Texas Cotton Quality Evaluation

Crop of 1996

International Textile Center
Texas Tech University
Lubbock, Texas

Sponsored by
Texas Food and Fibers Commission

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TEXAS COTTON QUALITY EVALUATION -- CROP OF 1996

INTRODUCTION

This is the seventeenth in a series of annual reports to provide interested parties with information regarding the quality of cotton produced in Texas. All testing, processing and evaluations were performed on commercial-sized equipment at the International Textile Center.

A sample of fifteen representative cotton bales was obtained in collaboration with key people in the production and marketing sectors within Texas. Also, USDA data on cotton varieties planted were used to ensure that the sample included the dominant Texas varieties. An attempt was made to select at least two bales from each of the major production areas of Texas. All bales are identified by their ginning locations as well as by the production area. For the third time, we have included a bale of roller-ginned Pima cotton from the Rio Grande Valley area.

Fiber samples from each of the fifteen bales were tested using individual instruments, high-volume instruments (HVIs), the IIC/Shirley FMT-III, the Peyer Texlab AL-101, and the Zellweger Uster AFIS. These results are given in virtually the same format as has been used in previous reports.

As has been done in previous years, a sample of each cotton was processed through a Hollingsworth card and the stickiness of the fibers was rated according to the behavior going through the crush rolls. Also, the percent of reducing sugars on the fibers was estimated using the Perkins' method; however, this is known to be an unreliable indicator of sticky behavior in processing. In addition, this year the total number of sticky points per gram of fiber was determined with the Lintronics FCT and is also reported here; however, calibration of the instrument is not yet standardized. All of the results on stickiness, taken together, suggested that there would be no problems in processing; this was confirmed by the spinning tests.

The sequence and types of machinery used for processing the fibers into yarns are shown in Figure 1. (The process for Pima bypassed both ERMs, was carded at 60 pounds per hour, included only combing, was spun from 1.80 hank roving and included ring spun N_e 30/1 and 80/1 at a 3.80 twist multiplier. All typical for this type of cotton.) Also, four of the longer staple Upland cotton varieties were processed both with and without combing, in order to document the impact of combing on yarn quality. This marked the fourth consecutive year for selective combing of Upland cotton.

As always, both rotor and ring spinning were included; spinning specifications are summarized in Table 1. The Schlafhorst Autocoro SE-9 was used for rotor spinning tests, and a Saco-Lowell SF-3H was used for ring spinning tests. Results for the combed Pima cotton are shown in Table 2. Results for the four carded and combed Upland bales are shown in Tables 3–6 for the carded cottons and in Tables 3a–6a for the combed cottons. All other test lots were carded only.

SUMMARY COMMENTS ON COMBING

For evaluating the combed yarns, a N_e 30 yarn size was used. This count is on the high side of those usually spun commercially on the rotor spinning system, but is frequently produced on the ring spinning system. Therefore, this count should provide a good indicator of the improvements that may be obtained by combing.

Major impacts on combing of yarn properties are the following:

- The count-strength-product (CSP) by the skein method increased significantly for ring-spun yarns, but only marginally for rotor-spun yarns (Figure 2). The same conclusion applies to single-yarn strength as measured by the Uster Tensorapid (Figure 3).

- The non-uniformity (CV%) of rotor-spun yarns was unaffected by combing for rotor yarns, but it was greatly reduced for the ring-spun yarns (Figure 4). It is noteworthy that combing was needed to make the non-uniformity measurements for ring-spun yarns compare favorably with those for rotor-spun yarns.

- Neps were decreased in number for both types of spinning; the impact of combing was huge for ring spinning, but considerably less for rotor yarns (Figure 5).

The conclusion is that combing may be beneficial to some mills producing ring-spun yarns, but is of dubious value for those using rotor-spinning technology. These results corroborate the data reported previously for the 1993, 1994 and 1995 crops.

FIGURE 1: OUTLINE OF MECHANICAL PROCESSES

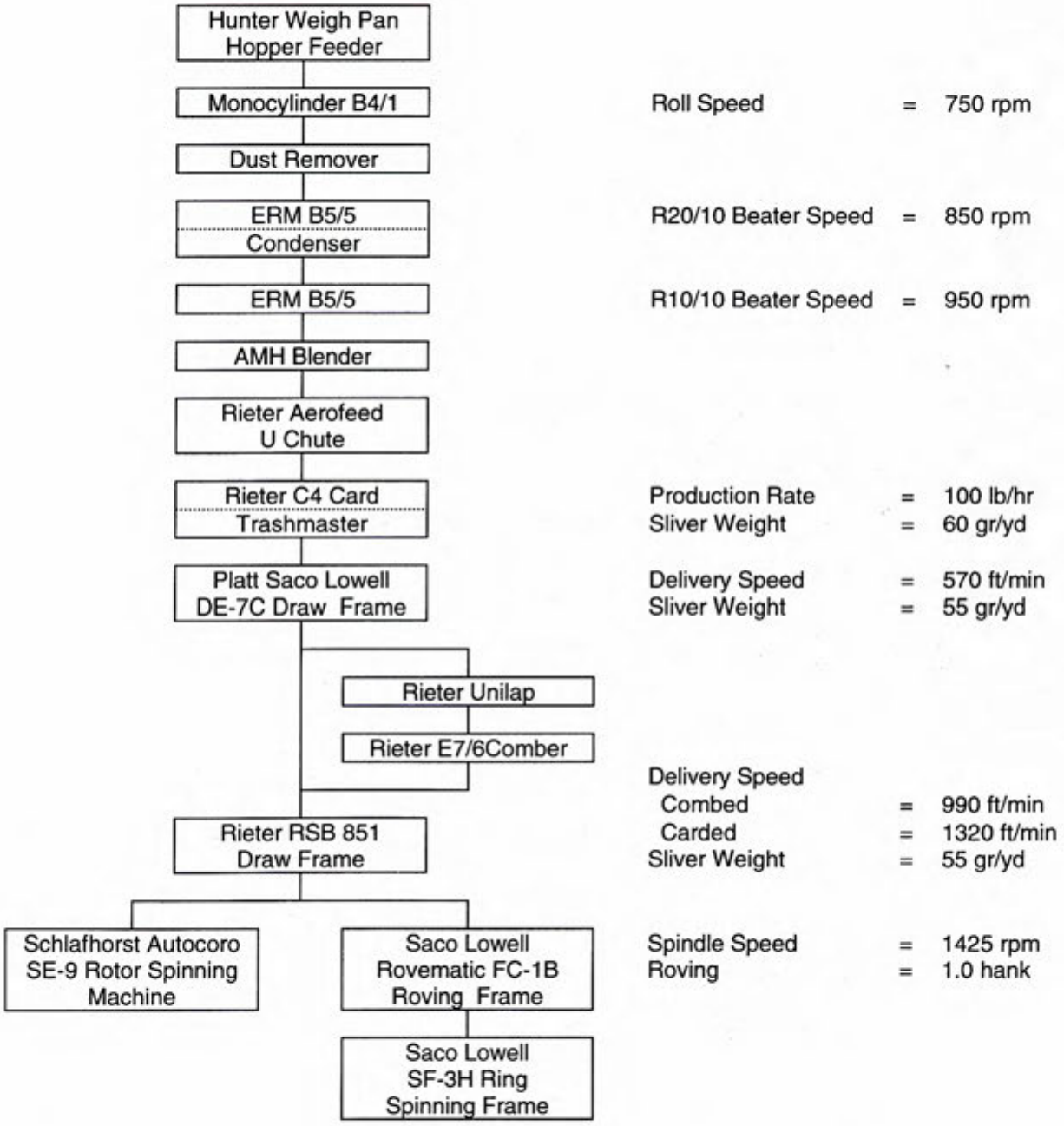

TABLE 1

SPINNING SPECIFICATIONS

(a) ROTOR SPINNING

Sliver	55 gr./yd Finisher Drawframe		
Machine	Schlafhorst Autocoro SE-9		
Nominal Yarn Size	10	22	30
Rotor Type	T 231 D		
Rotor Speed (rpm)	100,000		
Opening Roller Type	B 174 DN		
Opening Roller Speed (rpm)	7,500		
Draft (approximate)	66	145	198
Twist Multiplier	4.80	4.80	4.80
Yarn Speed (yd/min.)	167.8	123.6	105.5
Navel	4-grooved Ceramic (KN4) + 1.5		
Torque Stop	TS 37		

(b) RING SPINNING

Roving Frame	Saco Lowell FC-1B
Flyer Speed (rpm)	1425
Roving	1.0 hank
Ring spinning Frame	Saco Lowell SF-3H
Spindle Speed (rpm)	10,000
Ring Diameter (in)	2
Twist Miltiplier	4.00

Figure 2: Count-Strength-Product for Texas Cottons, Carded and Combed
Yarn Size = N_e 30/1

