COTTON QUALITY REPORT

QUALITY CONTROL DIVISION

2022-2023 Production Season

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Crop Summary

The initial testing for the 2022- 2023 local cotton production season began on 25th of April 2023, and the last samples were tested on the 14th of November 2023. A total of 70 450 bales were produced and tested in this period.

Grades

Visual grade classified manually by cotton classers according to the USDA upland cotton grading standards.

Table 1: Summary of the grades achieved for the entire crop.

Grade	Number of bales	Percentage
Good Middling (GM)	15 258	21.7%
Strict Middling (SM)	11 003	15.6%
Middling (MIDD)	17 273	24.5%
Strict Low Middling (SLM)	19 085	27.1%
Low Middling (LM)	7 679	10.9%
Strict Good Ordinary (SGO)	152	0.2%
Total	**70 450**	**100%**

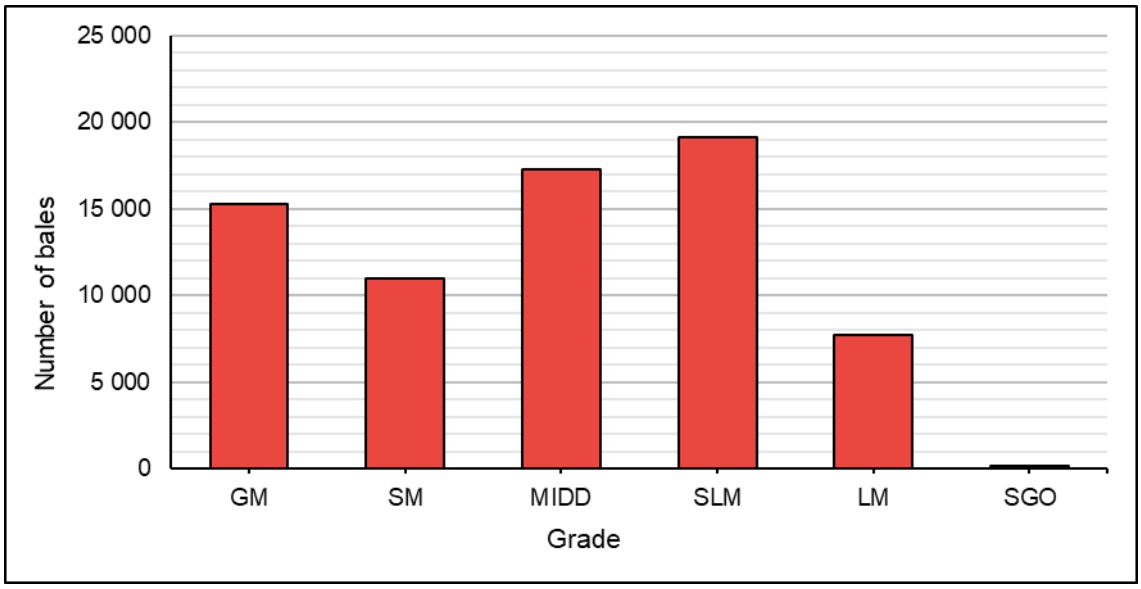

Figure 1: Distribution of the entire crop by grade.

Length

A measure of the Upper Half Mean Length (UHML) of fibres within a sample. The UHML of a sample corresponds to the classer's staple length (Uster 2008).

Table 2: Summary of the length achieved for the entire crop.

Length	Description	Number of bales	Percentage
0,0 - 0,97	less than 1"	313	0.4%
0,98 - 1,04	1 1/32"	4 512	6.4%
1,05 - 1,07	1 1/16"	7 830	11.1%
1,08 - 1,10	1 3/32"	10 526	14.9%
1,11 - 1,13	1 1/8"	10 947	15.5%
1,14 - 1,16	1 5/32"	12 578	17.9%
1,17 - 1,40	1 3/16" and greater	23 744	33.7%
Total		**70 450**	**100%**

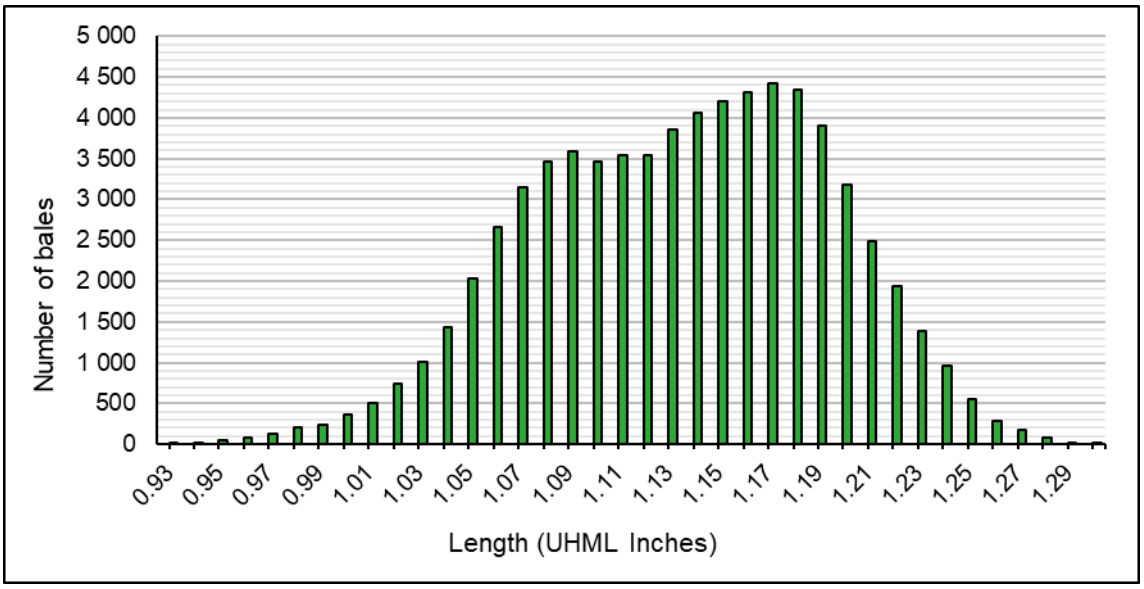

Figure 2: Distribution of the entire crop by length.

Strength

The tensile force required to break a bundle of cotton fibres within a sample (Uster 2008). Strength values above 28,0 grams/tex are preferred by spinners and other purchasers (shown in Figure 3).

Table 3: Summary of the strength achieved for the entire crop.

Strength	Description	Number of bales	Percentage
0,0 - 21,99	Very weak	39	0.1%
22,0 - 24,49	Weak	2 662	3.8%
24,5 - 27,99	Medium	18 711	26.6%
28,0 - 31,99	Strong	40 665	57.7%
32,0 - 45,00	Very strong	8 373	11.9%
Total		**70 450**	**100%**

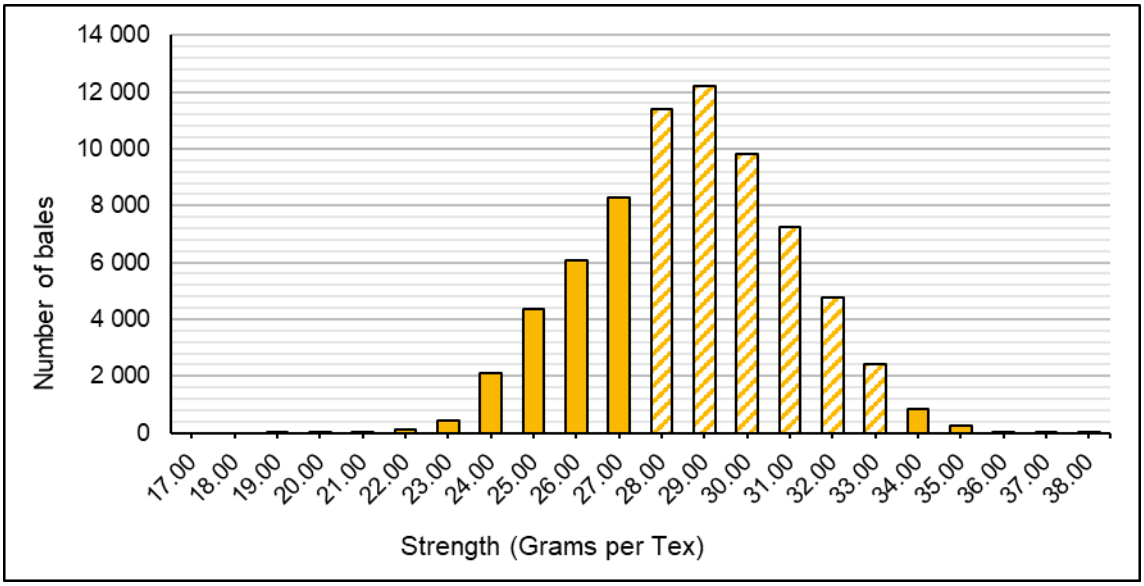

Figure 3: Distribution of the entire crop by strength.

Micronaire

A description of the thickness of individual cotton fibres within a sample. Measured by passing air through a sample of constant weight and measuring the drop in air pressure (Uster 2008). Micronaire values between 3,5 and 4,9 are acceptable. However, the preferred micronaire value is between 3,8 and 4,2 (shown in Figure 4).

Table 4: Summary of the micronaire achieved for the entire crop.

