

COTTON QUALITY REPORT QUALITY CONTROL DIVISION







2021-2022 Production Season

Table of contents

Table of contentsi
Crop Summary 1
Grades1
Table 1: Summary of the grades achieved for the entire crop
Figure 1: Distribution of the entire crop by grade1
Length1
Table 2: Summary of the length achieved for the entire crop
Figure 2: Distribution of the entire crop by length2
Strength2
Table 3: Summary of the strength achieved for the entire crop
Figure 3: Distribution of the entire crop by strength3
Micronaire3
Table 4: Summary of the micronaire achieved for the entire crop. 3
Figure 4: Distribution of the entire crop by micronaire4
Reflectance4
Table 5: Summary of the reflectance achieved for the entire crop. 4
Figure 5: Distribution of the entire crop by reflectance5
Yellowness5
Table 6: Summary of the Vellowness achieved for the entire crop
Figure 6: Distribution of the entire crop by yellowness
Figure 6: Distribution of the entire crop by yellowness
Figure 6: Distribution of the entire crop by yellowness
Figure 6: Distribution of the entire crop by yellowness
Figure 6: Distribution of the entire crop by yellowness
Figure 6: Distribution of the entire crop by yellowness

:	Spinning consistency index	8
	Table 9: Summary of the spinning consistency index achieved for the entire of	crop.
		8
	Figure 9: Distribution of the entire crop by spinning consistency index	9
Cı	ultivar Summaries	10
	Figure 10: Cultivar distribution of the entire crop	10
(Candia	10
	Table 10: Summary of the grade achieved for Candia	10
	Figure 11: Distribution of Candia by grade	11
	Table 11: Summary of the length achieved for Candia.	11
	Figure 12: Distribution of Candia by length.	12
	Table 12: Summary of the strength achieved for Candia.	12
	Figure 13: Distribution of Candia by strength.	12
	Table 13: Summary of the micronaire achieved for Candia.	13
	Figure 14: Distribution of Candia by micronaire.	13
	Table 14: Summary of the short fibre index achieved for Candia	13
	Figure 15: Distribution of Candia by short fibre index	14
	Table 15: Summary of the uniformity achieved for Candia	14
	Figure 16: Distribution of Candia by uniformity.	14
	Table 16: Summary of the spinning consistency index achieved for Candia	15
	Figure 17: Distribution of Candia by spinning consistency index.	15
I	DP 1240	16
	Table 17: Summary of the grade achieved for DP 1240.	16
	Figure 18: Distribution of DP 1240 by grade.	16
	Table 18: Summary of the length achieved for DP 1240	16
	Figure 19: Distribution of DP 1240 by length	17
	Table 19: Summary of the strength achieved for DP 1240	17

	Figure 20: Distribution of DP 1240 by strength.	. 17
	Table 20: Summary of the micronaire achieved for DP 1240	. 18
	Figure 21: Distribution of DP 1240 by micronaire	. 18
	Table 21: Summary of the short fibre index achieved for DP 1240.	. 18
	Figure 22: Distribution of DP 1240 by short fibre index	. 19
	Table 22: Summary of the uniformity achieved for DP 1240	. 19
	Figure 23: Distribution of DP 1240 by uniformity	. 19
	Table 23: Summary of the spinning consistency index achieved for DP 1240.	. 20
	Figure 24: Distribution of DP 1240 by spinning consistency index	. 20
D	P 1541	. 21
	Table 24: Summary of the grade achieved for DP 1541	. 21
	Figure 25: Distribution of DP 1541 by grade.	. 21
	Table 25: Summary of the length achieved for DP 1541	. 21
	Figure 26: Distribution of DP 1541 by length	. 22
	Table 26: Summary of the strength achieved for DP 1541	. 22
	Figure 27: Distribution of DP 1541 by strength.	. 22
	Table 27: Summary of the micronaire achieved for DP 1541	. 23
	Figure 28: Distribution of DP 1541 by micronaire	. 23
	Table 28: Summary of the short fibre index achieved for DP 1541	. 23
	Figure 29: Distribution of DP 1541 by short fibre index	. 24
	Table 29: Summary of the uniformity achieved for DP 1541	. 24
	Figure 30: Distribution of DP 1541 by uniformity	. 24
	Table 30: Summary of the spinning consistency index achieved for DP 1541.	. 25
	Figure 31: Distribution of DP 1541 by spinning consistency index	. 25
Ρ	M 3225 (Paymaster)	. 26
	Table 31: Summary of the grade achieved for PM 3225	. 26
	Figure 32: Distribution of PM 3225 by grade	. 26