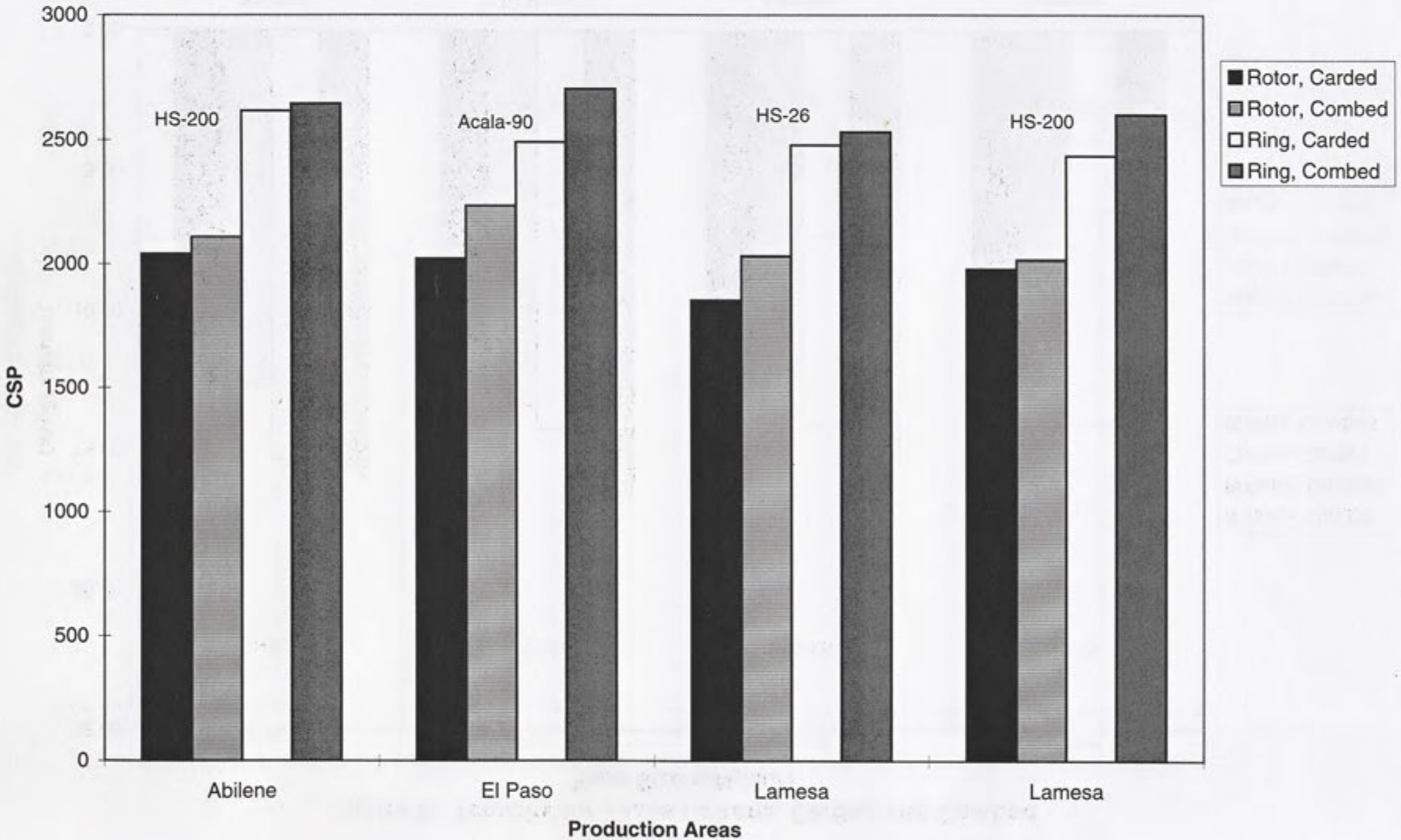

Figure 3: Tenacity for Texas Cottons, Carded and Combed
Yarn Size = N_e 30/1

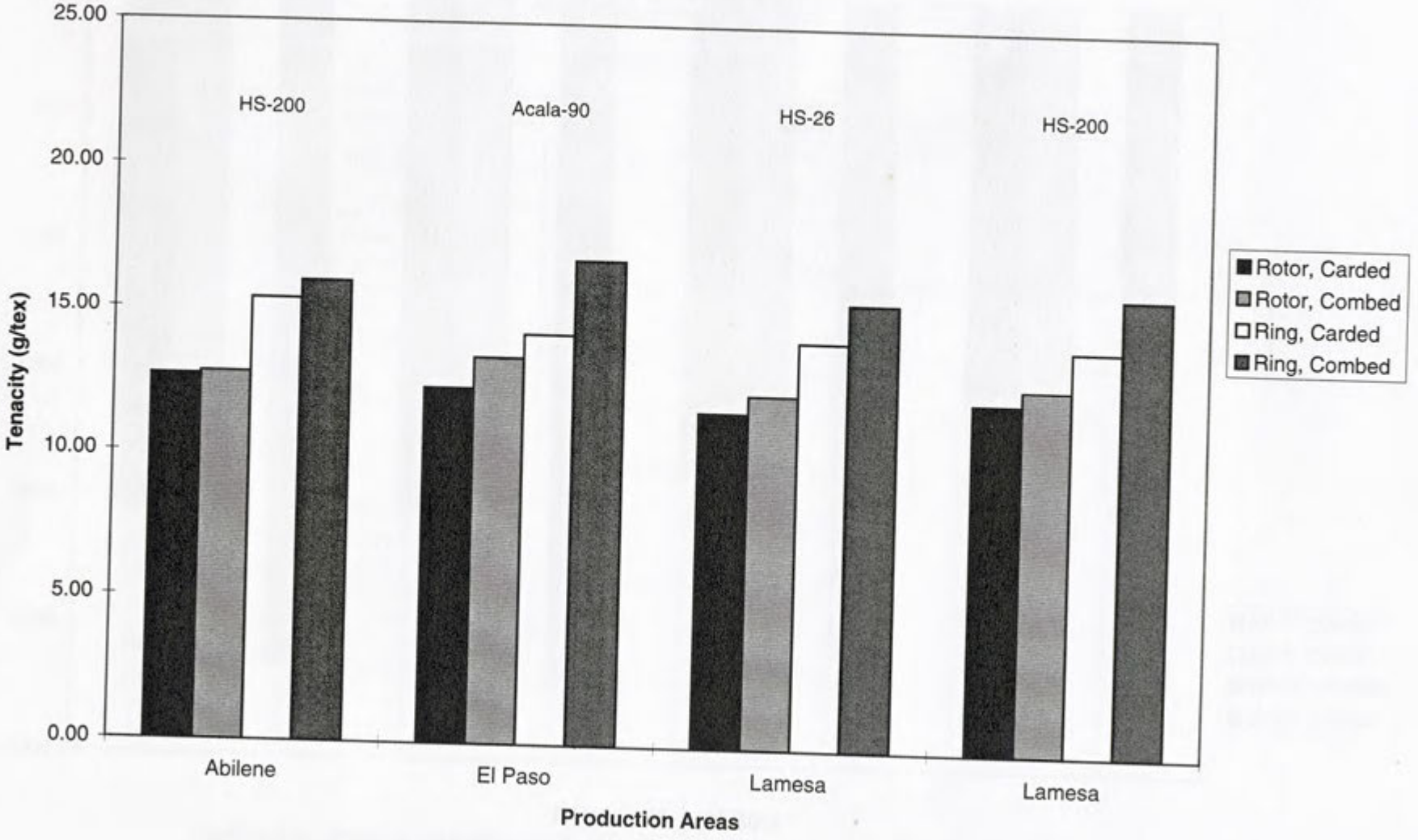

Figure 4: Non-Uniformity for Texas Cottons, Carded and Combed
Yarn Size = N_e 30/1