Micronaire	Description	Number of bales	Percentage
0,0 - 2,99	Very fine	2 762	3.9%
3,0 - 3,79	Fine	17 552	24.9%
3,8 - 4,79	Medium	41 245	58.5%
4,8 - 5,4	Coarse	8 891	12.6%
Total		**70 450**	**100%**

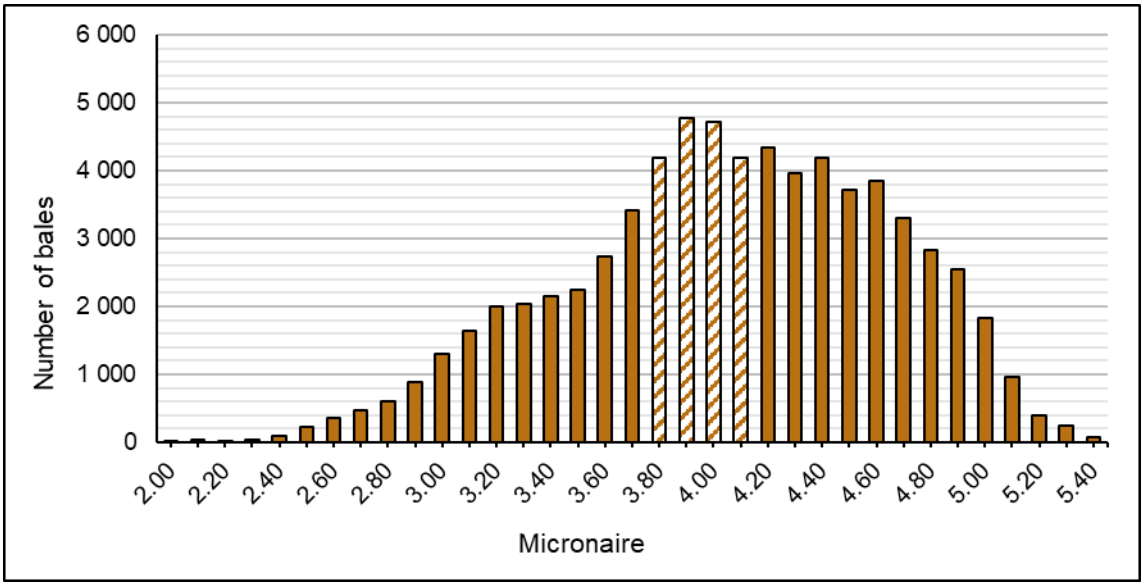

Figure 4: Distribution of the entire crop by micronaire.

Reflectance

Reflectance (Rd) expresses the whiteness of the light that is reflected by the cotton fibres. It is used in conjunction with yellowness (+b) to determine the colour grade of the cotton (Uster 2008).

Table 5: Summary of the reflectance achieved for the entire crop.

Rd	Number of bales	Percentage
0,0 - 67,49	574	0.8%
67,5 - 72,49	10 828	15.4%
72,5 - 74,99	10 616	15.1%
75,0 - 77,49	12 686	18.0%
77,5 - 79,99	12 062	17.1%
80,0 - 82,49	12 013	17.1%
82,5 - 90,0	11 671	16.6%
Total	**70 450**	**100%**

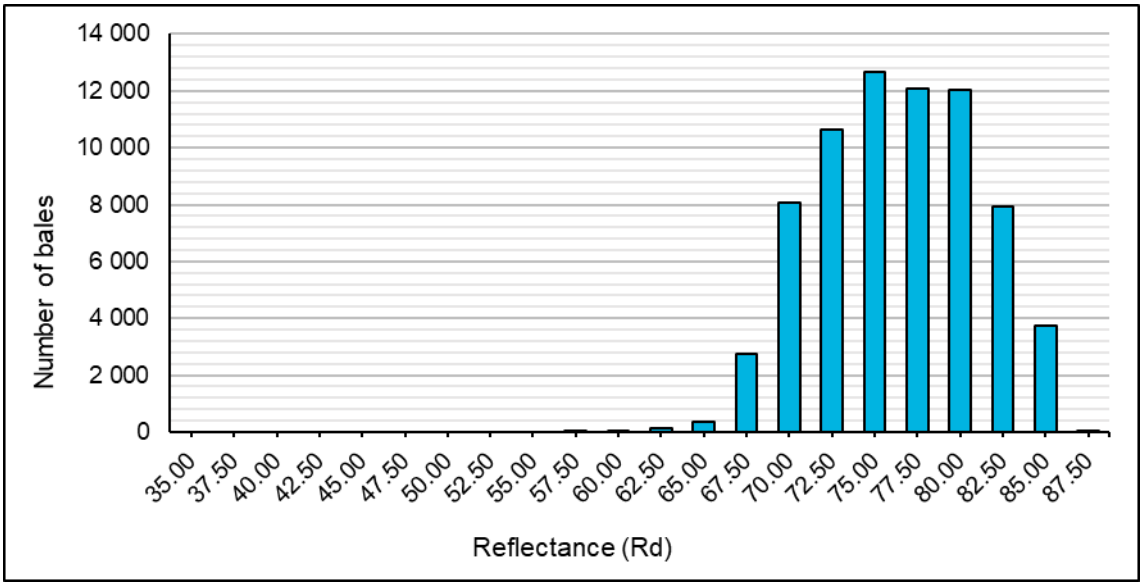

Figure 5: Distribution of the entire crop by reflectance.

Yellowness

Yellowness expresses the yellowness of the light that is reflected by the cotton fibres, the yellowness of the sample is determined by using a yellow filter. It is used in conjunction with the reflectance to determine the colour grade of the cotton (Uster 2008).

Table 6: Summary of the Yellowness achieved for the entire crop.

+ b	Number of bales	Percentage
0,0 - 5,9	2 726	3.9%
6,0 - 6,9	17 397	24.7%
7,0 - 7,9	31 004	44.0%
8,0 - 8,9	15 467	22.0%
9,0 - 9,9	3 611	5.1%
10,0 - 10,9	231	0.3%
11,0 - 12,9	14	0.0%
13,0 - 20,0	0	0.0%
Total	**70 450**	**100%**

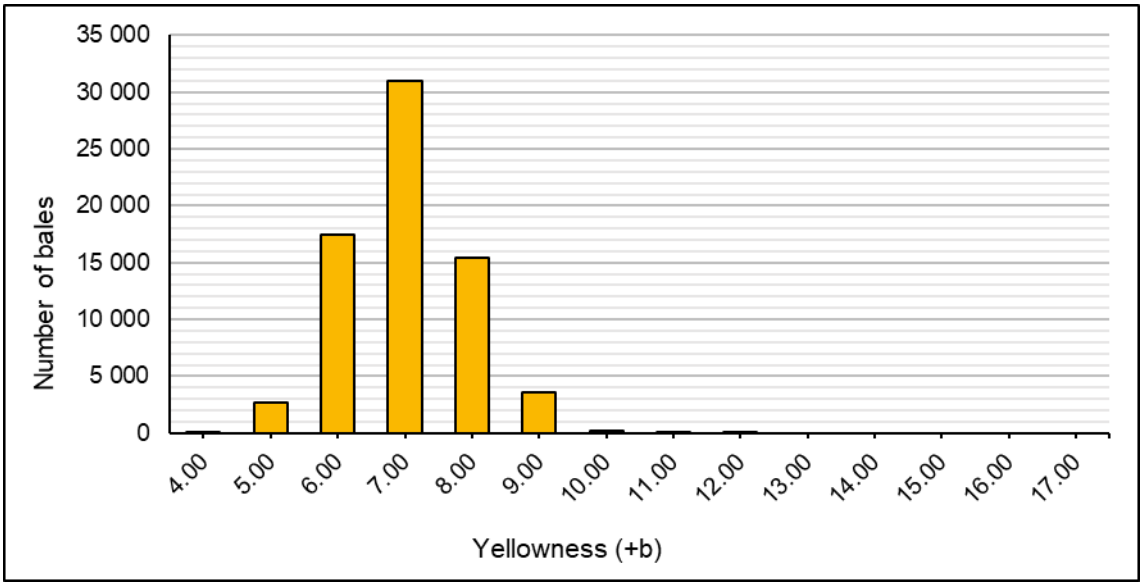

Figure 6: Distribution of the entire crop by yellowness.

Short fibre index

The Short Fibre Index (SFI) is an indication of the number of fibres in percentage that are less than 0.5 inches (12.7 mm) in length (Uster 2008). A lower index value is considered better, SFI of 10,0 or above is considered an issue (shown in Figure 7).

Table 7: Summary of the short fibre index achieved for the entire crop.

SFI	Description	Number of bales	Percentage
0,0 - 5,99	Very low	74	0.1%
6,0 - 9,99	Low	42 161	59.8%
10,0 - 13,99	Medium	27 516	39.1%
14,0 - 17,99	High	694	1.0%
18,0 - 30,00	Very high	5	0.0%
Total		**70 450**	**100%**

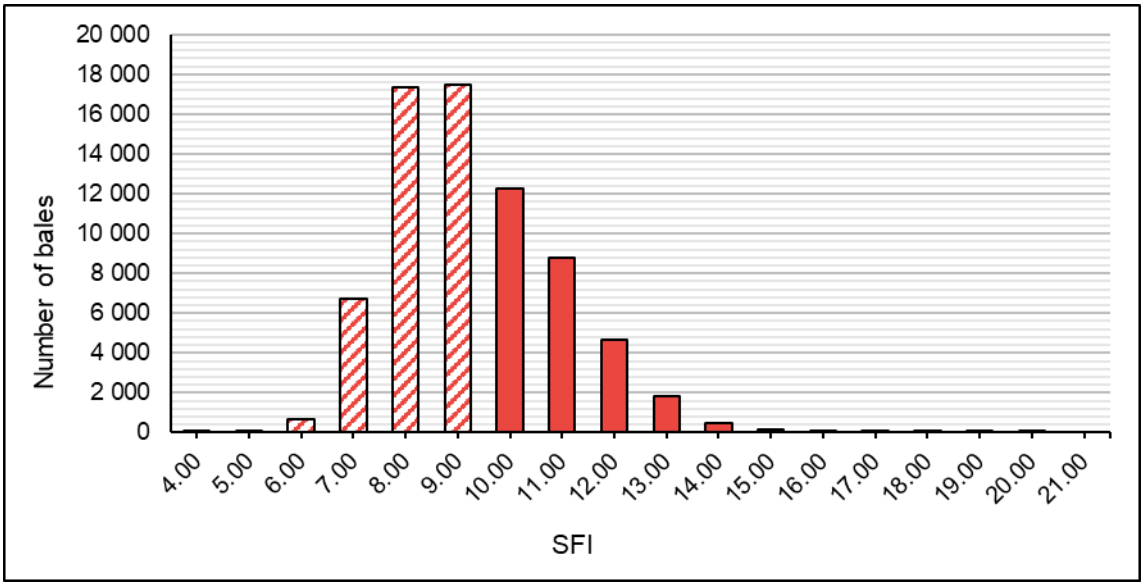

Figure 7: Distribution of the entire crop by short fibre index.