	Table 32: Summary of the length achieved for PM 3225.	. 26
	Figure 33: Distribution of PM 3225 by length.	. 27
	Table 33: Summary of the strength achieved for PM 3225.	. 27
	Figure 34: Distribution of PM 3225 by strength.	. 27
	Table 34: Summary of the micronaire achieved for PM 3225	. 28
	Figure 35: Distribution of PM 3225 by micronaire.	. 28
	Table 35: Summary of the short fibre index achieved for PM 3225	. 28
	Figure 36: Distribution of PM 3225 by short fibre index	. 29
	Table 36: Summary of the uniformity achieved for PM 3225	. 29
	Figure 37: Distribution of PM 3225 by uniformity	. 29
	Table 37: Summary of the spinning consistency index achieved for PM 3225.	. 30
	Figure 38: Distribution of PM 3225 by spinning consistency index	. 30
Refe	erences	. 30

Crop Summary

The initial testing for the 2021 - 2022 local cotton production season began on 9th of May 2022, and the last samples were tested on the 24th of November 2022. A total of 69 000 bales were produced and tested in this period.

Grades

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

Grade	Number of bales	Percentage
Good Middling (GM)	11 674	16.9%
Strict Middling (SM)	11 777	17.1%
Middling (MIDD)	20 736	30.1%
Strict Low Middling (SLM)	22 956	33.3%
Low Middling (LM)	1 807	2.6%
Strict Good Ordinary (SGO)	50	0.1%
Total	69 000	100%

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



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).

Length	Description	Number of bales	Percentage
0,0 - 0,97	less than 1"	116	0.2%
0,98 - 1,04	1 1/32"	5 329	7.7%
1,05 - 1,07	1 1/16"	5 112	7.4%
1,08 - 1,10	1 3/32"	7 306	10.6%
1,11 - 1,13	1 1/8"	14 709	21.3%
1,14 - 1,16	1 5/32"	17 748	25.7%
1,17 - 1,40	1 3/16" and greater	18 680	27.1%
Total		69 000	100%

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



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).

Strength	Description	Number of bales	Percentage
0,0 - 21,99	Very weak	26	0.0%
22,0 - 24,49	Weak	1 668	2.4%
24,5 - 27,99	Medium	18 808	27.3%
28,0 - 31,99	Strong	42 009	60.9%
32,0 - 45,00	Very strong	6 489	9.4%
Total		69 000	100%

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



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).

Micronaire	Description	Number of bales	Percentage
0,0 - 2,99	Very fine	3 833	5.6%
3,0 - 3,79	Fine	21 955	31.8%
3,8 - 4,79	Medium	38 071	55.2%
4,8 - 5,4	Coarse	5 141	7.5%
Total		69 000	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).

Rd	Number of bales	Percentage
0,0 - 67,49	571	0.8%
67,5 - 72,49	6 533	9.5%
72,5 - 74,99	9 661	14.0%
75,0 - 77,49	13 778	20.0%
77,5 - 79,99	14 893	21.6%
80,0 - 82,49	14 636	21.2%
82,5 - 90,0	8 928	12.9%
Total	69 000	100%

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



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).

+ b	Number of bales	Percentage
0,0 - 5,9	1 799	2.6%
6,0 - 6,9	22 349	32.4%
7,0 - 7,9	30 331	44.0%
8,0 - 8,9	11 364	16.5%
9,0 - 9,9	2 828	4.1%
10,0 - 10,9	309	0.4%
11,0 - 12,9	20	0.0%
13,0 - 20,0	0	0.0%
Total	69 000	100%

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



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).

SFI	Description	Number of bales	Percentage
0,0 - 5,99	Very low	494	0.7%
6,0 - 9,99	Low	54 709	79.3%
10,0 - 13,99	Medium	13 536	19.6%
14,0 - 17,99	High	259	0.4%
18,0 - 30,00	Very high	2	0.0%
Total		69 000	100%

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



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).

UI	Description	Number of bales	Percentage
0,0 - 76,9	Very low	387	0.6%
77,0 - 80,9	Low	32 702	47.4%
81,0 - 84,9	Medium	35 862	52.0%
85,0 - 89,0	High	49	0.1%
Total		69 000	100%

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



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).