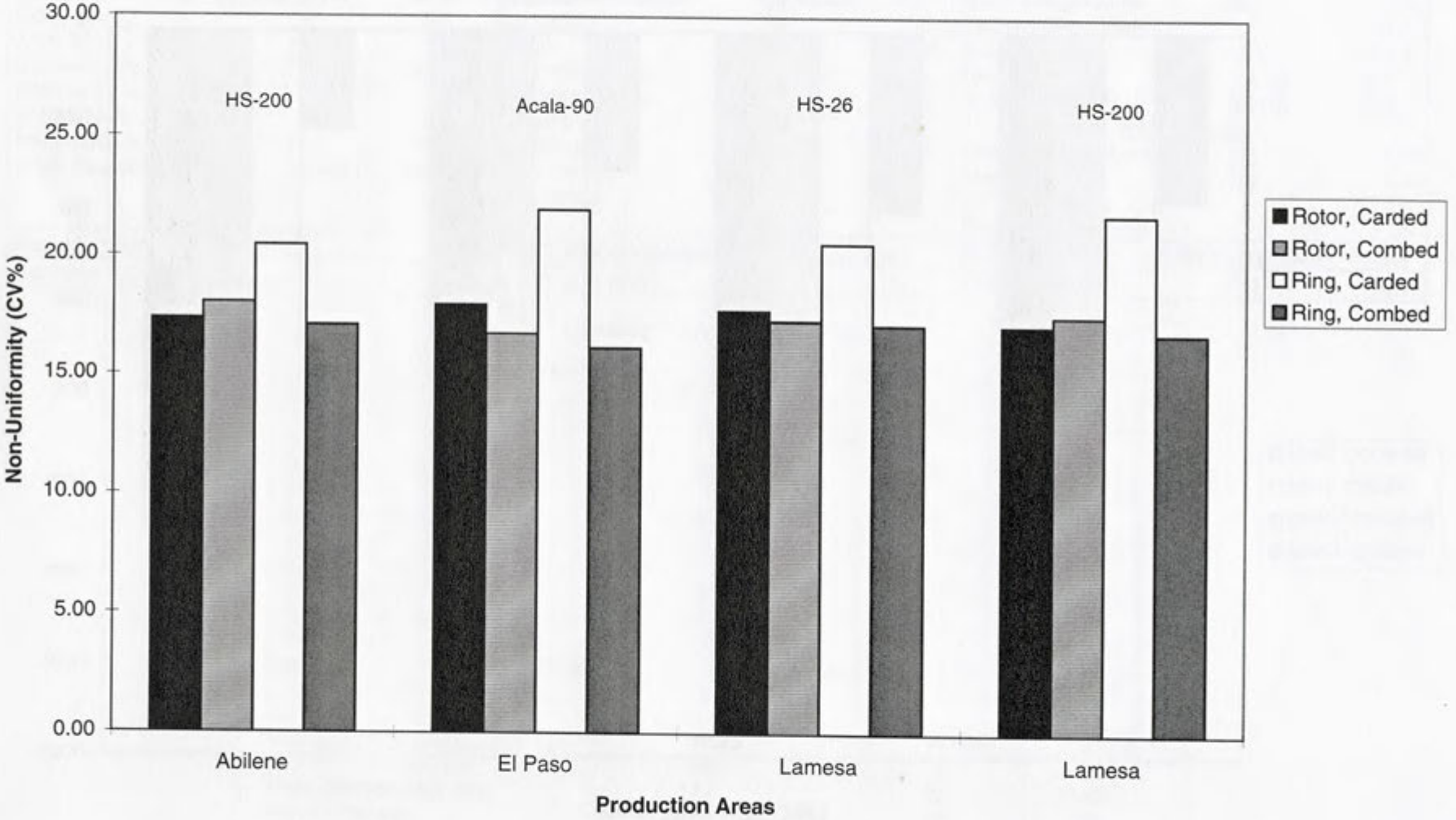

Figure 5: Neps for Texas Cottons,Carded and Combed
Yarn Size = N_e 30/1

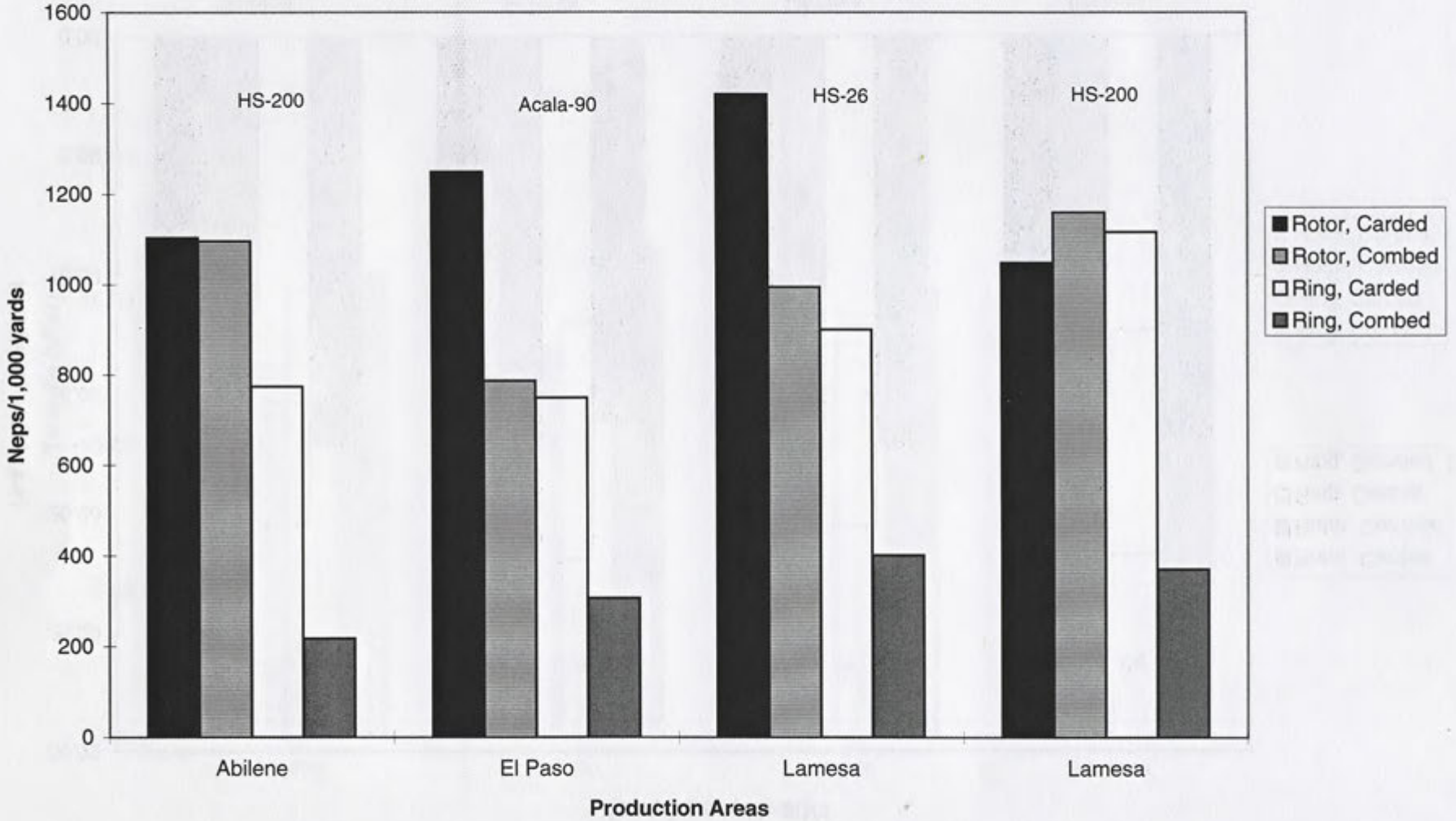

TABLE 2 LOT NUMBER 2792 VARIETY PIMA-S6 GIN Failens Co-op PRODUCTION AREA El Paso, Texas

FIBER PROPERTIES

Individual Instrument Data			HVI Data			Uster AFIS		
						Upper Quartile Length (w)	(in)	1.36
Stelometer Strength	(g/tex)	34.6	1/8" Gauge Strength	(g/tex)	42.1	Mean Length	(in)	1.13
Elongation	(%)	6.2	Elongation	(%)	7.8	Percent Short Fibers		4.6
2.5% Span Length	(in)	1.34	Length	(in)	1.35	Diameter	(µm)	11.4
Uniformity Ratio	(%)	51.0	Uniformity Index		87.1	Neps	(no./g)	181
Micronaire Index		4.3	Micronaire Index		4.5	Total Trash	(no./g)	775
Shirley Non-Lint Content		2.70	Reflectance	(Rd)	65.2	Peyer AL 101		
F/MT Maturity	(%)	79.2	Yellowness	(+b)	12.9	Upper Quartile Length (w)	(in)	1.29
F/MT Fineness	(mtex)	194	Color Grade		3	Mean Length	(in)	1.12
			Leaf Grade		4	CV% of Mean		21.5
						Percent Short Fibers		.8
Reducing Substances	(%)	.202	Card Stickiness Rating		not sticky	FCT Stickiness	sticky points/gram	1.9
Opening, Carding Waste	(%)	4.6	Combing Waste	(%)	12.1	Total Waste	(%)	16.1

COMBED YARN PROPERTIES

Spinning Machine	Rotor Spinning	Ring Spinning	
Nominal Yarn Number (N_e)	30/1	30/1	80/1
Skein Test :			
Yarn Number (N_e)	29.7	30.3	78.8
CV% of Count	1.05	.35	.87
Count-Strength-Product	2783	3912	3048
CV% of CSP	3.84	2.53	3.91
Single-Yarn Test:			
Tenacity (g/tex)	16.71	22.73	18.80
Mean Strength (g)	338	451	144
CV% of Break	7.6	7.4	12.0
Elongation (%)	6.62	7.33	5.87
CV% of Elongation	6.6	6.5	9.0
Uster Evenness Test:			
Non-Uniformity (CV%)	15.75	13.09	21.18
Thin Places/1,000 yds	46	6	628
Thick Places/1,000 yds	172	22	749
Neps/1,000 yds	378	38	508
Hairiness	3.70	3.39	2.57
ASTM Yarn Grade	A	A	A

TABLE 3 LOT NUMBER 2793 VARIETY Acala-90 GIN Failens Co-op PRODUCTION AREA El Paso, Texas

FIBER PROPERTIES

Individual Instrument Data			HVI Data			Uster AFIS		
						Upper Quartile Length (w)	(in)	1.09
Stelometer Strength	(g/tex)	26.6	1/8" Gauge Strength	(g/tex)	29.9	Mean Length	(in)	.88
Elongation	(%)	6.1	Elongation	(%)	6.4	Percent Short Fibers		11.3
2.5% Span Length	(in)	1.06	Length	(in)	1.09	Diameter	(µm)	13.7
Uniformity Ratio	(%)	45.0	Uniformity Index		80.9	Neps	(no./g)	306
Micronaire Index		4.4	Micronaire Index		4.4	Total Trash	(no./g)	300
Shirley Non-Lint Content		1.82	Reflectance	(Rd)	80.1	Peyer AL 101		
F/MT Maturity	(%)	76.4	Yellowness	(+b)	8.6	Upper Quartile Length (w)	(in)	1.10
F/MT Fineness	(mtex)	208	Color Grade		21-1	Mean Length	(in)	.88
			Leaf Grade		1	CV% of Mean		33.0
						Percent Short Fibers		12.7
Reducing Substances	(%)	.352	Card Stickiness Rating		not sticky	FCT Stickiness	sticky points/gram	1.4
Opening, Carding Waste	(%)	6.1						

