



Replicated Agronomic Cotton Evaluation ELS vs Upland System

Grower Cooperator:	Vance Smith	Planting Date(s):	4/23/2025	5/12/2025	(5/16/2025; hailed out)
Texas A&M Agrilife:	Ken Legé, Ph.D.	Seed Treatments:	Acephate		
Location:	Forsan, TX (Glasscock Co)	Moist. @ planting:	Good	Good	Adequate
Replicates:	3	Soil Temp @ planting:	77F @2"; 70F @6"	Adequate	Warm
Plot Size:	24-60 rows x ~1294 to 1644 ft	Seed/Acre:	30,000	30,000	30,000
Row Spacing:	40"	Harvest Date:	11/6/2025	11/6/2025	11/6/2025
Beds:	Yes	Harvest Type:	Picker	Picker	Picker
Previous crop(s):	Sorghum	GPS Lat:	32.029286		
Soil type:	Angelo Clay Loam	GPS Long:	-101.330135		
Irrigation:	Drip (40", 4 gpm)	Elevation:	2572		

NOTE: site experienced a bacterial blight infestation in early August. While the upland was resistant, both ELS varieties were susceptible and yield was reduced by an undeterminable amount.

Variety (System)	Lint Yield	Turnout	Mic	Length	Staple	Strength	Uniformity	Color Grades	Leaf Grade	Based on Loan Value			
	(lbs/A, using FBRI gin turnouts)	(%; FBRI gin, grower gin)								Loan Value (\$/lb)	Lint Value (\$/A)	Total Crop Value (\$/A)	Net Return (\$/A)
Gowan 1432 (Hybrid ELS/Roller Gin)	1183	27.9, 30.2	3.50	1.35	46.0	36.6	85.6	2, 2, 2	3.3	0.8075	963	1212	1135
PHY807RF (Pima ELS/Roller Gin)	990	31.2, 33.8	3.60	1.39	48.0	43.6	86.5	2, 2, 2	3.3	0.9098	901	1076	1033
ST6000AXTP (Upland/Saw Gin)	1750	40.4, 42.4	4.10	1.13	36.2	30.7	81.7	21, 21, 21	2.3	0.5722	1002	1224	1158
Mean	1308	33.2	3.73	1.29	41.3	37.0	84.6		3.0	0.7632	955	1170	1109
LSD	262	1.2	ns	0.03	1.0	3.0	3.1		ns	0.1506	ns	ns	ns
R-square	0.95	1.00	0.80	0.99	0.99	0.97	0.85		0.67	0.91	0.25	0.33	0.28
CV (%)	8.8	1.7	5.9	1.0	1.0	3.6	1.6		19.2	8.7	16.4	15.1	16.0
Prob>F, variety	0.0029	<0.0001	0.0569	<0.0001	<0.0001	0.0008	0.0245		0.1600	0.0080	0.7485	0.5722	0.6818

Variety (System)	Plant Population	% Stand	Planting	Seed	Seed	Seed	Spot Price,	Lint Value (\$/A)	Total Crop Value (\$/A)	Net Return (\$/A)
	(#/A)	Establishment	Seed Cost (\$/A)	Yield (lbs/A)	Turnout (%; FBRI gin, grower gin)	Seed Value (\$/A)	12/15/25 (\$/lb)			
Gowan 1432 (Hybrid ELS/Roller Gin)	15827	52.8	76.89	2210	52.2, 51.4	249	1.3208	1567	1816	1739
PHY807RF (Pima ELS/Roller Gin)	15682	52.3	42.63	1552	48.9, 46.7	175	1.4242	1412	1586	1543
ST6000AXTP (Upland/Saw Gin)	13721	45.7	65.40	1975	45.6, 42.4	222	0.6200	1085	1307	1242
Mean	15077	50.3		1912	48.9	215	1.1217	1355	1570	1508
LSD	ns	ns		205	2.3	46	0.1472	ns	ns	ns
R-square	0.62	0.62		0.84	0.94	0.84	0.99	0.71	0.69	0.68
CV (%)	13.6	13.6		9.5	2.1	9.5	5.8	14.5	13.8	14.3
Prob>F, variety	0.4467	0.4467		0.0270	0.0033	0.0270	0.0002	0.0889	0.1052	0.1101