Uniformity

The uniformity (UI) expresses the relationship between the UHML and Mean Length. It is an indication of the distribution of fibre length within samples (Uster 2008). An index value of 80,0 or better is preferable (shown in Figure 8).

Table 8: Summary of the uniformity achieved for the entire crop.

UI	Description	Number of bales	Percentage
0,0 - 76,9	Very low	694	1.0%
77,0 - 80,9	Low	34 723	49.3%
81,0 - 84,9	Medium	34 919	49.6%
85,0 - 89,0	High	114	0.2%
Total		**70 450**	**100%**

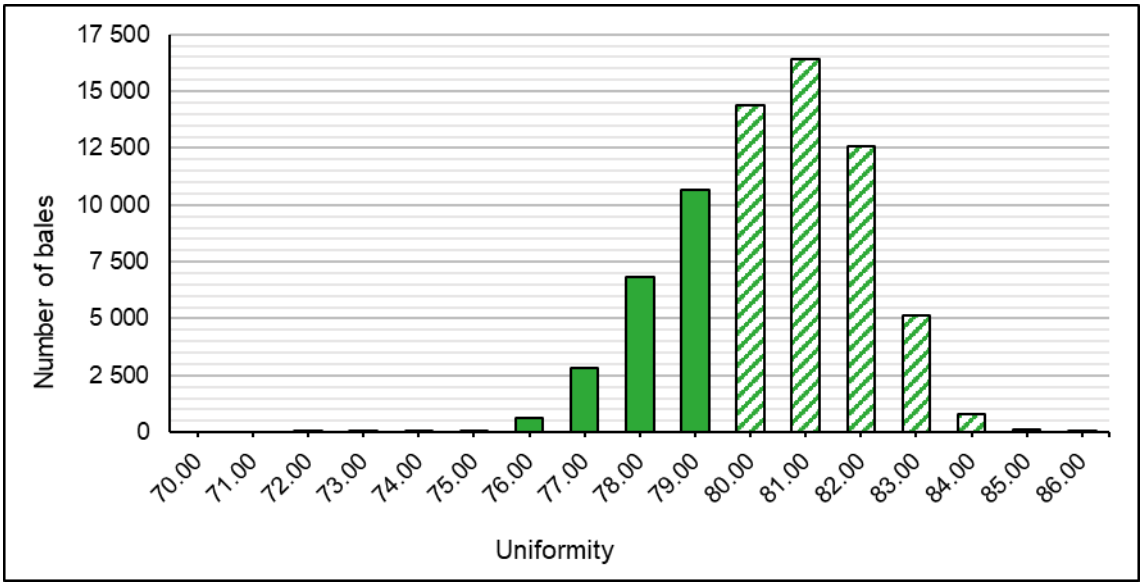

Figure 8: Distribution of the entire crop by uniformity.

Spinning consistency index

The spinning consistency index is a calculation for predicting the spinnability of fibres. It is a calculation that can anticipate yarn strength and spinning potential based on individual HVI measurements (this includes: Strength, Micronaire, Length, Uniformity, Reflectance, and Yellowness). In general, the higher the SCI, the higher the yarn strength and the better the overall fibre spinnability (Uster 2008). An index of 120 or better is preferable (shown in Figure 9).

Table 9: Summary of the spinning consistency index achieved for the entire crop.

SCI	Number of bales	Percentage
0 - 99	3 143	4.5%
100 - 119	23 964	34.0%
120 - 130	18 827	26.7%
131 - 140	15 220	21.6%
141 - 150	7 392	10.5%
151 - 170	1 904	2.7%
Total	**70 450**	**100%**

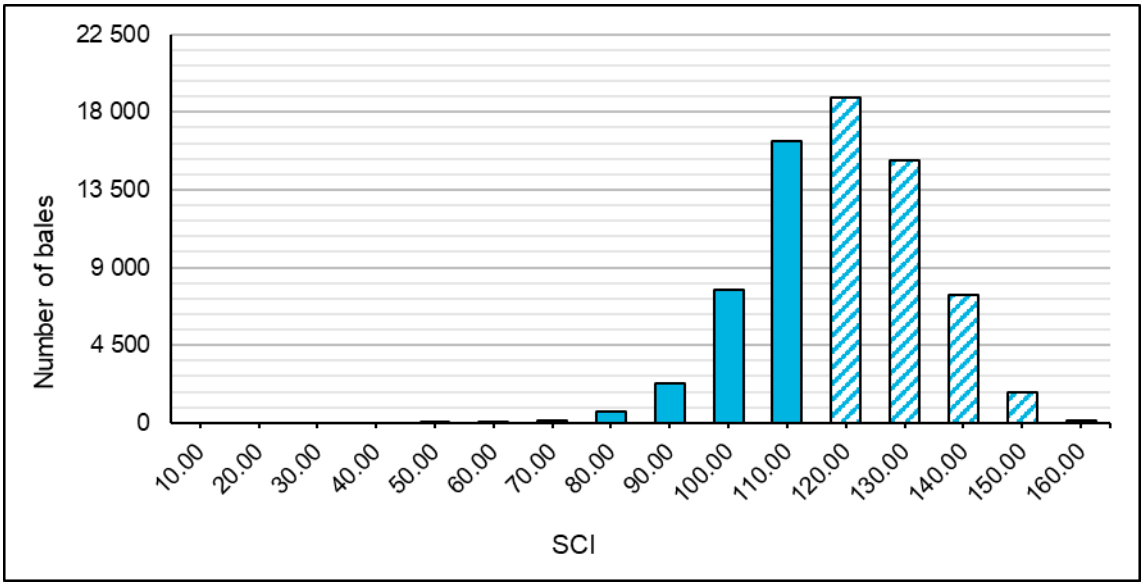

Figure 9: Distribution of the entire crop by spinning consistency index.

Cultivar Summaries

In terms of cultivars: Candia B2RF accounted for 34.0% of the cotton planted and Deltapine (DP) 1240 B2RF for 62.1%. Paymaster (PM 3225 B2RF) was 2.8% of the entire crop, it is the recommended cultivar for handpicked cotton (i.e., smallholder farmers). The following statistics were calculated based on data received from gins.

Table 10: Distribution of the Cultivars between Dryland and Irrigated Growing Conditions.

Cultivar	Number of bales		Percentage
	Dryland	Irrigation	
Candia	3 726	20 225	34.0%
DP 1240	31 116	12 624	62.1%
PM 3225	1 994	0	2.8%
Other	337	428	1.1%
Total	**37 173**	**33 277**	**100%**

Candia

Table 101: Summary of the grade achieved for Candia.

Grade	Number of bales	Percentage
Good Middling (GM)	8363	34.9%
Strict Middling (SM)	4936	20.6%
Middling (MIDD)	7689	32.1%
Strict Low Middling (SLM)	2560	10.7%
Low Middling (LM)	395	1.6%
Strict Good Ordinary (SGO)	8	0.0%
Total	**23951**	**100%**

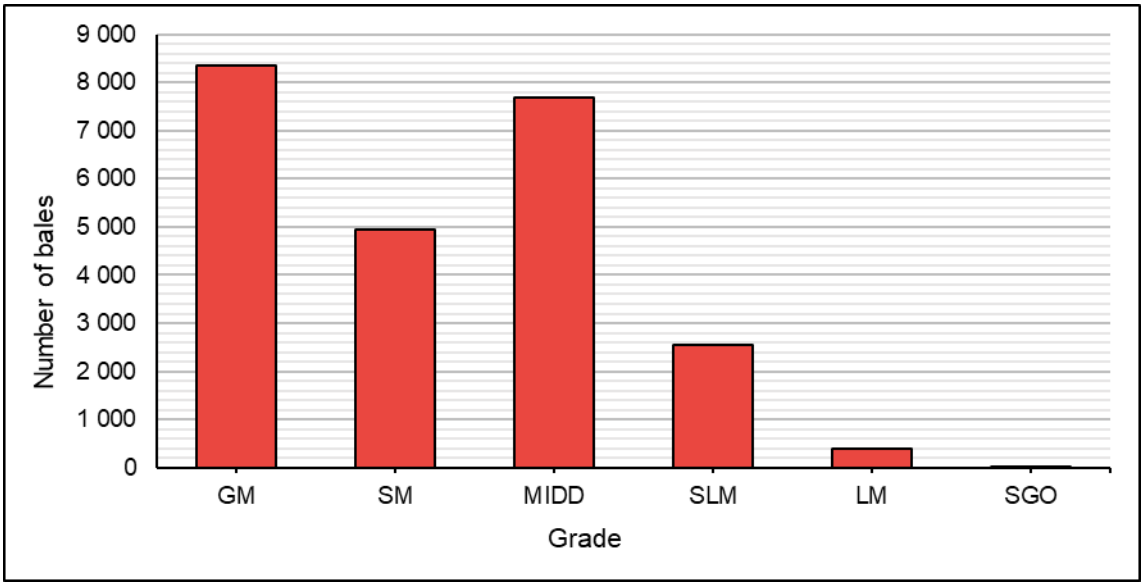

Figure 10: Distribution of Candia by grade.

Table 112: Summary of the length achieved for Candia.

