soils of that area. H1560's strongest attributes are its excellent yield potential, outstanding fiber quality and Fusarium wilt tolerance.

Yield testing of H1560 by Hartz was first initiated in 1994 even though Dr. Jones had tested it extensively through out Louisiana prior (Table 6). In three Louisiana test locations it 1994, H1560 out yielded DP5415 11.6% in lint yield (Table 7). H1560 yield data across the Belt was very strong again in 1995. In state test from twenty-two locations H1560 was comparable to DP5415 and ST LA887 (Table 8). Yield data from Hartz tests representing sixty-three replications and eleven locations show H1560's very stable yield potential and out yielded SG501 4.7% in lint yield (Table 9). Fiber data of H1560 is very strong but quite comparable to varieties DP5415, ST LA887 and SG501 in fiber strength, micronaire and lint % (Tables 6, 8, 9). Some phenotypical characteristics of H1560 are a robust plant at the seedling stage as well as at maturity, producing a stalk that stands well. H1560 shanks up readily after emergence demonstrating its excellent seedling vigor. H1560 typically begins fruiting at the seventh to eighth node. Plant height is medium to tall depending on soil type with longer internodes on fruiting branches. Boll size of H1560 is in the 5.5 to 6.0 range; though its boll size is large, storm resistance has been excellent. Leaf type is a flat medium large leaf much like that of DES 119 and produces a full canopy. Seed size of H1560 is medium like H1277 and has approximately 4550 seed per pound. The acid seed index is 9.3 to 10.0.

The maturity range of H1560 is in the medium full range depending on location and soil type, but generally in the 124 to 140 day range. Compared to DP5415 and ST LA887, H1560 is somewhat equal in maturity (Table 10).

Another characteristic of H1560 is its drought tolerance. In University of Georgia 1995 dryland tests, H1560 out yielded its competitors in droughty situations (Table 11). H1560's reaction to the Fusarium wilt/root knot complex has also been very good. The Tallassee Wilt Nursery screening for years 1993 and 1995 show H1560 with 24% wilted plants compared to the resistant and susceptible check 27% and 77 % respectively (Table 12). H1560's primary area of adaptation is the southern region of the Cotton Belt and Arizona. It is particularly suited to mixed and clay soils where vigorous growth and plant height are encouraged. H1560 has yielded best in these areas of Louisiana and Mississippi and some other areas in the Delta. The dryland areas of Georgia and North Carolina tend to favor H1560 over other similar varieties significantly in yield (Table 11). Tolerance to heat has also been verified in seed producing areas of Arizona.

Table 1. 1994-95 Hartz Adv. Test - 11 Locations and 67 Replications.

Variety	Lint/Acre
H1277	1251
H1220	1283
H1560	1286

Table 2. 1995 State Yield Test - 24 Locations Beltwide Average - Yield and Fiber Performance

Variety	Diff.	Lint/Acre	Mic.	Str.	Lint%
H1277		900	4.86	26.5	39.5
DP50	-2	898	4.90	26.0	37.5
H1220	+43	943	4.80	27.3	41.4
SG125	+54	954	4.79	28.9	41.0

Table 3. 1994 State Strains Test - MS, AR, TN - Yield and Fiber Performance.

Variety	Lint/Acre	%inc.	Mic.	Lgth.	Str.	Lint %	% 1stPick
H1277	1186		4.1	1.15	27.8	35.1	73.0
DP50	1153	2.8	4.0	1.14	26.6	33.1	71.9

Table 4. H1277 Performance Hartz Smooth Leaf Test - 10 Locations and 30 Replications, 1994.

Variety	Yield	% Inc.	Lint %	Str.	Mic.
H1277	1392		39.5	26.50	4.58
DP50	1366	+1.9	36.9	26.15	4.37
SG501	1413	-1.5	41.1	29.80	4.72

Table 5. 1995 DBES Earliness as % 1st Pick and NAWB5.

Variety	% 1st Pick	NAWB5
H1277	92.6	89.5
SG125	92.9	89.9
H1215	93.0	91.1
DP50	91.9	91.2
ST132	93.7	87.3

Table 6. H1560 Performance - Hartz Test - 12 Locations - 1994.

Variety	Yield	Lint %	Str.	Mic.
H1560	1439	40.2	28.7	4.49
SG501	1483	40.7	30.7	4.62
H1220	1499	39.6	28.4	4.77

Table 7. Yields of H1560 in 3 Louisiana Locations in 1994.

Variety	Yield	% Inc.
H1560	1439	
DP5415	1290	11.6+
ST LA887	1414	1.7+

Table 8. Yield of Comparable Mid-Season Varieties From 22 Locations of State Yield Data in 1995.

Variety	Yield	Lint %	Str.	Mic.
H1560	1016	40.4	29.64	4.91
DP5415	1001	40.5	30.18	5.06
ST LA887	971	41.4	31.00	4.80

Table 9. Yield of H1560 in Hartz Test From 11 Locations in 1995, 63 Replications of Data.

Variety	Yield	% Inc.	Lint %	Str.	Mic.
H1560	1147		39.8	31.9	5.2
SG501	1095	4.7+	39.3	32.4	5.2
H1220	1043	9.9+	39.6	31.2	5.1

Table 10. Earliness Comparisons of H1560 With Medium Maturing Varieties as % 1st Pick For Louisiana, Mississippi and % Open Bolls For North Carolina, 1995.

Variety	LA	MS	NAWB5	NC
H1560	90.3 93	80.3 88.7	93.9	41
DP5415	89.0 86	81.1 87.2	94.5	46
ST LA887	90.2 95	83.7 89.9	93.3	49

Table 11. Dryland Yield Comparisons of H1560 at the Georgia State Yield Test..

Variety	Location Dryland			
	Midville		Plains	
	Lint/Acre	% Inc.	Lint/Acre	% Inc.
H1560	855	397		
DP5415	660	29+	285	39+
ST LA887	739	15+	317	25+
GA King	717	19+	314	26+

Table 12. H1560 Root Knot Fusarium Ratings at Tallassee, Alabama.

Variety	1993	1995	Mean
H1560	31%	17%	24%
M-315	38%	17%	27%
Rowden	78%	75%	77%