



Project CULTIVAR TRIAL
Producer Contractor
Locality Groblersdal
Planting date 14-Nov-22
Layout Randomized block design with 4 repetitions
Plant population densities 86 000 plants/ha & 100 000 plants/ha
Plot size: 40m²

Project leader Coleen Fourie
(Cotton and Pesticide Research and Development)

Irrigation: 4x Round-up Powermax @ 1.7 l/Ha
 4x Labourer to remove morning glories

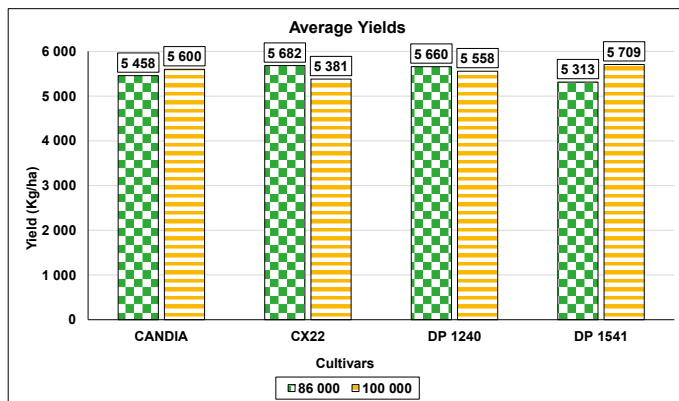
Rain
Pest Control: 2 x Lambda @ 200 ml/Ha
 2x Lambda @ 200ml/Ha & Methomyl @ 250g/Ha (Jassids & Cotton Stainers)
 2x Mospilan @ 75g/Ha (Aphids)

Fertilization: 430 kg/Ha 4:3:4 (31) on 13/11/2022
 250 kg/Ha LAN (28) on 5/12/2022 (3 weeks after planting)
 200 kg/Ha LAN (28) on 19/12/2023 (6 weeks after planting)
 450 kg/Ha LAN (28) on 4/01/2023 (8 weeks after planting)

T1.1/23

Treatments

1. Candia 86 000 plants/ha
2. Candia 100 000 plants/ha
3. CX22 86 000 plants/ha
4. CX22 100 000 plants/ha
5. DP1541 86 000 plants/ha
6. DP1541 100 000 plants/ha