Length	Description	Number of bales	Percentage
0,0 - 0,97	less than 1"	0	0.0%
0,98 - 1,04	1 1/32"	375	1.6%
1,05 - 1,07	1 1/16"	1272	5.3%
1,08 - 1,10	1 3/32"	2514	10.5%
1,11 - 1,13	1 1/8"	3261	13.6%
1,14 - 1,16	1 5/32"	4665	19.5%
1,17 - 1,40	1 3/16" and greater	11864	49.5%
Total		**23951**	**100%**

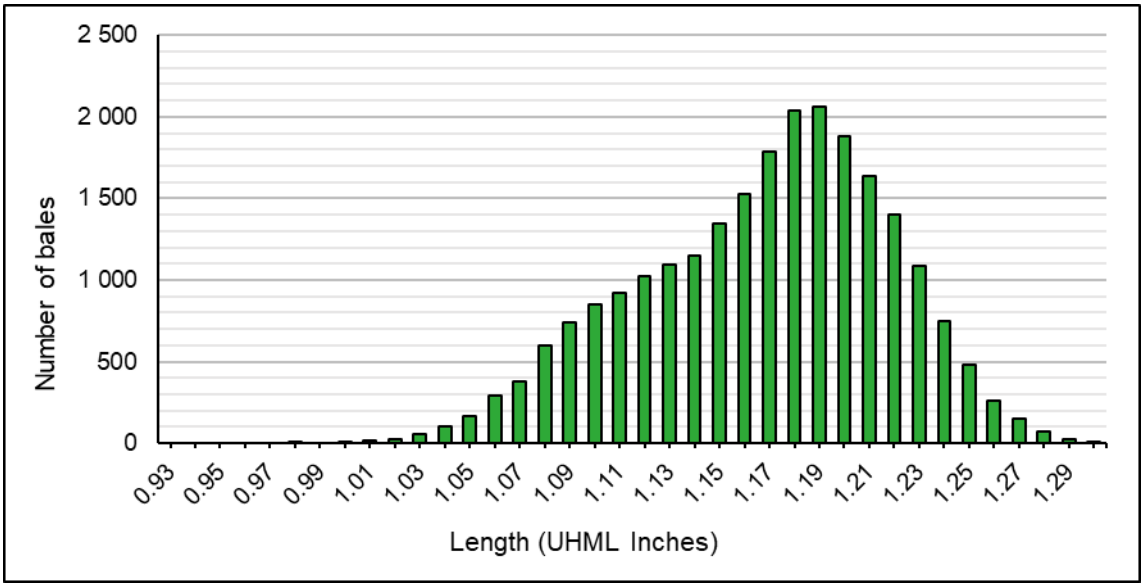

Figure 101: Distribution of Candia by length.

Table 123: Summary of the strength achieved for Candia.

Strength	Description	Number of bales	Percentage
0,0 - 21,99	Very weak	21	0.1%
22,0 - 24,49	Weak	1508	6.3%
24,5 - 27,99	Medium	8084	33.8%
28,0 - 29,99	Strong	13038	54.4%
32,0 - 45,00	Very strong	1300	5.4%
Total		**23951**	**100%**

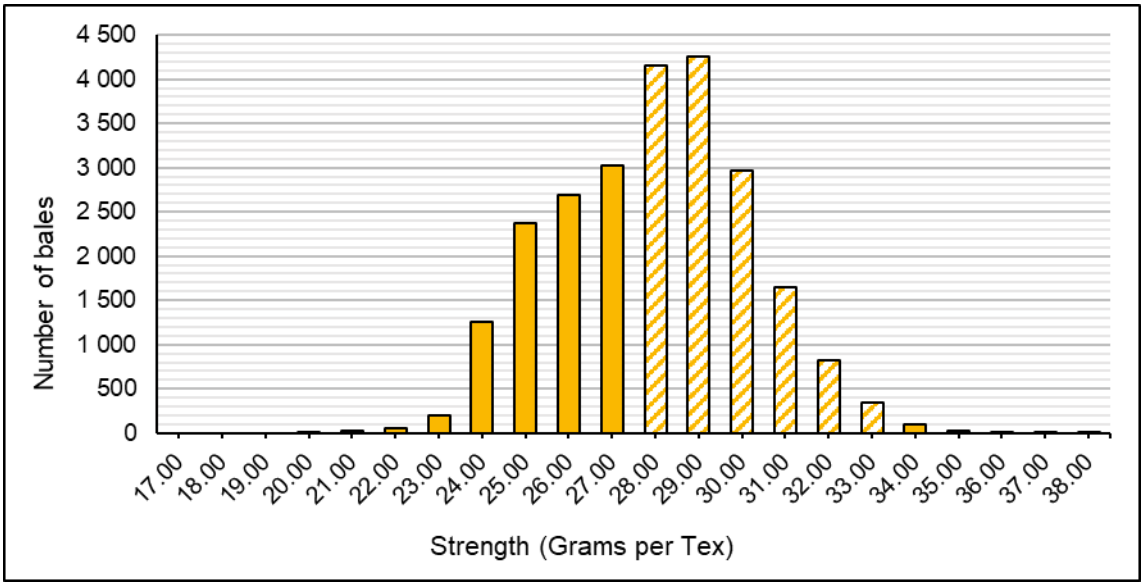

Figure 112: Distribution of Candia by strength.

Table 134: Summary of the micronaire achieved for Candia.

Micronaire	Description	Number of bales	Percentage
0,0 - 2,99	Very fine	2514	10.5%
3,0 - 3,79	Fine	9391	39.2%
3,8 - 4,79	Medium	11350	47.4%
4,8 - 5,4	Coarse	696	2.9%
Total		**23951**	**100%**

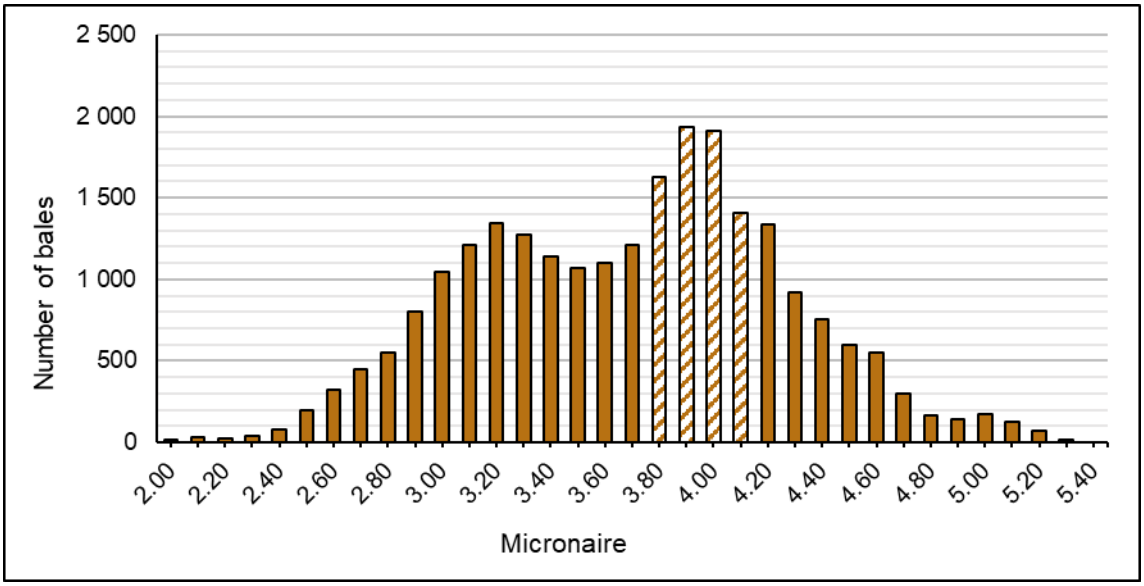

Figure 123: Distribution of Candia by micronaire.

Table 145: Summary of the short fibre index achieved for Candia.

SFI	Description	Number of bales	Percentage
0,0 - 5,99	Very low	68	0.3%
6,0 - 9,99	Low	13583	56.7%
10,0 - 13,99	Medium	10151	42.4%
14,0 - 17,99	High	148	0.6%
18,0 - 30,00	Very high	1	0.0%
Total		**23951**	**100%**

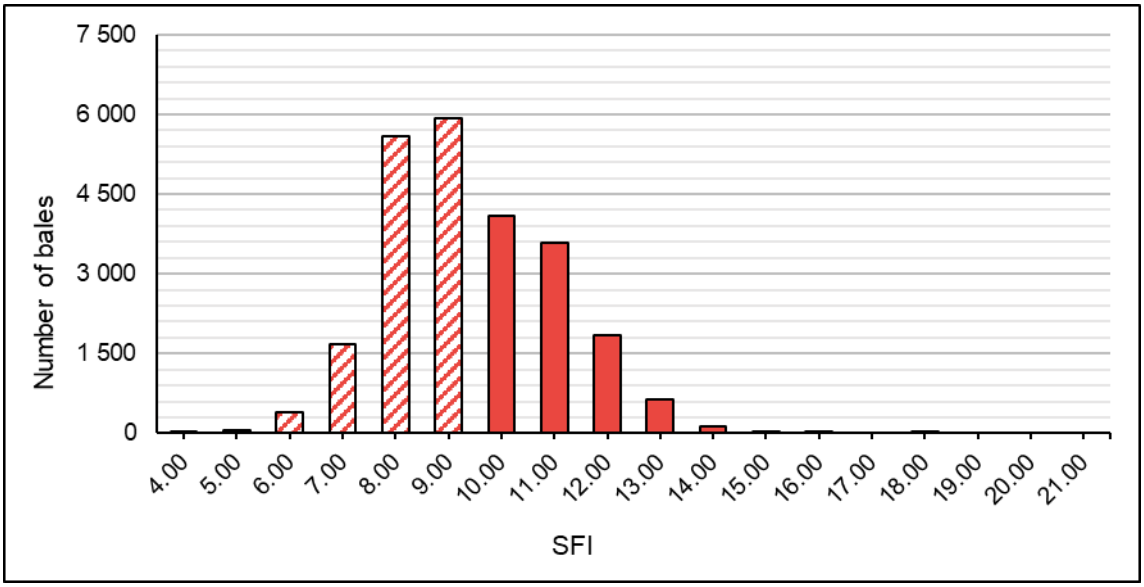

Figure 134: Distribution of Candia by short fibre index.

Table 156: Summary of the uniformity achieved for Candia.