CARDED YARN PROPERTIES

Spinning Machine	Rotor Spinning			Ring Spinning		
Nominal Yarn Number (N_e)	10/1	22/1	30/1	16/1	22/1	30/1
Skein Test:						
Yarn Number (N_e)	10.2	22.1	30.1	16.3	22.4	30.4
CV% of Count	.68	.32	.74	.57	.68	.94
Count-Strength-Product	2557	2174	2022	2627	2545	2491
CV% of CSP	1.96	2.28	3.61	2.07	2.80	2.48
Single-Yarn Test:						
Tenacity (g/tex)	14.72	13.15	12.33	15.55	14.99	14.24
Mean Strength (g)	872	358	245	575	402	282
CV% of Break	6.7	7.5	9.4	8.1	9.0	11.6
Elongation (%)	7.07	6.25	6.16	6.77	6.68	6.03
CV% of Elongation	5.8	6.0	7.6	6.8	6.4	9.9
Uster Evenness Test:						
Non-Uniformity (CV%)	13.04	15.47	17.93	17.21	19.49	21.93
Thin Places/1,000 yds	2	32	178	69	194	467
Thick Places/1,000 yds	28	165	405	360	802	1394
Neps/1,000 yds	18	244	1249	105	242	749
Hairiness	4.25	4.05	4.13	5.87	5.33	4.76
ASTM Yarn Grade	B+	C+	B	C	C	D+

TABLE 3a LOT NUMBER 2793 VARIETY Acala-90 GIN Failens Co-op PRODUCTION AREA El Paso, Texas

FIBER PROPERTIES

Individual Instrument Data			HVI Data			Uster AFIS		
						Upper Quartile Length (w)	(in)	1.09
Stelometer Strength	(g/tex)	26.6	1/8" Gauge Strength	(g/tex)	29.9	Mean Length	(in)	.88
Elongation	(%)	6.1	Elongation	(%)	6.4	Percent Short Fibers		11.3
2.5% Span Length	(in)	1.06	Length	(in)	1.09	Diameter	(µm)	13.7
Uniformity Ratio	(%)	45.0	Uniformity Index		80.9	Neps	(no./g)	306
Micronaire Index		4.4	Micronaire Index		4.4	Total Trash	(no./g)	300
Shirley Non-Lint Content		1.82	Reflectance	(Rd)	80.1	Peyer AL 101		
F/MT Maturity	(%)	76.4	Yellowness	(+b)	8.6	Upper Quartile Length (w)	(in)	1.10
F/MT Fineness	(mtex)	208	Color Grade		21-1	Mean Length	(in)	.88
			Leaf Grade		1	CV% of Mean		33.0
						Percent Short Fibers		12.7
Reducing Substances	(%)	.352	Card Stickiness Rating		not sticky	FCT Stickiness	sticky points/gram	1.4
Opening, Carding Waste	(%)	6.1	Combing Waste	(%)	14.2	Total Waste	(%)	19.4

COMBED YARN PROPERTIES

Spinning Machine	Rotor Spinning	Ring Spinning
Nominal Yarn Number (N_e)	30/1	30/1
Skein Test :		
Yarn Number (N_e)	30.5	29.9
CV% of Count	.66	.65
Count-Strength-Product	2234	2704
CV% of CSP	1.95	2.79
Single-Yarn Test:		
Tenacity (g/tex)	13.41	16.84
Mean Strength (g)	264	339
CV% of Break	7.7	7.9
Elongation (%)	6.67	7.23
CV% of Elongation	8.2	7.2
Uster Evenness Test:		
Non-Uniformity (CV%)	16.72	16.14
Thin Places/1,000 yds	102	32
Thick Places/1,000 yds	292	280
Neps/1,000 yds	787	306
Hairiness	3.57	3.85
ASTM Yarn Grade	B	C+

TABLE 4 LOT NUMBER 2810 VARIETY HS-200 GIN Farmers Co-op Society PRODUCTION AREA Abilene, Texas

FIBER PROPERTIES

Individual Instrument Data			HVI Data			Uster AFIS		
						Upper Quartile Length (w)	(in)	1.17
Stelometer Strength	(g/tex)	26.1	1/8" Gauge Strength	(g/tex)	30.8	Mean Length	(in)	.97
Elongation	(%)	7.7	Elongation	(%)	6.8	Percent Short Fibers		7.5
2.5% Span Length	(in)	1.10	Length	(in)	1.16	Diameter	(µm)	12.9
Uniformity Ratio	(%)	47.0	Uniformity Index		83.2	Neps	(no./g)	396
Micronaire Index		4.0	Micronaire Index		3.9	Total Trash	(no./g)	471
Shirley Non-Lint Content		2.65	Reflectance	(Rd)	77.3	Peyer AL 101		
F/MT Maturity	(%)	70.5	Yellowness	(+b)	8.7	Upper Quartile Length (w)	(in)	1.12
F/MT Fineness	(mtex)	199	Color Grade		31-1	Mean Length	(in)	.92
			Leaf Grade		5	CV% of Mean		29.7
						Percent Short Fibers		8.2
Reducing Substances	(%)	.291	Card Stickiness Rating		not sticky	FCT Stickiness	sticky points/gram	3.0
Opening, Carding Waste	(%)	6.3						

CARDED YARN PROPERTIES

Spinning Machine	Rotor Spinning			Ring Spinning		
Nominal Yarn Number (N_e)	10/1	22/1	30/1	16/1	22/1	30/1
Skein Test:						
Yarn Number (N_e)	10.2	22.3	30.4	16.2	22.2	29.8
CV% of Count	.50	.34	.71	.51	.66	.80
Count-Strength-Product	2586	2247	2041	2731	2626	2617
CV% of CSP	1.44	2.33	2.03	1.72	2.65	2.65
Single-Yarn Test:						
Tenacity (g/tex)	14.59	13.17	12.67	16.69	15.65	15.36
Mean Strength (g)	861	356	251	620	425	310
CV% of Break	6.0	7.6	7.8	9.1	9.0	10.4
Elongation (%)	7.73	6.82	6.92	7.93	7.58	7.27
CV% of Elongation	6.3	7.3	8.4	7.2	6.4	8.5
Uster Evenness Test:						
Non-Uniformity (CV%)	12.44	14.97	17.34	16.06	17.97	20.44
Thin Places/1,000 yds	0	22	121	26	84	238
Thick Places/1,000 yds	21	132	342	235	536	1054
Neps/1,000 yds	20	222	1103	122	266	774
Hairiness	3.88	3.70	3.56	5.27	4.80	4.26
ASTM Yarn Grade	A	B	C+	C	C	C

TABLE 4a LOT NUMBER 2810 VARIETY HS-200 GIN Farmers Co-op Society PRODUCTION AREA Abilene, Texas

FIBER PROPERTIES

Individual Instrument Data			HVI Data			Uster AFIS		
						Upper Quartile Length (w)	(in)	1.17
Stelometer Strength	(g/tex)	26.1	1/8" Gauge Strength	(g/tex)	30.8	Mean Length	(in)	.97
Elongation	(%)	7.7	Elongation	(%)	6.8	Percent Short Fibers		7.5
2.5% Span Length	(in)	1.10	Length	(in)	1.16	Diameter	(µm)	12.9
Uniformity Ratio	(%)	47.0	Uniformity Index		83.2	Neps	(no./g)	396
Micronaire Index		4.0	Micronaire Index		3.9	Total Trash	(no./g)	471
Shirley Non-Lint Content		2.65	Reflectance	(Rd)	77.3	Peyer AL 101		
F/MT Maturity	(%)	70.5	Yellowness	(+b)	8.7	Upper Quartile Length (w)	(in)	1.12
F/MT Fineness	(mtex)	199	Color Grade		31-1	Mean Length	(in)	.92
			Leaf Grade		5	CV% of Mean		29.7
						Percent Short Fibers		8.2
Reducing Substances	(%)	.291	Card Stickiness Rating		not sticky	FCT Stickiness	sticky points/gram	3.0
Opening, Carding Waste	(%)	6.3	Combing Waste	(%)	11.5	Total Waste	(%)	17.0

COMBED YARN PROPERTIES

Spinning Machine	Rotor Spinning	Ring Spinning
Nominal Yarn Number (N_e)	30/1	30/1
Skein Test :		
Yarn Number (N_e)	30.8	29.9
CV% of Count	.89	.96
Count-Strength-Product	2109	2645
CV% of CSP	2.24	1.96
Single-Yarn Test:		
Tenacity (g/tex)	12.77	15.98
Mean Strength (g)	249	322
CV% of Break	8.4	10.4
Elongation (%)	6.08	6.15
CV% of Elongation	8.7	8.1
Uster Evenness Test:		
Non-Uniformity (CV%)	18.02	17.08
Thin Places/1,000 yds	206	84
Thick Places/1,000 yds	435	315
Neps/1,000 yds	1096	217
Hairiness	3.87	4.26
ASTM Yarn Grade	B	C+

TABLE 5 LOT NUMBER 2815 VARIETY HS-26 GIN Flower Grove Co-op PRODUCTION AREA Lamesa, Texas