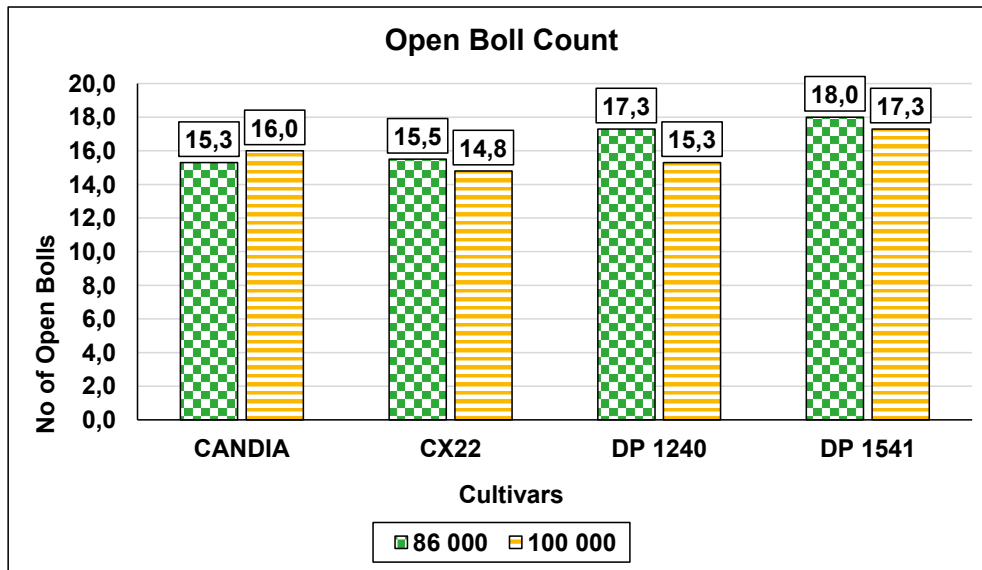
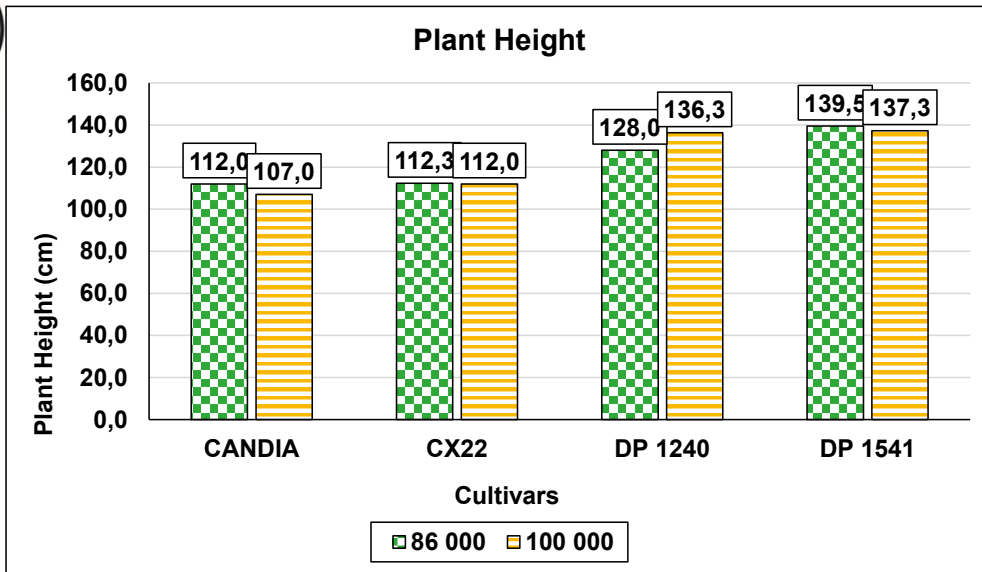


Remark: The average yield and fibre yield for the trial was 5544 kg/ha and 2382 respectively.

Variety entry/plant population	Germination %		Significance < 0,05	(p)
	Groblersdal			
Candia 86000	91.0		a	
Candia 100000	88.7		ab	
CX 22 86000	85.7		ab	
CX 22 100000	89.6		ab	
DP1240 86000	79.8		b	
DP1240 100000	85.8		ab	
DP1541 86000	84.6		ab	
DP 1541 100000	83.9		ab	
Tukey's HSD P=.05	10.627			
Standard Deviation	4.48			
CV	5.2			
Grand Mean	86.128			

Variety entry (plants/ha)	% 1st Pick		% 2nd Pick		% 3rd Pick	
	plant		plant		193 days after plant	
Candia 86 000	19,1	ns	34,1	ns	46,9	ns
Candia 100 000	13,0	ns	43,6	ns	43,4	ns
CX 22 86 000	13,5	ns	41,4	ns	45,2	ns
CX 22 100 000	18,0	ns	42,1	ns	40,0	ns
DP1240 86 000	13,8	ns	40,1	ns	46,1	ns
DP1240 100 000	15,1	ns	38,8	ns	46,1	ns
DP1541 86 000	18,5	ns	35,2	ns	46,4	ns
DP 1541 100 000	16,7	ns	36,4	ns	46,9	ns
Tukey's HSD P=.05	15,604		18,975		16,581	
Standard Deviation	6,579		8		6,991	
CV	41,25		20,55		15,5	
Grand Mean	15,95		38,938		45,113	