UI	Description	Number of bales	Percentage
0,0 - 76,9	Very low	1796	7.5%
77,0 - 80,9	Low	16596	69.3%
81,0 - 84,9	Medium	5559	23.2%
85,0 - 89,0	High	0	0.0%
Total		**23951**	**100%**

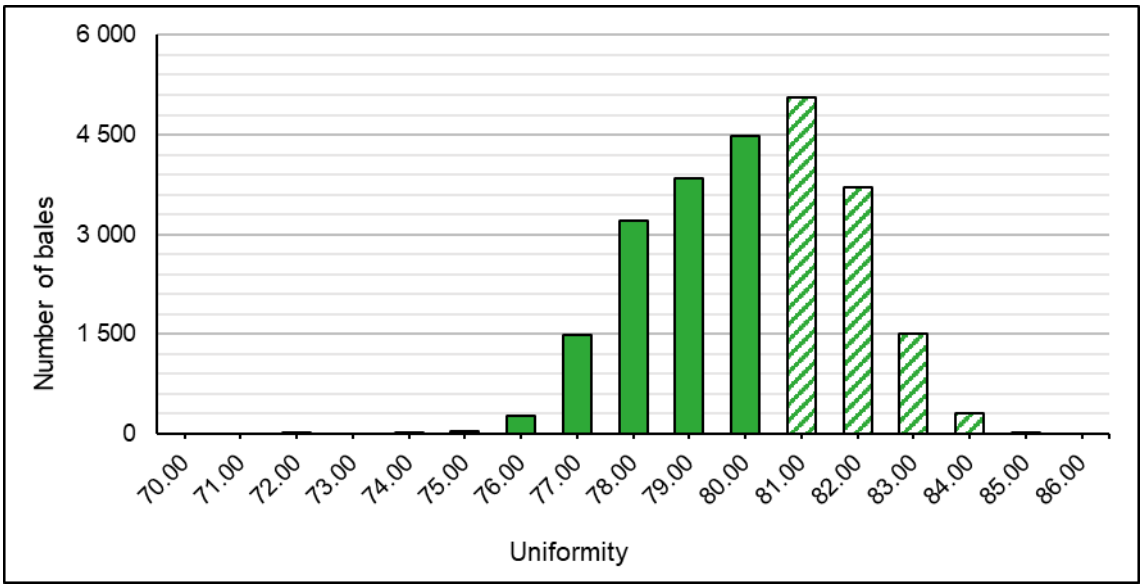

Figure 145: Distribution of Candia by uniformity.

Table 167: Summary of the spinning consistency index achieved for Candia.

SCI	Number of bales	Percentage
0 - 99	2077	8.7%
100 - 119	11554	48.2%
120 - 130	5278	22.0%
131 - 140	3799	15.9%
141 - 150	1179	4.9%
151 - 170	64	0.3%
Total	**23951**	**100%**

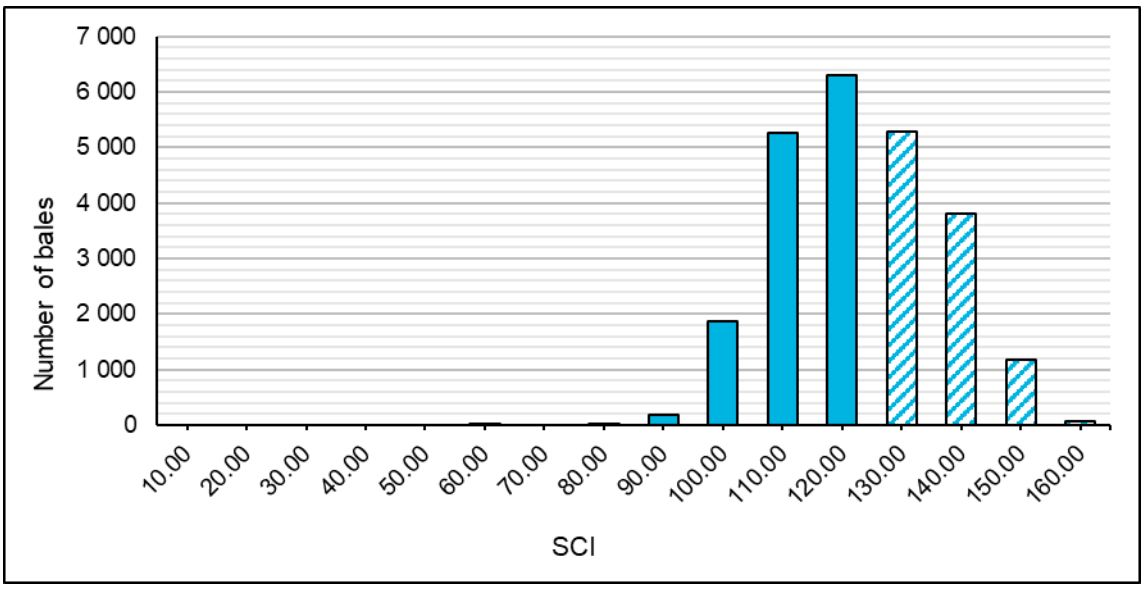

Figure 156: Distribution of Candia by spinning consistency index.

DP 1240

Table 17: Summary of the grade achieved for DP 1240.

Grade	Number of bales	Percentage
Good Middling (GM)	6566	15.0%
Strict Middling (SM)	4389	10.0%
Middling (MIDD)	9022	20.6%
Strict Low Middling (SLM)	16482	37.7%
Low Middling (LM)	7137	16.3%
Strict Good Ordinary (SGO)	144	0.3%
Total	**43740**	**100%**

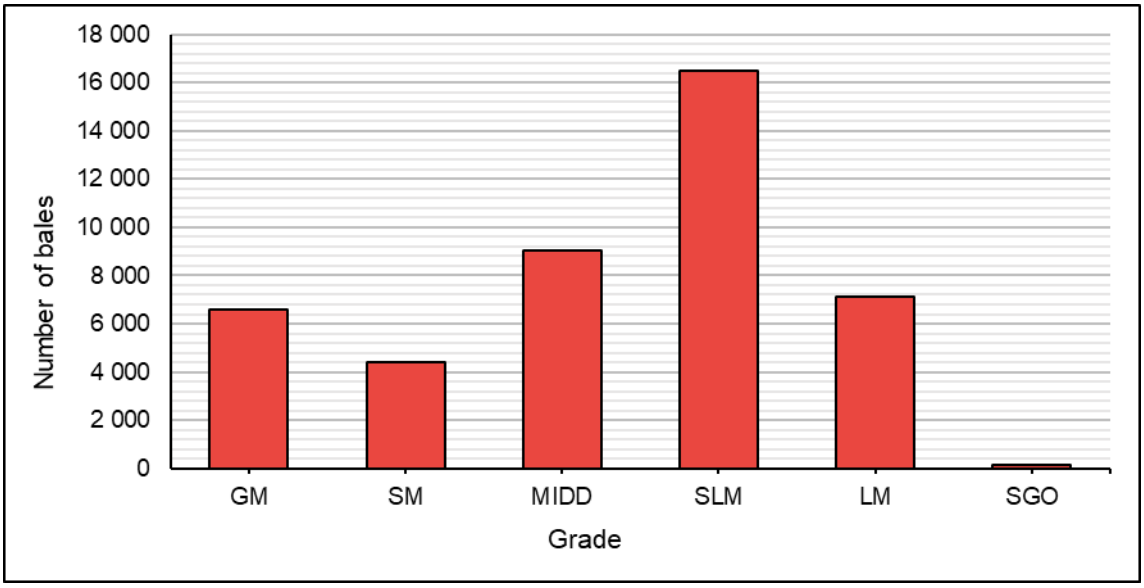

Figure 167: Distribution of DP 1240 by grade.

Table 189: Summary of the length achieved for DP 1240.

Length	Description	Number of bales	Percentage
0,0 - 0,97	less than 1"	313	0.7%
0,98 - 1,04	1 1/32"	4178	9.6%
1,05 - 1,07	1 1/16"	5791	13.2%
1,08 - 1,10	1 3/32"	7462	17.1%
1,11 - 1,13	1 1/8"	7742	17.7%
1,14 - 1,16	1 5/32"	8291	19.0%
1,17 - 1,40	1 3/16" and greater	9963	22.8%
Total		**43740**	**100%**

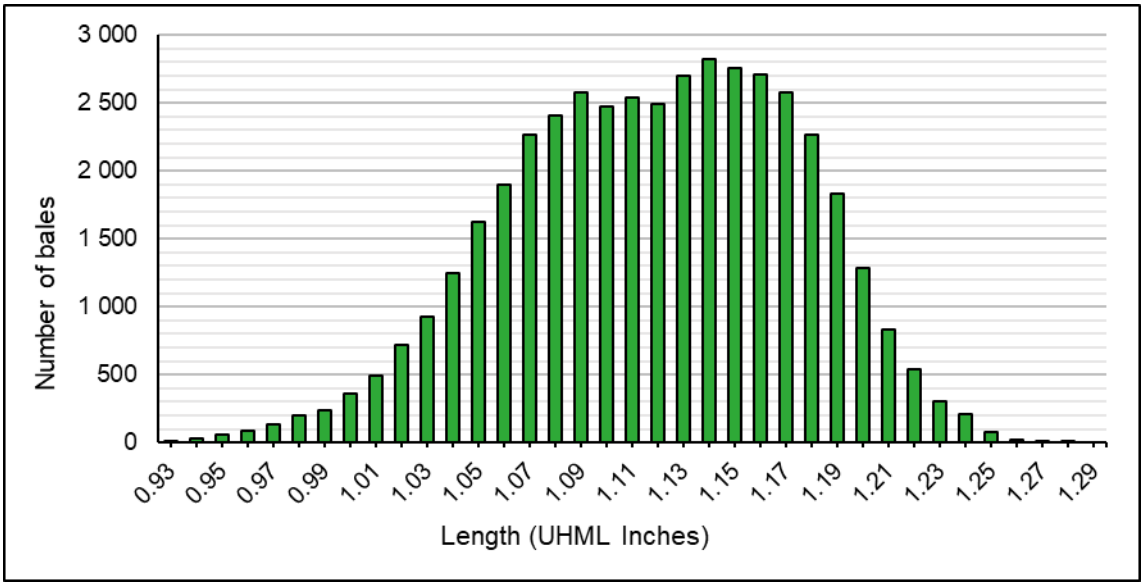

Figure 178: Distribution of DP 1240 by length.

Table 20: Summary of the strength achieved for DP 1240.