SCI	Number of bales	Percentage
0 - 99	1 723	2.5%
100 - 119	17 637	25.6%
120 - 130	24 397	35.4%
131 - 140	17 174	24.9%
141 - 150	6 782	9.8%
151 - 170	1 287	1.9%
Total	69 000	100%

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



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

Cultivar Summaries

In terms of cultivars: Candia B2RF accounted for 46,34% of the cotton planted and Deltapine (DP) 1240 B2RF for 41,3%. In contrast, DP 1541 B2RF accounted for 6.48%, and the uptake of Paymaster (PM 3225 B2RF) was 1,82% of the entire crop. The latter is the recommended cultivar for handpicked cotton (i.e., smallholder farmers). The following statistics were calculated based on data received from gins.



Figure 100: Cultivar distribution of the entire crop

Candia

Table 10: Summary	of the grade achieved	for Candia.
-------------------	-----------------------	-------------

Grade	Number of bales	Percentage
Good Middling (GM)	7804	24.6%
Strict Middling (SM)	5056	15.9%
Middling (MIDD)	8434	26.6%
Strict Low Middling (SLM)	10181	32.1%
Low Middling (LM)	210	0.7%
Strict Good Ordinary (SGO)	18	0.1%
Total	31 703	100%



Figure 111: Distribution of Candia by grade.

Length	Description	Number of bales	Percentage
0,0 - 0,97	less than 1"	0	0.0%
0,98 - 1,04	1 1/32"	256	0.8%
1,05 - 1,07	1 1/16"	1025	3.2%
1,08 - 1,10	1 3/32"	3119	9.8%
1,11 - 1,13	1 1/8"	6034	19.0%
1,14 - 1,16	1 5/32"	8328	26.3%
1,17 - 1,40	1 3/16" and greater	12941	40.8%
Total		31 703	100%



Figure 122: Distribution of Candia by length.

Strength	Description	Number of bales	Percentage
0,0 - 21,99	Very weak	8	0.0%
22,0 - 24,49	Weak	925	2.9%
24,5 - 27,99	Medium	12166	38.4%
28,0 - 29,99	Strong	17831	56.2%
32,0 - 45,00	Very strong	773	2.4%
Total		31 703	100%

Table 12: Summary of the strength achieved for Candia.



Figure 133: Distribution of Candia by strength.

Micronaire	Description	Number of bales	Percentage
0,0 - 2,99	Very fine	2619	8.3%
3,0 - 3,79	Fine	13732	43.3%
3,8 - 4,79	Medium	15204	48.0%
4,8 - 5,4	Coarse	148	0.5%
Total		31 703	100%

Table 13: Summary of the micronaire achieved for Candia.



Figure 144: Distribution of Candia by micronaire.

SFI	Description	Number of bales	Percentage
0,0 - 5,99	Very low	378	1.2%
6,0 - 9,99	Low	24577	77.5%
10,0 - 13,99	Medium	6692	21.1%
14,0 - 17,99	High	56	0.2%
18,0 - 30,00	Very high	0	0.0%
Total		31 703	100%



Figure 155: Distribution of Candia by short fibre index.

UI	Description	Number of bales	Percentage
0,0 - 76,9	Very low	222	0.7%
77,0 - 80,9	Low	17323	54.6%
81,0 - 84,9	Medium	14124	44.6%
85,0 - 89,0	High	34	0.1%
Total		31 703	100%





Figure 166: Distribution of Candia by uniformity.

SCI	Number of bales	Percentage
0 - 99	191	0.6%
100 - 119	8770	27.7%
120 - 130	11332	35.7%
131 - 140	7083	22.3%
141 - 150	3429	10.8%
151 - 170	898	2.8%
Total	31 703	100%

Table 16: Summary of the spinning consistency index achieved for Candia.



Figure 177: Distribution of Candia by spinning consistency index.

DP 1240

Grade	Number of bales	Percentage
Good Middling (GM)	2152	7.6%
Strict Middling (SM)	4292	15.2%
Middling (MIDD)	8784	31.1%
Strict Low Middling (SLM)	11786	41.7%
Low Middling (LM)	1214	4.3%
Strict Good Ordinary (SGO)	32	0.1%
Total	28 260	100%

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



Figure 188: Distribution of DP 1240 by grade.