Values in bold are best within each column; values in green-shaded cells are not significantly different from the best value; total crop value = seed value + lint value; net return = total crop value - seed cost.
 ELS base loan value is \$0.95/lb, and AUP base loan is \$0.52/lb, +/- premiums/discounts, according to 2025 CCC loan charts. Spot prices source: <https://www.ams.usda.gov/mnreports/cnndsqsq.pdf>
 Seed value = seed yield x \$248/metric ton (Feb 2025 price, according to US Cotton, Cottonseed Price Received Monthly Trends: USDA Farm Price Received | Ycharts)
 ELS systems were spindle picked, roller ginned, and classed at USDA-AMS Cotton Classing in Visalia, CA, as ELS; Upland System was spindle picked, saw ginned, and classed as AUP at the Texas Tech Univ. Fiber and Biopolymer Research Institute.

On-site weather data for 4/23/25 planting**

Crop Stage*	Avg High Temp (°F)	Avg Low Temp (°F)	DD60 (95°F max)	Long Term DD60	Rain (in)	Solar Radiation (W/m²)	Total ET (in)	# Hours>95F	Avg Dev>95F
Planting to PHS	86.6	61.9	513.0	544.0	1.82	n/a	n/a	n/a	n/a
PHS to First Bloom	91.1	70.7	489.5	532.0	1.73	n/a	n/a	n/a	n/a
First Bloom to Cutout	90.4	70.5	569.0	729.0	3.29	154561	5.70	22	0.57
Cutout to Defoliation	90.7	66.2	1703.5	1750.0	4.67	496883	18.69	117	1.39
Defoliation to Harvest	76.8	47.2	65.0	64.0	0.66	55254	1.84	0	
Total			3340.0	3619.0	12.17	706698	26.23	139	

On-site weather data for 5/12/25 planting**

Crop Stage*	Avg High Temp (°F)	Avg Low Temp (°F)	DD60 (95°F max)	Long Term DD60	Rain (in)	Solar Radiation (W/m²)	Total ET (in)	# Hours>95F	Avg Dev>95F
Planting to PHS	92.4	66.4	507.5	468.0	2.79	n/a	n/a	n/a	n/a
PHS to First Bloom	92.6	72.3	505.0	571.0	0.48	n/a	n/a	n/a	n/a
First Bloom to Cutout	90.4	70.4	565.0	714.0	2.84	166076	6.08	27	1.34
Cutout to Defoliation	90.3	65.6	1517.0	1555.0	4.65	443243	16.58	99	1.34
Defoliation to Harvest	76.8	47.2	65.0	64.0	0.66	55254	1.84	0	
Total			3159.5	3372.0	11.42	664573	24.50	126	

**on-site weather station installed on 6/24/25; weather data previous to that date from NWS weather station at Big Spring Airport; hourly data not available for those days.

On-site weather data for 6/5/25 planting**

Crop Stage*	Avg High Temp (°F)	Avg Low Temp (°F)	DD60 (95°F max)	Long Term DD60	Rain (in)	Solar Radiation (W/m²)	Total ET (in)	# Hours>95F	Avg Dev>95F
Planting to PHS	92.3	72.1	500.5	561.0	0.22	n/a	n/a	n/a	n/a
PHS to First Bloom	90.1	70.3	521.0	666.0	3.10	153696	5.60	23	0.90
First Bloom to Cutout	95.7	71.5	636.5	724.0	0.65	171943	6.76	87	1.61
Cutout to Defoliation	88.3	63.5	997.0	957.0	4.00	304942	11.14	25	0.75
Defoliation to Harvest	76.8	47.2	65.0	64.0	0.66	55254	1.84	0	
Total			2720.0	2972.0	8.63	685835	25.34	135	

*PHS @ ≥5000DD60s; first bloom @ ≥1000 DD60s; Cutout = first bloom + 28 d; ET=evapotranspiration; Avg Dev>95F=average degrees above 95F when the daily high was ≥95F