Strength	Description	Number of bales	Percentage
0,0 - 21,99	Very weak	18	0.0%
22,0 - 24,49	Weak	1152	2.6%
24,5 - 27,99	Medium	10528	24.1%
28,0 - 29,99	Strong	25826	59.0%
32,0 - 45,00	Very strong	6216	14.2%
Total		**43740**	**100%**

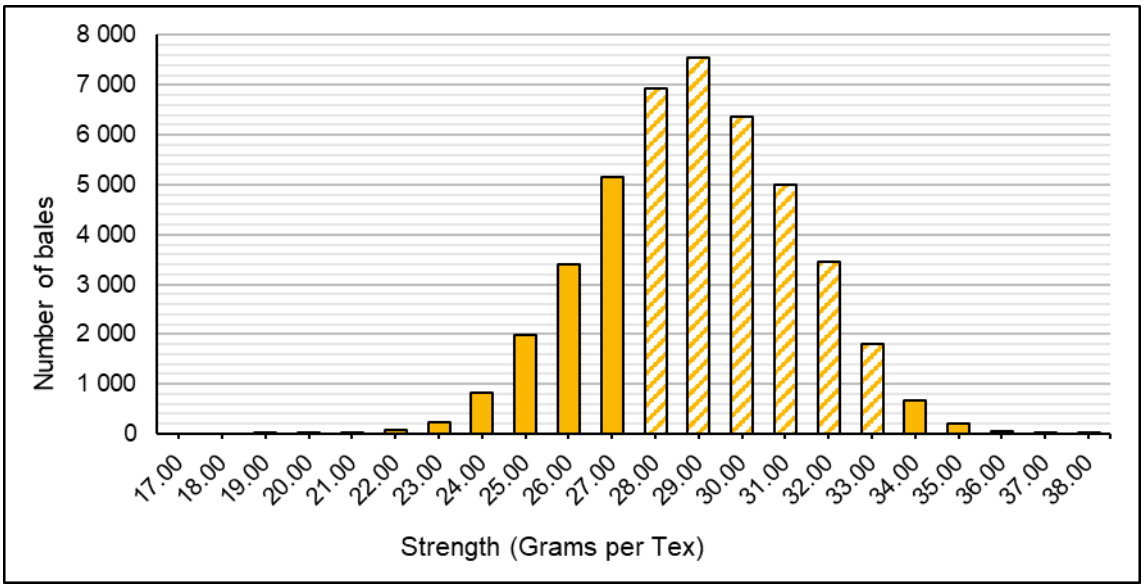

Figure 19: Distribution of DP 1240 by strength.

Table 191: Summary of the micronaire achieved for DP 1240.

Micronaire	Description	Number of bales	Percentage
0,0 - 2,99	Very fine	245	0.6%
3,0 - 3,79	Fine	7841	17.9%
3,8 - 4,79	Medium	27558	63.0%
4,8 – 5,4	Coarse	8096	18.5%
Total		**43740**	**100%**

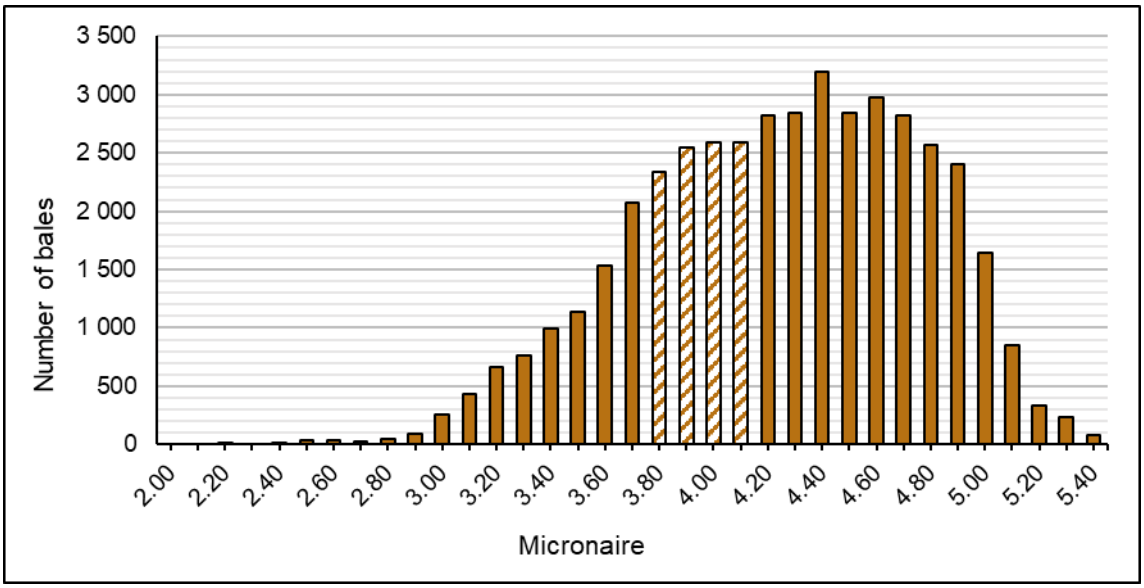

Figure 20: Distribution of DP 1240 by micronaire.

Table 202: Summary of the short fibre index achieved for DP 1240.

SFI	Description	Number of bales	Percentage
0,0 - 5,99	Very low	237	0.5%
6,0 - 9,99	Low	33800	77.3%
10,0 - 13,99	Medium	9523	21.8%
14,0 - 17,99	High	179	0.4%
18,0 - 30,00	Very high	1	0.0%
Total		**43740**	**100%**

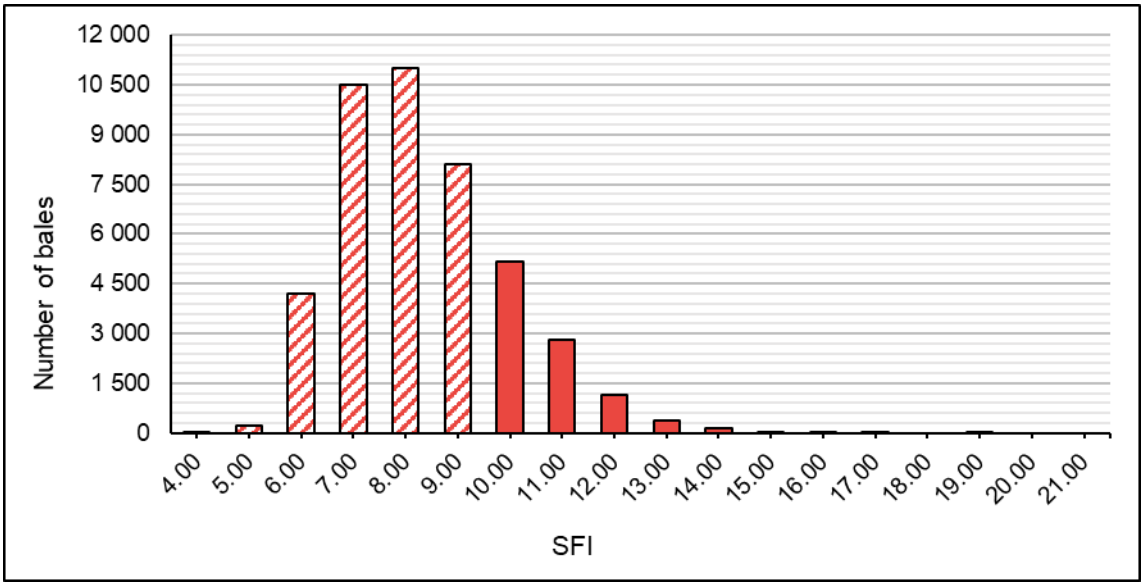

Figure 21: Distribution of DP 1240 by short fibre index.

Table 213: Summary of the uniformity achieved for DP 1240.

UI	Description	Number of bales	Percentage
0,0 - 76,9	Very low	387	0.9%
77,0 - 80,9	Low	21393	48.9%
81,0 - 84,9	Medium	21873	50.0%
85,0 - 89,0	High	87	0.2%
Total		**43740**	**100%**

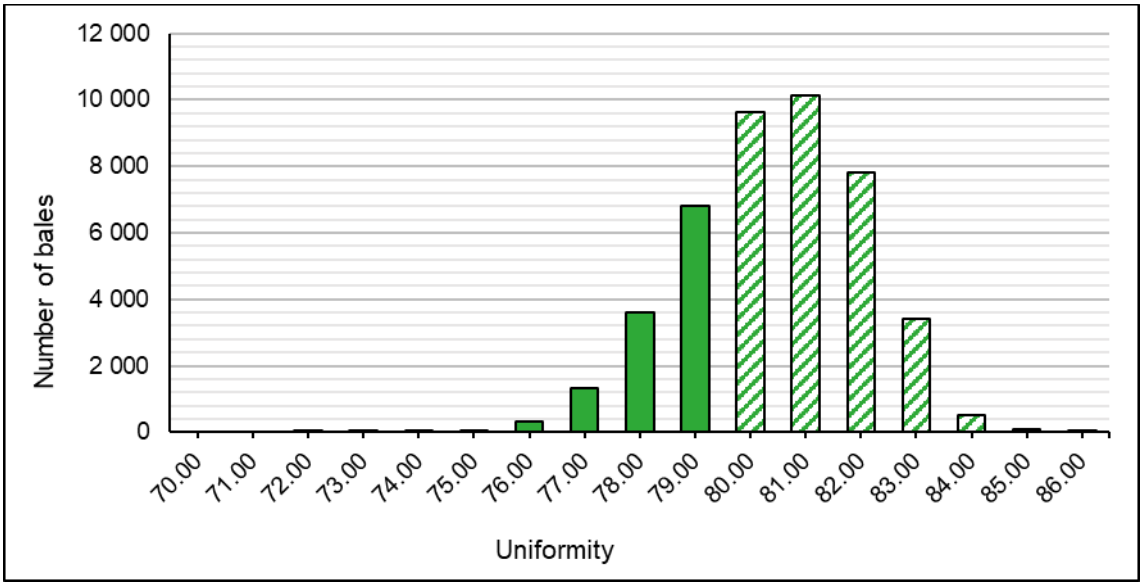

Figure 22: Distribution of DP 1240 by uniformity.

Table 224: Summary of the spinning consistency index achieved for DP 1240.