FIBER PROPERTIES

Individual Instrument Data			HVI Data			Uster AFIS		
						Upper Quartile Length (w)	(in)	1.12
Stelometer Strength	(g/tex)	23.6	1/8" Gauge Strength	(g/tex)	27.7	Mean Length	(in)	.94
Elongation	(%)	8.2	Elongation	(%)	6.9	Percent Short Fibers		7.9
2.5% Span Length	(in)	1.06	Length	(in)	1.11	Diameter	(µm)	13.4
Uniformity Ratio	(%)	46.0	Uniformity Index		83.0	Neps	(no./g)	415
Micronaire Index		3.6	Micronaire Index		3.7	Total Trash	(no./g)	622
Shirley Non-Lint Content		3.10	Reflectance	(Rd)	78.7	Peyer AL 101		
F/MT Maturity	(%)	63.4	Yellowness	(+b)	8.7	Upper Quartile Length (w)	(in)	1.05
F/MT Fineness	(mtex)	202	Color Grade		21-2	Mean Length	(in)	.85
			Leaf Grade		2	CV% of Mean		31.8
						Percent Short Fibers		12.2
Reducing Substances	(%)	.539	Card Stickiness Rating		not sticky	FCT Stickiness	sticky points\gram	3.0
Opening, Carding Waste	(%)	6.9						

CARDED YARN PROPERTIES

Spinning Machine	Rotor Spinning			Ring Spinning		
Nominal Yarn Number (N_e)	10/1	22/1	30/1	16/1	22/1	30/1
Skein Test:						
Yarn Number (N_e)	10.2	22.3	30.4	16.1	22.2	30.1
CV% of Count	.30	.44	.53	.80	.91	1.37
Count-Strength-Product	2452	2083	1854	2582	2483	2479
CV% of CSP	1.90	1.25	3.63	2.69	2.19	4.20
Single-Yarn Test:						
Tenacity (g/tex)	13.83	12.47	11.64	15.34	14.72	14.14
Mean Strength (g)	817	337	231	574	399	283
CV% of Break	5.9	6.2	8.6	7.2	9.2	11.0
Elongation (%)	8.07	7.26	7.18	8.55	8.18	7.67
CV% of Elongation	6.7	6.9	8.5	6.4	6.7	9.2
Uster Evenness Test:						
Non-Uniformity (CV%)	13.04	15.50	17.72	16.06	17.88	20.53
Thin Places/1,000 yds	2	31	152	31	88	280
Thick Places/1,000 yds	45	172	421	260	538	1049
Neps/1,000 yds	43	284	1420	172	307	900
Hairiness	4.01	3.78	3.81	5.38	4.93	4.42
ASTM Yarn Grade	B+	C	C+	D	D	C

TABLE 5a LOT NUMBER 2815 VARIETY HS-26 GIN Flower Grove Co-op PRODUCTION AREA Lamesa, Texas

FIBER PROPERTIES

Individual Instrument Data			HVI Data			Uster AFIS		
						Upper Quartile Length (w)	(in)	1.12
Stelometer Strength	(g/tex)	23.6	1/8" Gauge Strength	(g/tex)	27.7	Mean Length	(in)	.94
Elongation	(%)	8.2	Elongation	(%)	6.9	Percent Short Fibers		7.9
2.5% Span Length	(in)	1.06	Length	(in)	1.11	Diameter	(µm)	13.4
Uniformity Ratio	(%)	46.0	Uniformity Index		83.0	Neps	(no./g)	415
Micronaire Index		3.6	Micronaire Index		3.7	Total Trash	(no./g)	622
Shirley Non-Lint Content		3.10	Reflectance	(Rd)	78.7	Peyer AL 101		
F/MT Maturity	(%)	63.4	Yellowness	(+b)	8.7	Upper Quartile Length (w)	(in)	1.05
F/MT Fineness	(mtex)	202	Color Grade		21-2	Mean Length	(in)	.85
			Leaf Grade		2	CV% of Mean		31.8
						Percent Short Fibers		12.2
Reducing Substances	(%)	.539	Card Stickiness Rating		not sticky	FCT Stickiness	sticky points/gram	3.0
Opening, Carding Waste	(%)	6.9	Combing Waste	(%)	11.5	Total Waste	(%)	17.6

COMBED YARN PROPERTIES

Spinning Machine	Rotor Spinning	Ring Spinning
Nominal Yarn Number (N_e)	30/1	30/1
Skein Test :		
Yarn Number (N_e)	30.5	30.0
CV% of Count	.97	1.02
Count-Strength-Product	2033	2532
CV% of CSP	4.26	2.54
Single-Yarn Test:		
Tenacity (g/tex)	12.27	15.50
Mean Strength (g)	242	311
CV% of Break	8.0	9.4
Elongation (%)	6.98	7.54
CV% of Elongation	7.4	7.6
Uster Evenness Test:		
Non-Uniformity (CV%)	17.30	17.12
Thin Places/1,000 yds	139	72
Thick Places/1,000 yds	342	382
Neps/1,000 yds	994	401
Hairiness	3.68	3.89
ASTM Yarn Grade	B	C+

TABLE 6 LOT NUMBER 2816 VARIETY HS-200 GIN Flower Grove Co-op PRODUCTION AREA Lamesa, Texas

FIBER PROPERTIES

Individual Instrument Data			HVI Data			Uster AFIS		
						Upper Quartile Length (w)	(in)	1.11
Stelometer Strength	(g/tex)	24.4	1/8" Gauge Strength	(g/tex)	28.7	Mean Length	(in)	.90
Elongation	(%)	7.2	Elongation	(%)	6.6	Percent Short Fibers		9.9
2.5% Span Length	(in)	1.08	Length	(in)	1.13	Diameter	(µm)	13.0
Uniformity Ratio	(%)	45.0	Uniformity Index		82.0	Neps	(no./g)	443
Micronaire Index		3.8	Micronaire Index		3.9	Total Trash	(no./g)	367
Shirley Non-Lint Content		2.72	Reflectance	(Rd)	78.1	Peyer AL 101		
F/MT Maturity	(%)	68.3	Yellowness	(+b)	9.1	Upper Quartile Length (w)	(in)	1.10
F/MT Fineness	(mtex)	202	Color Grade		21-4	Mean Length	(in)	.88
			Leaf Grade		2	CV% of Mean		33.3
						Percent Short Fibers		12.0
Reducing Substances	(%)	.352	Card Stickiness Rating		not sticky	FCT Stickiness	sticky points/gram	3.9
Opening, Carding Waste	(%)	6.6						

CARDED YARN PROPERTIES

Spinning Machine	Rotor Spinning			Ring Spinning		
Nominal Yarn Number (N_e)	10/1	22/1	30/1	16/1	22/1	30/1
Skein Test:						
Yarn Number (N_e)	10.2	22.4	30.6	16.2	22.3	30.3
CV% of Count	.66	.69	.59	.40	.79	.70
Count-Strength-Product	2461	2098	1980	2580	2426	2436
CV% of CSP	1.37	2.09	2.54	1.78	1.77	2.47
Single-Yarn Test:						
Tenacity (g/tex)	13.97	12.62	12.14	15.65	14.49	14.02
Mean Strength (g)	824	339	239	580	391	279
CV% of Break	5.7	7.4	8.5	7.4	8.4	10.0
Elongation (%)	7.65	6.76	6.68	7.69	7.28	6.86
CV% of Elongation	6.9	7.4	8.0	6.6	6.9	8.8
Uster Evenness Test:						
Non-Uniformity (CV%)	12.86	15.02	17.09	16.98	18.99	21.76
Thin Places/1,000 yds	6	22	113	40	134	398
Thick Places/1,000 yds	72	134	308	371	778	1403
Neps/1,000 yds	100	257	1048	207	397	1116
Hairiness	3.96	3.76	3.52	5.40	5.08	4.47
ASTM Yarn Grade	A	C+	B	D	D	D

TABLE 6a LOT NUMBER 2816 VARIETY HS-200 GIN Flower Grove Co-op PRODUCTION AREA Lamesa, Texas

FIBER PROPERTIES

Individual Instrument Data			HVI Data			Uster AFIS		
						Upper Quartile Length (w)	(in)	1.11
Stelometer Strength	(g/tex)	24.4	1/8" Gauge Strength	(g/tex)	28.7	Mean Length	(in)	.90
Elongation	(%)	7.2	Elongation	(%)	6.6	Percent Short Fibers		9.9
2.5% Span Length	(in)	1.08	Length	(in)	1.13	Diameter	(µm)	13.0
Uniformity Ratio	(%)	45.0	Uniformity Index		82.0	Neps	(no./g)	443
Micronaire Index		3.8	Micronaire Index		3.9	Total Trash	(no./g)	367
Shirley Non-Lint Content		2.72	Reflectance	(Rd)	78.1	Peyer AL 101		
F/MT Maturity	(%)	68.3	Yellowness	(+b)	9.1	Upper Quartile Length (w)	(in)	1.10
F/MT Fineness	(mtex)	202	Color Grade		21-4	Mean Length	(in)	.88
			Leaf Grade		2	CV% of Mean		33.3
						Percent Short Fibers		12.0
Reducing Substances	(%)	.352	Card Stickiness Rating		not sticky	FCT Stickiness	sticky points/gram	3.9
Opening, Carding Waste	(%)	6.6	Combing Waste	(%)	14.0	Total Waste	(%)	19.6

COMBED YARN PROPERTIES

Spinning Machine	Rotor Spinning	Ring Spinning
Nominal Yarn Number (N_e)	30/1	30/1
Skein Test :		
Yarn Number (N_e)	30.8	30.3
CV% of Count	.68	1.55
Count-Strength-Product	2018	2601
CV% of CSP	4.35	1.60
Single-Yarn Test:		
Tenacity (g/tex)	12.64	15.87
Mean Strength (g)	247	316
CV% of Break	7.4	8.6
Elongation (%)	6.71	7.00
CV% of Elongation	7.0	8.3
Uster Evenness Test:		
Non-Uniformity (CV%)	17.49	16.78
Thin Places/1,000 yds	148	52
Thick Places/1,000 yds	383	343
Neps/1,000 yds	1159	370
Hairiness	3.76	3.97
ASTM Yarn Grade	B	B