Length	Description	Number of bales	Percentage
0,0 - 0,97	less than 1"	92	0.3%
0,98 - 1,04	1 1/32"	2806	9.9%
1,05 - 1,07	1 1/16"	3228	11.4%
1,08 - 1,10	1 3/32"	3469	12.3%
1,11 - 1,13	1 1/8"	6502	23.0%
1,14 - 1,16	1 5/32"	7208	25.5%
1,17 - 1,40	1 3/16" and greater	4955	17.5%
Total		28 260	100%

Table 18: Summary of the length achieved for DP 1240.



Figure 199: Distribution of DP 1240 by length.

Strength	Description	Number of bales	Percentage
0,0 - 21,99	Very weak	14	0.0%
22,0 - 24,49	Weak	558	2.0%
24,5 - 27,99	Medium	3857	13.6%
28,0 - 29,99	Strong	18737	66.3%
32,0 - 45,00	Very strong	5094	18.0%
Total		28 260	100%

Table 19: Summary of the strength achieved for DP 1240.



Figure 20: Distribution of DP 1240 by strength.

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

Micronaire	Description	Number of bales	Percentage
0,0 - 2,99	Very fine	937	3.3%
3,0 - 3,79	Fine	5353	18.9%
3,8 - 4,79	Medium	17443	61.7%
4,8-5,4	Coarse	4527	16.0%
Total		28 260	100%



Figure 201: Distribution of DP 1240 by micronaire.

SFI	Description	Number of bales	Percentage
0,0 - 5,99	Very low	112	0.4%
6,0 - 9,99	Low	23025	81.5%
10,0 - 13,99	Medium	4956	17.5%
14,0 - 17,99	High	165	0.6%
18,0 - 30,00	Very high	2	0.0%
Total		28 260	100%

Table 21: Summary of the short fibre index achieved for DP 1240.



Figure 212: Distribution of DP 1240 by short fibre index.

UI	Description	Number of bales	Percentage
0,0 - 76,9	Very low	147	0.5%
77,0 - 80,9	Low	10970	38.8%
81,0 - 84,9	Medium	17128	60.6%
85,0 - 89,0	High	15	0.1%
Total		28 260	100%





Figure 223: Distribution of DP 1240 by uniformity.

SCI	Number of bales	Percentage
0 - 99	1160	4.1%
100 - 119	6254	22.1%
120 - 130	9686	34.3%
131 - 140	8036	28.4%
141 - 150	2800	9.9%
151 - 170	324	1.1%
Total	28 260	100%

Table 23: Summary of the spinning consistency index achieved for DP 1240.



Figure 234: Distribution of DP 1240 by spinning consistency index.

DP 1541

Grade	Number of bales	Percentage
Good Middling (GM)	1026	23.1%
Strict Middling (SM)	1191	26.9%
Middling (MIDD)	1748	39.4%
Strict Low Middling (SLM)	463	10.4%
Low Middling (LM)	5	0.1%
Strict Good Ordinary (SGO)	0	0.0%
Total	4 433	100%

Table 24: Summary of the grade achieved for DP 1541.



Figure 25: Distribution of DP 1541 by grade.

Length	Description	Number of bales	Percentage
0,0 - 0,97	less than 1"	1	0.0%
0,98 - 1,04	1 1/32"	117	2.6%
1,05 - 1,07	1 1/16"	103	2.3%
1,08 - 1,10	1 3/32"	384	8.7%
1,11 - 1,13	1 1/8"	1566	35.3%
1,14 - 1,16	1 5/32"	1702	38.4%
1,17 - 1,40	1 3/16" and greater	560	12.6%
Total		4 433	100%

Table 25: Summary of the length achieved for DP 1541.



Figure 26: Distribution of DP 1541 by length.

Strength	Description	Number of bales	Percentage
0,0 - 21,99	Very weak	0	0.0%
22,0 - 24,49	Weak	29	0.7%
24,5 - 27,99	Medium	1539	34.7%
28,0 - 29,99	Strong	2553	57.6%
32,0 - 45,00	Very strong	312	7.0%
Total		4 433	100%

Table 26: S	Summary of the	strength achieve	ed for DP 1541
-------------	----------------	------------------	----------------



Figure 27: Distribution of DP 1541 by strength.

	-		
Micronaire	Description	Number of bales	Percentage
0,0 - 2,99	Very fine	67	1.5%
3,0 - 3,79	Fine	1394	31.4%
3,8 - 4,79	Medium	2508	56.6%
4,8 - 5,4	Coarse	464	10.5%
Total		4 433	100%

Table 27: Summary of the micronaire achieved for DP 1541.