SCI	Number of bales	Percentage
0 - 99	2925	6.7%
100 - 119	16648	38.1%
120 - 130	11606	26.5%
131 - 140	8591	19.6%
141 - 150	3316	7.6%
151 - 170	654	1.5%
Total	**43740**	**100%**

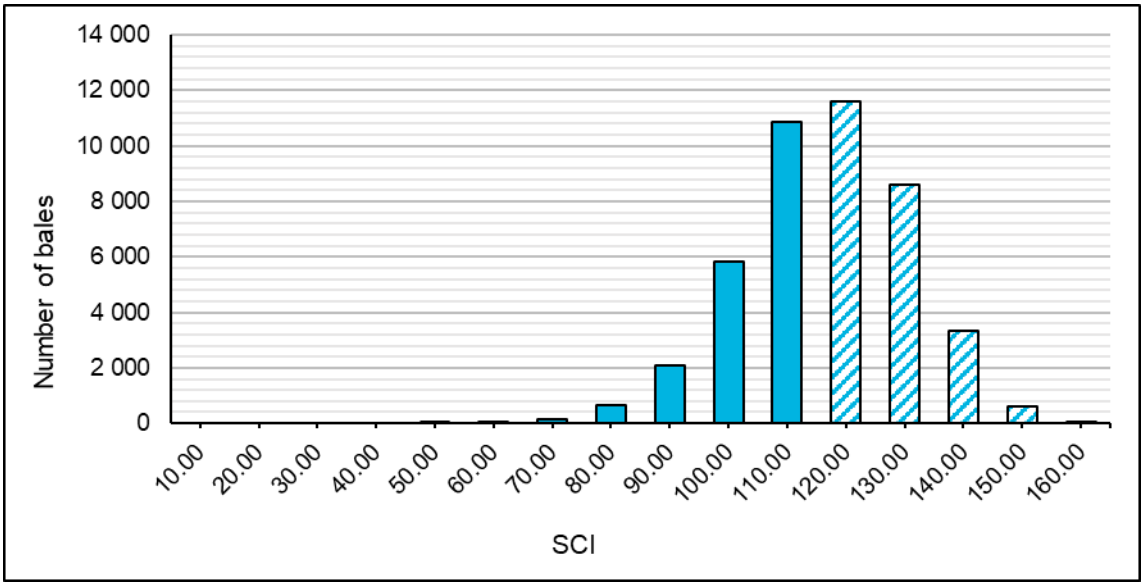

Figure 183: Distribution of DP 1240 by spinning consistency index.

PM 3225 (Paymaster)

Table 25: Summary of the grade achieved for PM 3225.

Grade	Number of bales	Percentage
Good Middling (GM)	189	9.5%
Strict Middling (SM)	1416	71.0%
Middling (MIDD)	389	19.5%
Strict Low Middling (SLM)	0	0.0%
Low Middling (LM)	0	0.0%
Strict Good Ordinary (SGO)	0	0.0%
Total	**1994**	**100%**

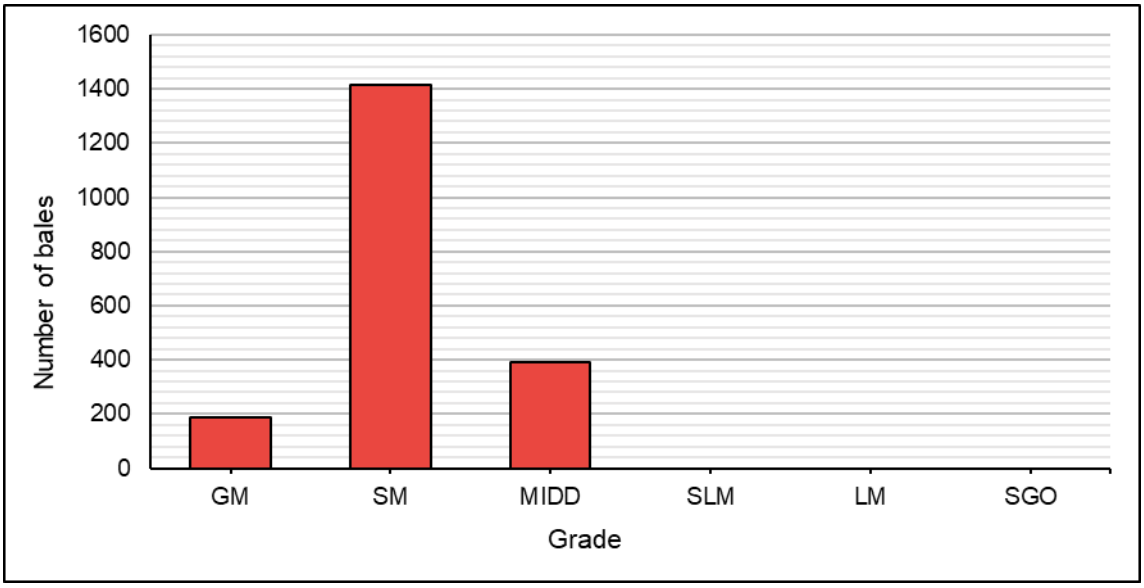

Figure 24: Distribution of PM 3225 by grade.

Table 26: Summary of the length achieved for PM 3225.

Length	Description	Number of bales	Percentage
0,0 - 0,97	less than 1"	0	0.0%
0,98 - 1,04	1 1/32"	107	5.4%
1,05 - 1,07	1 1/16"	1074	53.9%
1,08 - 1,10	1 3/32"	755	37.9%
1,11 - 1,13	1 1/8"	56	2.8%
1,14 - 1,16	1 5/32"	2	0.1%
1,17 - 1,40	1 3/16" and greater	0	0.0%
Total		**1994**	**100%**

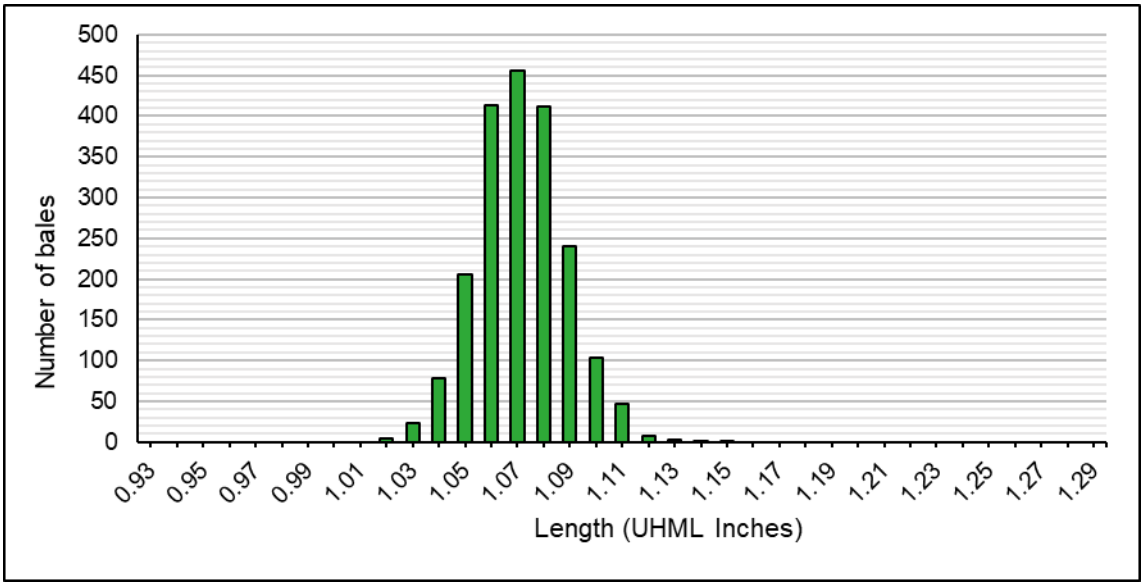

Figure 25: Distribution of PM 3225 by length.

Table 27: Summary of the strength achieved for PM 3225.

Strength	Description	Number of bales	Percentage
0,0 - 21,99	Very weak	0	0.0%
22,0 - 24,49	Weak	0	0.0%
24,5 - 27,99	Medium	15	0.8%
28,0 - 29,99	Strong	1153	57.8%
32,0 - 45,00	Very strong	826	41.4%
Total		**1994**	**100%**

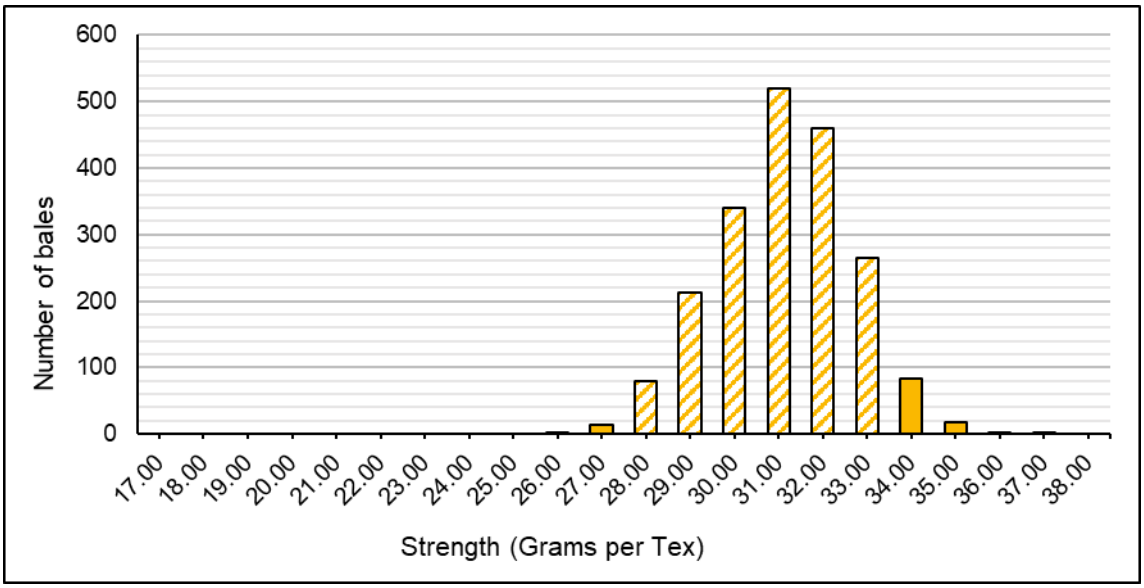

Figure 26: Distribution of PM 3225 by strength.

Table 28: Summary of the micronaire achieved for PM 3225.