TABLE 7 LOT NUMBER 2788 VARIETY DPL-51 GIN La Feria Co-op PRODUCTION AREA Harlingen, Texas

FIBER PROPERTIES

Individual Instrument Data			HVI Data			Uster AFIS		
						Upper Quartile Length (w)	(in)	1.11
Stelometer Strength	(g/tex)	22.4	1/8" Gauge Strength	(g/tex)	26.8	Mean Length	(in)	.92
Elongation	(%)	5.6	Elongation	(%)	5.9	Percent Short Fibers		9.0
2.5% Span Length	(in)	1.06	Length	(in)	1.08	Diameter	(µm)	14.5
Uniformity Ratio	(%)	45.0	Uniformity Index		83.0	Neps	(no./g)	287
Micronaire Index		4.8	Micronaire Index		4.9	Total Trash	(no./g)	199
Shirley Non-Lint Content		1.48	Reflectance	(Rd)	74.9	Peyer AL 101		
F/MT Maturity	(%)	81.6	Yellowness	(+b)	8.4	Upper Quartile Length (w)	(in)	1.09
F/MT Fineness	(mtex)	222	Color Grade		41-3	Mean Length	(in)	.88
			Leaf Grade		2	CV% of Mean		31.2
						Percent Short Fibers		11.3
Reducing Substances	(%)	.212	Card Stickiness Rating		not sticky	FCT Stickiness	sticky points/gram	.4
Opening, Carding Waste	(%)	5.4						

CARDED YARN PROPERTIES

Spinning Machine	Rotor Spinning			Ring Spinning		
Nominal Yarn Number (N_e)	10/1	22/1	30/1	16/1	22/1	30/1
Skein Test:						
Yarn Number (N_e)	10.0	22.1	29.5	16.3	22.2	29.7
CV% of Count	.28	.42	.52	1.21	.34	.89
Count-Strength-Product	2276	1924	1703	2406	2249	2089
CV% of CSP	2.25	3.47	1.13	3.48	2.49	3.31
Single-Yarn Test:						
Tenacity (g/tex)	12.94	11.82	10.54	13.49	13.16	13.07
Mean Strength (g)	778	322	215	500	357	265
CV% of Break	6.2	9.3	10.4	8.6	10.3	9.3
Elongation (%)	6.46	5.97	5.37	6.67	6.06	5.92
CV% of Elongation	6.5	8.6	10.6	8.0	7.8	6.6
Uster Evenness Test:						
Non-Uniformity (CV%)	13.25	15.68	17.93	17.96	19.75	22.47
Thin Places/1,000 yds	0	37	183	80	197	536
Thick Places/1,000 yds	26	179	386	494	880	1544
Neps/1,000 yds	32	309	1532	168	320	976
Hairiness	4.18	3.97	3.88	5.62	5.16	4.46
ASTM Yarn Grade	A	B	B	D	C	C

TABLE 8 LOT NUMBER 2789 VARIETY Stoneville ST 132 GIN Kleberg Co-op PRODUCTION AREA Corpus Christi, Texas

FIBER PROPERTIES

Individual Instrument Data			HVI Data			Uster AFIS		
						Upper Quartile Length (w)	(in)	1.05
Stelometer Strength	(g/tex)	23.9	1/8" Gauge Strength	(g/tex)	26.4	Mean Length	(in)	.88
Elongation	(%)	5.8	Elongation	(%)	5.1	Percent Short Fibers		8.6
2.5% Span Length	(in)	1.05	Length	(in)	1.03	Diameter	(µm)	13.7
Uniformity Ratio	(%)	48.0	Uniformity Index		81.2	Neps	(no./g)	311
Micronaire Index		4.5	Micronaire Index		4.6	Total Trash	(no./g)	306
Shirley Non-Lint Content		2.03	Reflectance	(Rd)	73.8	Peyer AL 101		
F/MT Maturity	(%)	76.6	Yellowness	(+b)	9.0	Upper Quartile Length (w)	(in)	1.02
F/MT Fineness	(mtex)	215	Color Grade		31-4	Mean Length	(in)	.84
			Leaf Grade		1	CV% of Mean		30.5
						Percent Short Fibers		11.1
Reducing Substances	(%)	.352	Card Stickiness Rating		not sticky	FCT Stickiness	sticky points/gram	.5
Opening, Carding Waste	(%)	5.4						

CARDED YARN PROPERTIES

Spinning Machine	Rotor Spinning			Ring Spinning		
Nominal Yarn Number (N_e)	10/1	22/1	30/1	16/1	22/1	30/1
Skein Test:						
Yarn Number (N_e)	10.2	22.2	30.1	16.3	22.5	30.3
CV% of Count	.36	.50	.71	.45	.64	.44
Count-Strength-Product	2419	2112	1884	2519	2448	2428
CV% of CSP	1.87	3.04	2.22	1.82	3.14	2.96
Single-Yarn Test:						
Tenacity (g/tex)	13.95	12.87	11.86	15.75	14.96	14.32
Mean Strength (g)	820	350	238	583	401	284
CV% of Break	5.7	8.3	8.6	8.3	9.2	9.8
Elongation (%)	6.08	5.54	5.17	6.25	5.99	5.59
CV% of Elongation	5.8	7.5	7.6	7.7	6.4	8.0
Uster Evenness Test:						
Non-Uniformity (CV%)	13.14	15.90	18.31	16.30	18.23	20.60
Thin Places/1,000 yds	2	45	215	36	101	282
Thick Places/1,000 yds	35	198	448	253	566	1053
Neps/1,000 yds	32	305	1310	148	278	649
Hairiness	4.36	4.12	3.80	5.70	5.14	4.62
ASTM Yarn Grade	B+	C+	B	C	C	C

TABLE 9 LOT NUMBER 2790 VARIETY DPL-50 GIN La Feria Co-op PRODUCTION AREA Harlingen, Texas

FIBER PROPERTIES

Individual Instrument Data			HVI Data			Uster AFIS		
						Upper Quartile Length (w)	(in)	1.09
Stelometer Strength	(g/tex)	23.0	1/8" Gauge Strength	(g/tex)	26.0	Mean Length	(in)	.90
Elongation	(%)	5.6	Elongation	(%)	5.6	Percent Short Fibers		9.5
2.5% Span Length	(in)	1.04	Length	(in)	1.08	Diameter	(µm)	15.2
Uniformity Ratio	(%)	44.0	Uniformity Index		81.4	Neps	(no./g)	309
Micronaire Index		4.9	Micronaire Index		4.9	Total Trash	(no./g)	306
Shirley Non-Lint Content		1.43	Reflectance	(Rd)	77.4	Peyer AL 101		
F/MT Maturity	(%)	78.8	Yellowness	(+b)	8.7	Upper Quartile Length (w)	(in)	1.05
F/MT Fineness	(mtex)	231	Color Grade		31-1	Mean Length	(in)	.84
			Leaf Grade		3	CV% of Mean		33.9
						Percent Short Fibers		15.1
Reducing Substances	(%)	.347	Card Stickiness Rating		not sticky	FCT Stickiness	sticky points/gram	.5
Opening, Carding Waste	(%)	5.6						

CARDED YARN PROPERTIES

Spinning Machine	Rotor Spinning			Ring Spinning		
Nominal Yarn Number (N_e)	10/1	22/1	30/1	16/1	22/1	30/1
Skein Test:						
Yarn Number (N_e)	10.1	22.1	30.2	16.4	22.6	30.7
CV% of Count	.40	.35	.43	.52	.67	.77
Count-Strength-Product	2279	1920	1751	2361	2171	2105
CV% of CSP	2.30	3.01	2.21	1.83	3.10	3.34
Single-Yarn Test:						
Tenacity (g/tex)	13.09	11.73	11.03	13.78	13.23	12.88
Mean Strength (g)	781	320	220	508	352	252
CV% of Break	5.9	7.6	9.9	10.2	10.7	10.8
Elongation (%)	6.33	5.62	5.37	6.24	6.10	5.66
CV% of Elongation	6.1	7.4	8.0	8.1	7.9	7.9
Uster Evenness Test:						
Non-Uniformity (CV%)	13.52	16.09	18.33	18.54	20.89	23.56
Thin Places/1,000 yds	2	44	224	130	315	741
Thick Places/1,000 yds	40	226	435	578	1174	1870
Neps/1,000 yds	32	385	1434	253	520	1266
Hairiness	4.34	4.15	4.08	5.48	5.50	4.89
ASTM Yarn Grade	B+	B	B	C	D+	C

TABLE 10 LOT NUMBER 2791 VARIETY DPL-50 GIN Kleberg Co-op PRODUCTION AREA Corpus Christi, Texas

FIBER PROPERTIES

Individual Instrument Data			HVI Data			Uster AFIS		
						Upper Quartile Length (w)	(in)	1.05
Stelometer Strength	(g/tex)	24.7	1/8" Gauge Strength	(g/tex)	26.4	Mean Length	(in)	.89
Elongation	(%)	5.2	Elongation	(%)	5.1	Percent Short Fibers		8.3
2.5% Span Length	(in)	1.03	Length	(in)	1.04	Diameter	(µm)	14.6
Uniformity Ratio	(%)	48.0	Uniformity Index		82.0	Neps	(no./g)	262
Micronaire Index		4.8	Micronaire Index		4.9	Total Trash	(no./g)	402
Shirley Non-Lint Content		2.96	Reflectance	(Rd)	72.3	Peyer AL 101		
F/MT Maturity	(%)	78.4	Yellowness	(+b)	9.2	Upper Quartile Length (w)	(in)	1.03
F/MT Fineness	(mtex)	233	Color Grade		41-3	Mean Length	(in)	.84
			Leaf Grade		4	CV% of Mean		31.3
						Percent Short Fibers		12.6
Reducing Substances	(%)	.381	Card Stickiness Rating		not sticky	FCT Stickiness	sticky points/gram	1.7
Opening, Carding Waste	(%)	8.2						