Variety entry/plant population	Yield (Kg/Ha)		Fibre Yield (Kg/ha)		Fibre %		Boll size (g)	
	Groblersdal		Groblersdal		Groblersdal		Groblersdal	
Candia 86000	5458	ns	2368	ns	43,4	bc	5,2	ab
Candia 100000	5600	ns	2472	ns	44,1	ab	5	b
CX 22 86000	5682	ns	2520	ns	44,4	ab	5	b
CX 22 100000	5381	ns	2462	ns	45,7	a	4,9	b
DP1240 86000	5660	ns	2334	ns	41,2	d	5,5	ab
DP1240 100000	5558	ns	2281	ns	41,1	d	5,2	ab
DP1541 86000	5313	ns	2197	ns	41,4	cd	5,9	a
DP 1541 100000	5709	ns	2422	ns	42,5	bcd	5,3	ab
Tukey's HSD P=.05	871,884		344,538		2,14		0,725	
Standard Deviation	367,606		145,265		0,902		0,306	
CV	6,63		6,1		2,1		5,83	
Grand Mean	5544,876		2382,078		42,978		5,244	



Variety entry/plant population	Plant height (cm)	
	193 days after planting	
Candia 86000	112.0	ab
Candia 100000	107.0	b
CX 22 86000	112.3	ab
CX 22 100000	112.0	ab
DP1240 86000	128.0	ab
DP1240 100000	136.3	ab
DP1541 86000	139.5	a
DP 1541 100000	137.3	a
Tukey's HSD P=.05	29.61	
Standard Deviation	12.49	
CV	10.15	
Grand Mean	123.03	

Remark: Candia at 100 000 was shorter and DP 1541 had the tallest plants

Variety entry/plant population	Open boll count	
	193 days after planting	
Candia 86000	15.3	ns
Candia 100000	16.0	ns
CX 22 86000	15.5	ns
CX 22 100000	14.8	ns
DP1240 86000	17.3	ns
DP1240 100000	15.3	ns
DP1541 86000	18.0	ns
DP 1541 100000	17.3	ns
Tukey's HSD P=.05	6.42	
Standard Deviation	2.71	
CV	16.76	
Grand Mean	16.16	



Quality parameters	Length (UHML - Inches)		Uniformity		Strength (gram/tex)		Micronaire		Spining Consistency index (SCI)	
	86 000 Plants/ha	100 000 Plants/ha	86 000 Plants/ha	100 000 Plants/ha	86 000 Plants/ha	100 000 Plants/ha	86 000 Plants/ha	100 000 Plants/ha	86 000 Plants/ha	100 000 Plants/ha
Treatments										
Candia	1.182 (1 3/16")	1.184 (1 3/16")	82,2	82,1	28,4	27,8	3,7	3,6	133	133
CX22	1.179 (1 3/16")	1.186 (1 1/316")	82,8	82,2	28,2	29,3	4,1	4,0	134	135
DP 1240	1.163 (1 5/32")	1.178 (1 3/16")	83,0	83,3	30,7	32,4	4,4	4,5	136	142
DP 1541	1.148 (1 5/32")	1.170 (1 5/32")	82,9	83,1	29,7	30,0	4,5	4,4	133	136
Std dev	0,034	0,027	0,83	1,03	1,60	2,21	0,47	0,41	6,3	7,4

Length: No significant differences in length. Long fibre.

Uniformity: Length uniformity is good

Strength: DP 1240 at 100 000 plants/ha had the highest strength of 32.4g/tex.

Micronaire: Candia at 86 000 and 100 000 plants/ha had the lowest micronaire of 3.7 and 3.6 respectively.

SCI: Mic values bring the SCI below 140

Conclusion:

The following conclusion can be made for the 2022/2023 season. All the entries at both the 86 000 and 100 000 plants/ha compare very good for fruit set, yield and quality in Groblersdal, South Africa. Interestingly CX 22 splits the difference between Candia and the DP cultivars in terms of fibre quality characteristics.