Micronaire	Description	Number of bales	Percentage
0,0 - 2,99	Very fine	0	0.0%
3,0 - 3,79	Fine	264	13.2%
3,8 - 4,79	Medium	1705	85.5%
4,8 – 5,4	Coarse	25	1.3%
Total		**1994**	**100%**

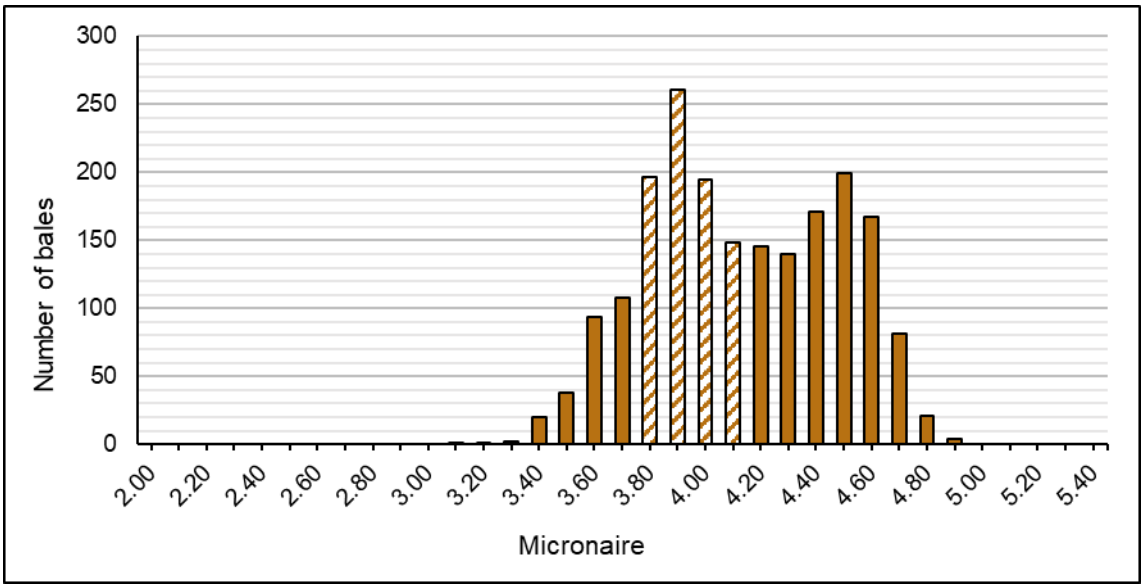

Figure 27: Distribution of PM 3225 by micronaire.

Table 29: Summary of the short fibre index achieved for PM 3225.

SFI	Description	Number of bales	Percentage
0,0 - 5,99	Very low	47	2.4%
6,0 - 9,99	Low	1947	97.6%
10,0 - 13,99	Medium	0	0.0%
14,0 - 17,99	High	0	0.0%
18,0 - 30,00	Very high	0	0.0%
Total		**1994**	**100%**

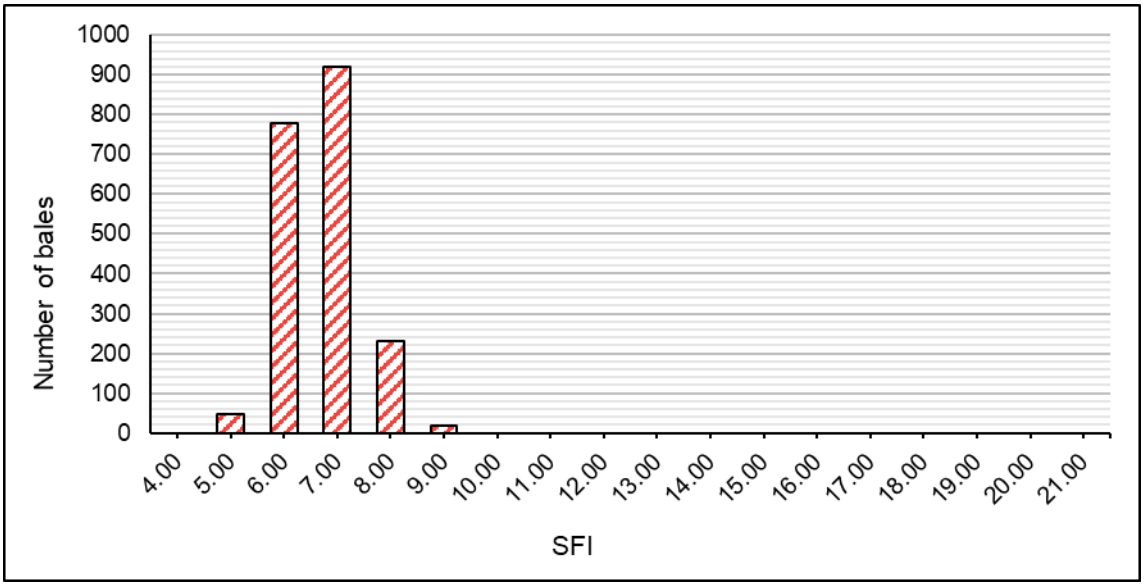

Figure 28: Distribution of PM 3225 by short fibre index.

Table 30: Summary of the uniformity achieved for PM 3225.

UI	Description	Number of bales	Percentage
0,0 - 76,9	Very low	0	0.0%
77,0 - 80,9	Low	129	6.5%
81,0 - 84,9	Medium	1865	93.5%
85,0 - 89,0	High	0	0.0%
Total		**1994**	**100%**

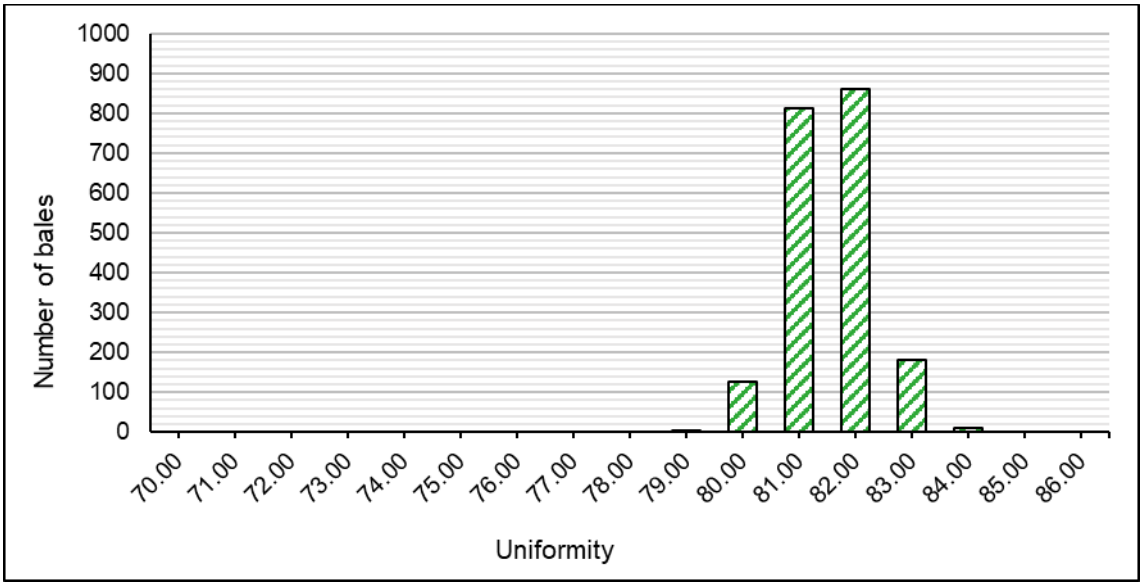

Figure 29: Distribution of PM 3225 by uniformity.

Table 31: Summary of the spinning consistency index achieved for PM 3225.

SCI	Number of bales	Percentage
0 - 99	0	0.0%
100 - 119	14	0.7%
120 - 130	502	25.2%
131 - 140	1221	61.2%
141 - 150	251	12.6%
151 - 170	6	0.3%
Total	**1994**	**100%**

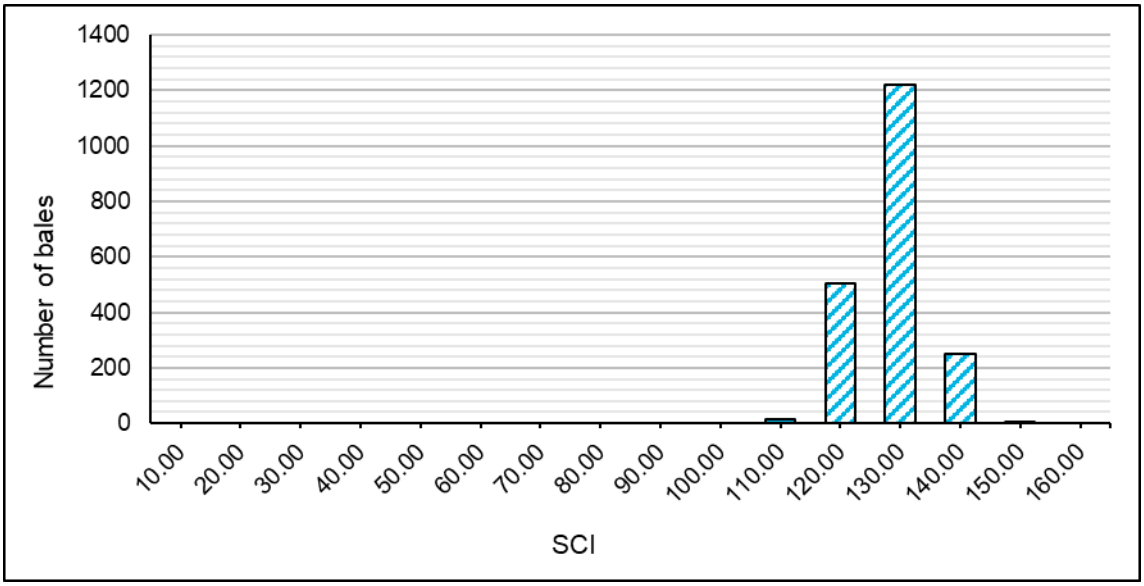

Figure 30: Distribution of PM 3225 by spinning consistency index.

References

Uster Technologies AG. 2008. *Uster HVI 1000 Application Handbook*. Switzerland: Uster Technologies AG.