CARDED YARN PROPERTIES

Spinning Machine	Rotor Spinning			Ring Spinning		
Nominal Yarn Number (N_e)	10/1	22/1	30/1	16/1	22/1	30/1
Skein Test:						
Yarn Number (N_e)	10.2	22.0	30.4	16.2	22.3	30.4
CV% of Count	.40	.43	.39	.75	.75	.82
Count-Strength-Product	2317	2026	1795	2460	2353	2265
CV% of CSP	1.30	2.08	2.11	1.54	1.94	2.50
Single-Yarn Test:						
Tenacity (g/tex)	13.33	11.95	11.38	14.62	14.45	13.78
Mean Strength (g)	784	327	224	544	390	273
CV% of Break	6.3	7.6	8.4	8.5	9.5	10.3
Elongation (%)	6.13	5.48	5.33	5.91	5.92	5.53
CV% of Elongation	6.2	7.3	8.7	8.2	7.0	10.4
Uster Evenness Test:						
Non-Uniformity (CV%)	13.36	16.52	18.96	16.88	18.88	21.29
Thin Places/1,000 yds	2	66	290	49	141	368
Thick Places/1,000 yds	34	282	596	308	675	1178
Neps/1,000 yds	38	466	1803	188	354	785
Hairiness	4.41	4.32	3.95	5.83	5.27	4.67
ASTM Yarn Grade	A	C+	B	C+	C+	D

TABLE 11 LOT NUMBER 2798 VARIETY HS-200 GIN Abernathy Producers PRODUCTION AREA Lubbock, Texas

FIBER PROPERTIES

Individual Instrument Data			HVI Data			Uster AFIS		
						Upper Quartile Length (w)	(in)	.99
Stelometer Strength	(g/tex)	23.7	1/8" Gauge Strength	(g/tex)	26.1	Mean Length	(in)	.82
Elongation	(%)	6.4	Elongation	(%)	6.3	Percent Short Fibers		11.6
2.5% Span Length	(in)	.96	Length	(in)	1.00	Diameter	(µm)	14.2
Uniformity Ratio	(%)	48.0	Uniformity Index		81.2	Neps	(no./g)	394
Micronaire Index		4.0	Micronaire Index		4.1	Total Trash	(no./g)	497
Shirley Non-Lint Content		2.04	Reflectance	(Rd)	78.8	Peyer AL 101		
F/MT Maturity	(%)	71.8	Yellowness	(+b)	9.1	Upper Quartile Length (w)	(in)	.92
F/MT Fineness	(mtex)	206	Color Grade		21-4	Mean Length	(in)	.75
			Leaf Grade		1	CV% of Mean		30.8
						Percent Short Fibers		15.3
Reducing Substances	(%)	.570	Card Stickiness Rating	slightly sticky		FCT Stickiness	sticky points/gram	4.2
Opening, Carding Waste	(%)	6.8						

CARDED YARN PROPERTIES

Spinning Machine	Rotor Spinning			Ring Spinning		
Nominal Yarn Number (N_e)	10/1	22/1	30/1	16/1	22/1	30/1
Skein Test:						
Yarn Number (N_e)	10.3	22.2	30.1	16.1	22.2	29.8
CV% of Count	.44	.57	.66	.41	.61	.92
Count-Strength-Product	2334	1948	1817	2312	2187	2096
CV% of CSP	1.55	2.49	3.49	2.30	2.25	3.02
Single-Yarn Test:						
Tenacity (g/tex)	13.35	12.00	11.04	13.96	13.50	12.97
Mean Strength (g)	782	326	221	521	366	262
CV% of Break	5.4	8.3	9.6	9.3	12.0	10.3
Elongation (%)	7.05	6.34	6.10	7.11	6.87	6.31
CV% of Elongation	4.9	6.3	8.8	8.4	8.0	8.4
Uster Evenness Test:						
Non-Uniformity (CV%)	13.58	15.80	17.86	18.25	20.48	23.27
Thin Places/1,000 yds	2	39	178	138	307	810
Thick Places/1,000 yds	36	184	330	448	951	1621
Neps/1,000 yds	37	294	1160	135	298	824
Hairiness	4.60	4.26	3.91	6.00	5.50	4.95
ASTM Yarn Grade	A	C	B	D+	C	C

TABLE 12 LOT NUMBER 2799 VARIETY Paymaster 145 GIN Abernathy Producers PRODUCTION AREA Lubbock, Texas

FIBER PROPERTIES

Individual Instrument Data			HVI Data			Uster AFIS		
						Upper Quartile Length (w)	(in)	1.07
Stelometer Strength	(g/tex)	24.7	1/8" Gauge Strength	(g/tex)	27.5	Mean Length	(in)	.88
Elongation	(%)	6.7	Elongation	(%)	6.6	Percent Short Fibers		10.7
2.5% Span Length	(in)	1.02	Length	(in)	1.07	Diameter	(µm)	13.2
Uniformity Ratio	(%)	47.0	Uniformity Index		81.0	Neps	(no./g)	604
Micronaire Index		3.1	Micronaire Index		3.2	Total Trash	(no./g)	906
Shirley Non-Lint Content		3.40	Reflectance	(Rd)	77.7	Peyer AL 101		
F/MT Maturity	(%)	57.4	Yellowness	(+b)	9.0	Upper Quartile Length (w)	(in)	1.06
F/MT Fineness	(mtex)	176	Color Grade		21-4	Mean Length	(in)	.84
			Leaf Grade		5	CV% of Mean		33.7
						Percent Short Fibers		15.2
Reducing Substances	(%)	.514	Card Stickiness Rating		not sticky	FCT Stickiness	sticky points/gram	3.9
Opening, Carding Waste	(%)	7.1						

CARDED YARN PROPERTIES

Spinning Machine	Rotor Spinning			Ring Spinning		
Nominal Yarn Number (N_e)	10/1	22/1	30/1	16/1	22/1	30/1
Skein Test:						
Yarn Number (N_e)	10.0	22.0	29.7	16.3	22.2	29.6
CV% of Count	.42	.50	.80	1.11	.87	1.09
Count-Strength-Product	2445	2045	1962	2555	2479	2318
CV% of CSP	1.43	1.15	1.32	2.72	2.11	3.05
Single-Yarn Test:						
Tenacity (g/tex)	14.26	12.48	11.80	15.31	14.73	14.00
Mean Strength (g)	857	341	240	567	400	285
CV% of Break	5.8	7.7	8.8	9.6	9.3	11.3
Elongation (%)	7.91	7.21	6.30	8.13	7.53	7.09
CV% of Elongation	6.1	8.0	9.0	7.4	7.5	9.0
Uster Evenness Test:						
Non-Uniformity (CV%)	13.06	15.87	17.13	18.42	20.10	22.98
Thin Places/1,000 yds	0	34	104	124	232	680
Thick Places/1,000 yds	38	184	302	526	939	1691
Neps/1,000 yds	43	348	1578	221	380	1423
Hairiness	4.19	4.18	4.07	6.04	5.57	4.82
ASTM Yarn Grade	B	C	C	D	D+	D

TABLE 13 LOT NUMBER 2800 VARIETY HS-26 GIN Abernathy Producers PRODUCTION AREA Lubbock, Texas

FIBER PROPERTIES

Individual Instrument Data			HVI Data			Uster AFIS		
						Upper Quartile Length (w)	(in)	1.02
Stelometer Strength	(g/tex)	23.0	1/8" Gauge Strength	(g/tex)	26.7	Mean Length	(in)	.85
Elongation	(%)	8.3	Elongation	(%)	7.0	Percent Short Fibers		10.1
2.5% Span Length	(in)	.99	Length	(in)	1.03	Diameter	(µm)	14.9
Uniformity Ratio	(%)	49.0	Uniformity Index		81.3	Neps	(no./g)	324
Micronaire Index		4.6	Micronaire Index		4.6	Total Trash	(no./g)	328
Shirley Non-Lint Content		1.90	Reflectance	(Rd)	78.0	Peyer AL 101		
F/MT Maturity	(%)	74.9	Yellowness	(+b)	8.8	Upper Quartile Length (w)	(in)	.97
F/MT Fineness	(mtex)	226	Color Grade		31-1	Mean Length	(in)	.78
			Leaf Grade		3	CV% of Mean		33.2
						Percent Short Fibers		17.1
Reducing Substances	(%)	.394	Card Stickiness Rating		slightly sticky	FCT Stickiness	sticky points/gram	1.8
Opening, Carding Waste	(%)	7.0						

