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RESEARCH REPORT: BIOLOGICAL PRODUCTS TRIAL, 2020/2021 SEASON

Aim: To evaluate different biological products in a dryland setup, and their effect on root stimulation, fibre quality and yield.





Project **BIOLOGICAL PRODUCTS TRIAL**
 Producer J. du Plessis
 Locality Sweizer-Reneke
 Variety Candia, DP 1531, DP 1541, DP 1240
 Layout
 Plant date 03/11/2020

Project leader Dr. Tilla van der Westhuizen
 Co-workers: Jacob Nakane, Piet Maja
 Weed control
 Irrigation:



	Dates	Post planting
Counts	03-Dec-20	Seedling samples
	07-Dec-20	Seedling weights
	07-Dec-20	Root weights
	07-Dec-20	Root lengths
	07-Dec-20	Root photographs
	31-May-21	Plant heights
	31-May-21	Boll counts
	31-May-21	Seedcotton yields
	31-May-21	Fibre quality samples

Treatments

Varieties	Treatments	Dosages per ha (ml)			
		DP1531	DP1541	DP1240	Candia
02-Nov-20	HP	1 l ha ⁻¹	1 l ha ⁻¹	1 l ha ⁻¹	1 l ha ⁻¹
02-Nov-20	Biocell	0.3 l ha ⁻¹	0.3 l ha ⁻¹	0.3 l ha ⁻¹	0.3 l ha ⁻¹
02-Nov-20	Cosmoroot	0,4 l ha ⁻¹	0,4 l ha ⁻¹	0,4 l ha ⁻¹	0,4 l ha ⁻¹
02-Nov-20	Control	Zero	Zero	Zero	Zero

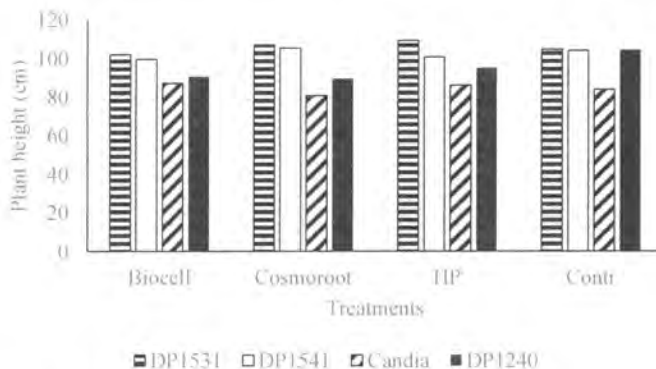


Figure 1. Plant height (cm) at the Biostimulant trial, Schweizer-Reneke, 2020/2021.

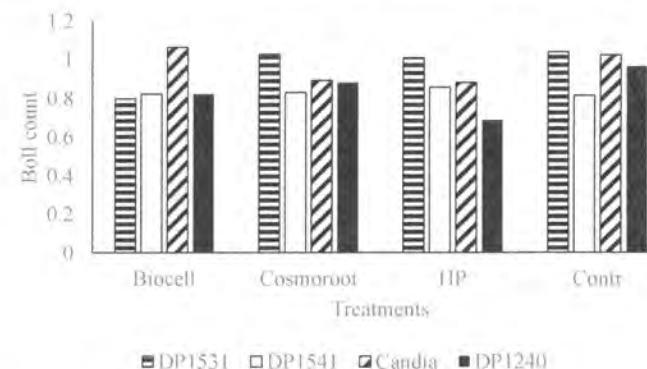


Figure 2. Boll count at the Biostimulant trial, Schweizer-Reneke, 2020/2021.