Figure 28: Distribution of DP 1541 by micronaire.

SFI	Description	Number of bales	Percentage
0,0 - 5,99	Very low	3	0.1%
6,0 - 9,99	Low	3721	83.9%
10,0 - 13,99	Medium	709	16.0%
14,0 - 17,99	High	0	0.0%
18,0 - 30,00	Very high	0	0.0%
Total		4 433	100%

Table 28: Summary of the short fibre index achieved for DP 1541.



Figure 29: Distribution of DP 1541 by short fibre index.

UI	Description	Number of bales	Percentage
0,0 - 76,9	Very low	0	0.0%
77,0 - 80,9	Low	2024	45.7%
81,0 - 84,9	Medium	2409	54.3%
85,0 - 89,0	High	0	0.0%
Total		4 433	100%





Figure 30: Distribution of DP 1541 by uniformity.

SCI	Number of bales	Percentage
0 - 99	23	0.5%
100 - 119	1102	24.9%
120 - 130	1835	41.4%
131 - 140	1125	25.4%
141 - 150	311	7.0%
151 - 170	37	0.8%
Total	4 433	100%

Table 240: Summary of the spinning consistency index achieved for DP 1541.



Figure 241: Distribution of DP 1541 by spinning consistency index.

PM 3225 (Paymaster)

Grade	Number of bales	Percentage
Good Middling (GM)	0	0.0%
Strict Middling (SM)	640	51.4%
Middling (MIDD)	510	41.0%
Strict Low Middling (SLM)	70	5.6%
Low Middling (LM)	24	1.9%
Strict Good Ordinary (SGO)	0	0.0%
Total	1 244	100%

Table 251: Summary of the grade achieved for PM 3225.



Figure 252: Distribution of PM 3225 by grade.

Length	Description	Number of bales	Percentage
0,0 - 0,97	less than 1"	22	1.8%
0,98 - 1,04	1 1/32"	887	71.3%
1,05 - 1,07	1 1/16"	249	20.0%
1,08 - 1,10	1 3/32"	70	5.6%
1,11 - 1,13	1 1/8"	16	1.3%
1,14 - 1,16	1 5/32"	0	0.0%
1,17 - 1,40	1 3/16" and greater	0	0.0%
Total		1 244	100%

Table 262: Summary of the length achieved for PM 3225.



Figure 263: Distribution of PM 3225 by length.

Strength	Description	Number of bales	Percentage
0,0 - 21,99	Very weak	0	0.0%
22,0 - 24,49	Weak	9	0.7%
24,5 - 27,99	Medium	275	22.1%
28,0 - 29,99	Strong	870	69.9%
32,0 - 45,00	Very strong	90	7.2%
Total		1 244	100%

Table 33: Summary of the strength achieved for PM 3225.



Figure 34: Distribution of PM 3225 by strength.

Micronaire	Description	Number of bales	Percentage
0,0 - 2,99	Very fine	93	7.5%
3,0 - 3,79	Fine	319	25.6%
3,8 - 4,79	Medium	832	66.9%
4,8-5,4	Coarse	0	0.0%
Total		1 244	100%



Figure 35: Distribution of PM 3225 by micronaire.

SFI	Description	Number of bales	Percentage
0,0 - 5,99	Very low	0	0.0%
6,0 - 9,99	Low	1117	89.8%
10,0 - 13,99	Medium	127	10.2%
14,0 - 17,99	High	0	0.0%
18,0 - 30,00	Very high	0	0.0%
Total		1 244	100%

Table 35: Summary of the short fibre index achieved for PM 3225.



Figure 36: Distribution of PM 3225 by short fibre index.

UI	Description	Number of bales	Percentage
0,0 - 76,9	Very low	1	0.1%
77,0 - 80,9	Low	495	39.8%
81,0 - 84,9	Medium	748	60.1%
85,0 - 89,0	High	0	0.0%
Total		1 244	100%





Figure 37: Distribution of PM 3225 by uniformity.

SCI	Number of bales	Percentage
0 - 99	4	0.3%
100 - 119	507	40.8%
120 - 130	591	47.5%
131 - 140	132	10.6%
141 - 150	10	0.8%
151 - 170	0	0.0%
Total	1 244	100%

Table 37: Summary of the spinning consistency index achieved for PM 3225.



Figure 38: Distribution of PM 3225 by spinning consistency index.

References

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