CARDED YARN PROPERTIES

Spinning Machine	Rotor Spinning			Ring Spinning		
Nominal Yarn Number (N_e)	10/1	22/1	30/1	16/1	22/1	30/1
Skein Test:						
Yarn Number (N_e)	10.3	22.5	30.4	16.5	22.0	29.9
CV% of Count	.25	.32	.65	.76	.41	.62
Count-Strength-Product	2311	1951	1809	2333	2216	2193
CV% of CSP	2.66	2.46	2.19	3.82	1.73	3.83
Single-Yarn Test:						
Tenacity (g/tex)	13.13	11.74	11.26	14.21	13.33	12.76
Mean Strength (g)	771	315	223	520	365	257
CV% of Break	6.9	8.7	9.4	9.2	9.1	11.5
Elongation (%)	7.81	6.87	6.69	7.69	7.45	6.87
CV% of Elongation	6.2	8.8	7.9	8.1	7.4	10.2
Uster Evenness Test:						
Non-Uniformity (CV%)	13.38	15.78	17.82	17.35	19.41	21.99
Thin Places/1,000 yds	2	42	205	88	223	556
Thick Places/1,000 yds	30	165	304	343	710	1336
Neps/1,000 yds	24	234	972	90	199	566
Hairiness	4.52	4.07	3.75	5.44	5.06	4.47
ASTM Yarn Grade	B+	C+	B	B	C	C+

TABLE 14 LOT NUMBER 2809 VARIETY HS-26 GIN Farmers Co-op Society PRODUCTION AREA Abilene, Texas

FIBER PROPERTIES

Individual Instrument Data			HVI Data			Uster AFIS		
						Upper Quartile Length (w)	(in)	1.09
Stelometer Strength	(g/tex)	25.0	1/8" Gauge Strength	(g/tex)	28.3	Mean Length	(in)	.92
Elongation	(%)	8.0	Elongation	(%)	7.0	Percent Short Fibers		7.1
2.5% Span Length	(in)	1.02	Length	(in)	1.08	Diameter	(µm)	14.2
Uniformity Ratio	(%)	48.0	Uniformity Index		83.2	Neps	(no./g)	338
Micronaire Index		4.3	Micronaire Index		4.4	Total Trash	(no./g)	578
Shirley Non-Lint Content		3.38	Reflectance	(Rd)	74.9	Peyer AL 101		
F/MT Maturity	(%)	71.1	Yellowness	(+b)	8.6	Upper Quartile Length (w)	(in)	1.03
F/MT Fineness	(mtex)	226	Color Grade		31-4	Mean Length	(in)	.85
			Leaf Grade		4	CV% of Mean		28.3
						Percent Short Fibers		9.5
Reducing Substances	(%)	.345	Card Stickiness Rating		not sticky	FCT Stickiness	sticky points/gram	2.6
Opening, Carding Waste	(%)	6.7						

CARDED YARN PROPERTIES

Spinning Machine	Rotor Spinning			Ring Spinning		
Nominal Yarn Number (N_e)	10/1	22/1	30/1	16/1	22/1	30/1
Skein Test:						
Yarn Number (N_e)	10.1	22.3	30.0	16.4	22.3	30.0
CV% of Count	.30	.38	1.17	.56	.65	.62
Count-Strength-Product	2452	2058	1875	2645	2516	2307
CV% of CSP	1.90	1.28	1.85	2.35	2.66	3.19
Single-Yarn Test:						
Tenacity (g/tex)	13.97	12.43	11.17	14.86	14.12	13.79
Mean Strength (g)	830	336	225	546	381	277
CV% of Break	6.2	7.4	9.7	8.2	8.6	11.9
Elongation (%)	7.82	6.94	6.14	8.07	7.46	6.84
CV% of Elongation	6.1	8.2	9.9	6.6	6.2	10.5
Uster Evenness Test:						
Non-Uniformity (CV%)	13.19	15.68	17.50	16.15	17.71	20.18
Thin Places/1,000 yds	0	39	182	41	82	277
Thick Places/1,000 yds	32	171	312	234	453	904
Neps/1,000 yds	26	234	1031	98	187	542
Hairiness	4.17	3.80	3.74	5.39	4.94	4.30
ASTM Yarn Grade	B+	C+	B	C	C	C

TABLE 15 LOT NUMBER 2817 VARIETY Acala-90 GIN Glasscock County PRODUCTION AREA Abilene, Texas

FIBER PROPERTIES

Individual Instrument Data			HVI Data			Uster AFIS		
						Upper Quartile Length (w)	(in)	1.01
Stelometer Strength	(g/tex)	23.0	1/8" Gauge Strength	(g/tex)	27.9	Mean Length	(in)	.82
Elongation	(%)	5.5	Elongation	(%)	5.5	Percent Short Fibers		13.2
2.5% Span Length	(in)	.97	Length	(in)	1.03	Diameter	(µm)	14.1
Uniformity Ratio	(%)	44.0	Uniformity Index		79.3	Neps	(no./g)	474
Micronaire Index		4.3	Micronaire Index		3.4	Total Trash	(no./g)	463
Shirley Non-Lint Content		3.74	Reflectance	(Rd)	74.9	Peyer AL 101		
F/MT Maturity	(%)	70.8	Yellowness	(+b)	8.7	Upper Quartile Length (w)	(in)	1.00
F/MT Fineness	(mtex)	201	Color Grade		31-4	Mean Length	(in)	.75
			Leaf Grade		3	CV% of Mean		41.2
						Percent Short Fibers		26.7
Reducing Substances	(%)	.298	Card Stickiness Rating		not sticky	FCT Stickiness	sticky points/gram	2.0
Opening, Carding Waste	(%)	8.1						

CARDED YARN PROPERTIES

Spinning Machine	Rotor Spinning			Ring Spinning		
Nominal Yarn Number (N_e)	10/1	22/1	30/1	16/1	22/1	30/1
Skein Test:						
Yarn Number (N_e)	10.3	22.2	30.4	16.3	22.3	30.4
CV% of Count	.19	.58	.60	.66	1.04	1.28
Count-Strength-Product	2290	1915	1725	2153	1994	1875
CV% of CSP	2.85	1.70	3.02	2.91	3.02	5.07
Single-Yarn Test:						
Tenacity (g/tex)	13.31	12.02	10.88	13.28	12.54	11.92
Mean Strength (g)	780	326	216	491	338	236
CV% of Break	6.6	9.4	9.3	11.3	13.0	13.4
Elongation (%)	6.31	5.68	5.29	6.24	5.80	5.32
CV% of Elongation	5.9	7.5	8.8	8.1	8.7	9.3
Uster Evenness Test:						
Non-Uniformity (CV%)	13.79	15.62	17.90	21.96	24.23	27.08
Thin Places/1,000 yds	4	30	153	472	902	1702
Thick Places/1,000 yds	40	154	337	1210	1850	2627
Neps/1,000 yds	34	292	1265	342	697	1726
Hairiness	4.70	4.36	4.06	6.58	5.99	5.44
ASTM Yarn Grade	B+	B	B	D	D	D

TABLE 16 LOT NUMBER 7408 VARIETY Lambright 20-20C GIN Slaton PRODUCTION AREA Lubbock, Texas

FIBER PROPERTIES

Individual Instrument Data			HVI Data			Uster AFIS		
						Upper Quartile Length (w)	(in)	1.13
Stelometer Strength	(g/tex)	29.4	1/8" Gauge Strength	(g/tex)	29.0	Mean Length	(in)	.94
Elongation	(%)	6.8	Elongation	(%)	9.1	Percent Short Fibers		7.5
2.5% Span Length	(in)	1.09	Length	(in)	1.08	Diameter	(µm)	12.9
Uniformity Ratio	(%)	51.0	Uniformity Index		80.0	Neps	(no./g)	215
Micronaire Index		3.8	Micronaire Index		3.9	Total Trash	(no./g)	1152
Shirley Non-Lint Content		5.78	Reflectance	(Rd)	73.7	Peyer AL 101		
F/MT Maturity	(%)	77.4	Yellowness	(+b)	10.0	Upper Quartile Length (w)	(in)	1.12
F/MT Fineness	(mtex)	180	Color Grade		32-1	Mean Length	(in)	.93
			Leaf Grade		5	CV% of Mean		29.1
						Percent Short Fibers		7.9
Reducing Substances	(%)	.277	Card Stickiness Rating		slightly sticky	FCT Stickiness	sticky points/gram	1.5
Opening, Carding Waste	(%)	7.4	Combing Waste	(%)	12.1	Total Waste	(%)	16.1

CARDED YARN PROPERTIES

Spinning Machine	Rotor Spinning			Ring Spinning		
Nominal Yarn Number (N_e)	10/1	22/1	30/1	16/1	22/1	30/1
Skein Test:						
Yarn Number (N_e)	10.2	22.4	30.7	16.1	22.3	30.0
CV% of Count	.20	.37	.55	.67	.70	.91
Count-Strength-Product	2760	2356	2212	2885	2712	2669
CV% of CSP	1.95	2.10	1.82	2.44	1.41	3.29
Single-Yarn Test:						
Tenacity (g/tex)	15.61	14.19	13.24	17.10	16.47	15.51
Mean Strength (g)	918	382	260	638	445	312
CV% of Break	6.0	7.8	7.6	8.6	8.8	10.5
Elongation (%)	7.38	6.80	6.77	7.74	7.27	6.88
CV% of Elongation	5.8	6.4	6.7	6.9	6.8	7.9
Uster Evenness Test:						
Non-Uniformity (CV%)	12.48	14.56	17.13	15.83	17.86	20.60
Thin Places/1,000 yds	0	14	96	22	94	302
Thick Places/1,000 yds	18	104	305	192	478	1038
Neps/1,000 yds	8	155	902	36	110	470
Hairiness	3.88	3.75	3.69	5.47	4.97	4.52
ASTM Yarn Grade	B+	B	B	C+	C	C

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