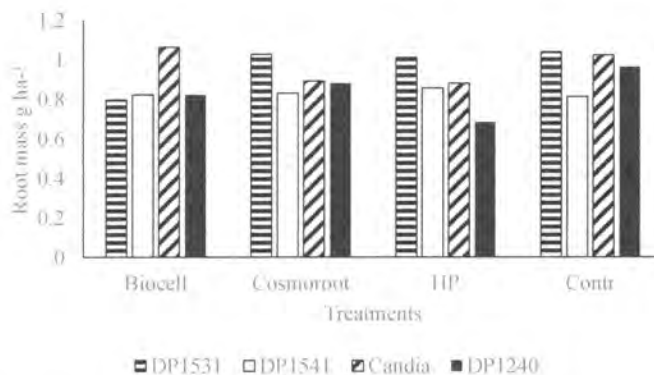


Figure 3. Root mass (g ha⁻¹) at the Biostimulant trial, Schweizer-Reneke, 2020/2021.

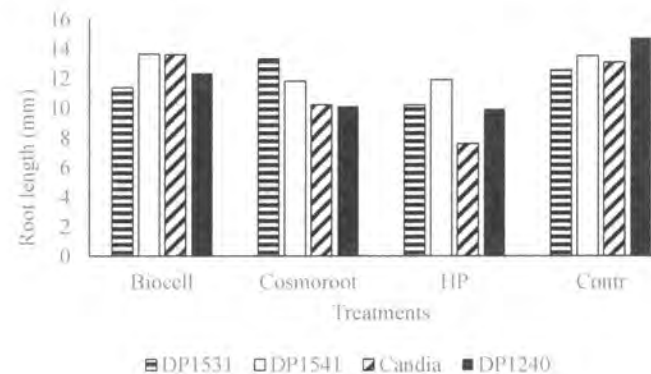


Figure 4. Root length (mm) at the Biostimulant trial, Schweizer-Reneke, 2020/2021.



Fibre Quality

Tabel 1. Saadkatoen opbrengs (kg ha⁻¹), vesel %, en veselopbrengs (kg ha⁻¹) te Schweizer-Reneke, 2020/2021.

Parameters	Kultivars			
	DP1531	DP1541	Candia	DP1240
Saadkatoen opbrengs				
Kontrole	5203	5172	5796	5555
Biocell	5037	5018	5999	5296
Cosmoroot	4777	4500	5444	4777
HP	4574	4018	5166	4646
Vesel %				
Kontrole	39.7	40.3	40.7	37.3
Biocell	41.7	40.3	41.3	39.7
Cosmoroot	41.7	40.7	42.0	39.3
HP	41.7	41.0	39.3	40.4
Veselopbrengs				
Kontrole	2064	2074	2331	2073
Biocell	2097	2020	2483	2077
Cosmoroot	1999	1818	2279	1886
HP	1920	1649	2030	1869



Results

Tabel 2. Mikronër, vesel lengte (mm) en vesel sterkte (g/tex) te Schweizer-Reneke, 2020/2021

Parameters	Kultivars			
	DP1531	DP1541	Candia	DP1240
Mikronër				
Kontrole	3.8	4.3	3.8	4.3
Biocell	3.8	4.1	3.8	4.5
Cosmoroot	4.1	4.2	3.8	4.9
HP	4.0	4.4	3.3	4.7
Lengte (mm)				
Kontrole	30.9	30.4	30.8	30.9
Biocell	30.6	29.6	30.4	29.2
Cosmoroot	30.4	30.7	30.7	29.9
HP	30.1	30.0	30.3	29.1
Sterkte (g/tex)				
Kontrole	29.5	29.7	26.9	31.6
Biocell	29.1	29.2	28.9	29.2
Cosmoroot	29.1	26.7	28.6	31.7
HP	29.2	28.9	29.8	29.9

Conclusions

- 1 Yield differed significantly between cultivars, with the controls of DP1240, DP1541 and the biocell treatment of Candia having the highest yields, resulting in higher seed cotton yields than DP1531.
- 2 The effect of treatment were significantly different, with Biocell resulting in significantly higher yields than other treatments (p < 0.001).
- 3 Although the interaction between cultivars per treatment did not differ significantly, Candia that was treated with Biocell gave the highest seedcotton yield of 5999 kg ha⁻¹. This resulted in a profit of R1827 /ha which is significant for the farmer.
- 4 All the qualities were within the acceptable ranges except for when Candia that was treated with HP with a 3.3 micronaire.