

Trial 5. HYC PGR x harvest date interaction

Objective: To assess the value of PGRs with delayed harvest in HRZ regions on maintaining yield and reducing head loss, brackling and lodging.

Key messages:

- Planet harvested on time yielded 4.79t/ha and 1t less at 3.75 when harvest was delayed by 21 days.
- Pixel yielded 9.25t/ha when harvested on time, and 2t less when harvest was delayed by 21 days at 7.37t/ha.
- PGRs had a significant impact on plant architecture, however there was minimal lodging in this experiment.
- PGR yield responses were variable but never yielded lower than untreated when harvest was delayed.
- This highlights the differences in yield loss to head loss and shattering in different cultivars and suggests harvest logistics are likely to be more effective than PGRs in managing yield losses.
- A single application of a PGR Moddus @GS31 did not reduce height in Pixel and Planet despite significantly reducing the first internode height demonstrating some evidence of bounce back.
- A two-spray approach of a PGR Moddus @GS31 and Moddus @GS39 significantly reduced height from 108cm to 99cm in Pixel, and from 85cm to 80cm in Planet.
- A two-spray approach of a PGR Moddus @GS31 and Ethephon @GS39 significantly reduced height similar to the Moddus combination.
- Peduncle length was shortened from 25.6 to 21.8cm in Pixel, and from 21.4 to 16.7cm in Planet when the second application of a Moddus PGR was applied at GS39, the ethephon PGR reduced peduncle length to a greater degree down to 19.8cm in pixel, and 11.9cm in Planet.

Treatments: 4 PGR management approaches applied to two cultivars, to be harvested at two harvest dates (on time: 14 December 2021, delayed: 4 January 2022).

Plant growth regulators (PGR) treatments

1. Untreated
2. GS31 PGR (Moddus® Evo 200 mL/ha @GS31) & Moddus Evo 200mL/ha @GS33-37).
3. GS31 + GS39 PGR (Moddus® Evo 200 mL/ha @GS31 & Moddus Evo 200mL/ha @39).
4. GS31 + G39 PGR (Europe Style) - (Moddus® Evo 200 mL/ha @GS31 & Ethephon 500mL/ha @39).

Cultivars:

Pixel (6 row Winter) and Planet

Table 1. Influence of harvest date, variety and canopy management regime on grain yield (t/ha).

	<i>RGT Planet</i>	<i>Pixel</i>	<i>Mean</i>
Variety	4.27	8.31	
LSD	0.26	P-Value	<0.001
Harvest Date			
<i>On time</i>	4.79	9.25	7.02
<i>Delayed 3 weeks</i>	3.75	7.37	5.56

Harvest Date Management	LSD	0.31	P-Value	<0.001
Harvest Date x Variety	LSD	0.38	P-Value	<0.001
Canopy Management Regime				
Untreated		4.56	8.07	6.32
GS31 PGR		4.20	8.32	6.26
GS31 + GS39 PGR		4.41	8.73	6.57
GS31 + GS39 PGR (Ethephon)		3.92	8.11	6.02
Canopy Management Regime	LSD	0.31	P-Value	0.230
Variety x Canopy Mgmt Regime	LSD	0.48	P-Value	0.485
Harvest Date. x Canopy Mgmt. Regime				
On Time				
Untreated		5.03	9.07	7.05
GS31 PGR		4.80	9.34	7.07
GS31 + GS39 PGR		5.01	9.48	7.25
GS31 + GS39 PGR (Ethephon)		4.32	9.11	6.72
Delayed 3 weeks				
Untreated		4.09	7.08	5.59
GS31 PGR		3.60	7.29	5.45
GS31 + GS39 PGR		3.80	7.98	5.89
GS31 + GS39 PGR (Ethephon)		3.51	7.12	5.32
Harvest Date x Canopy Mgmt	LSD	0.49	P-Value	0.966
Harvest Date x Canopy Mgmt x Variety	LSD	0.71	P Value	0.894

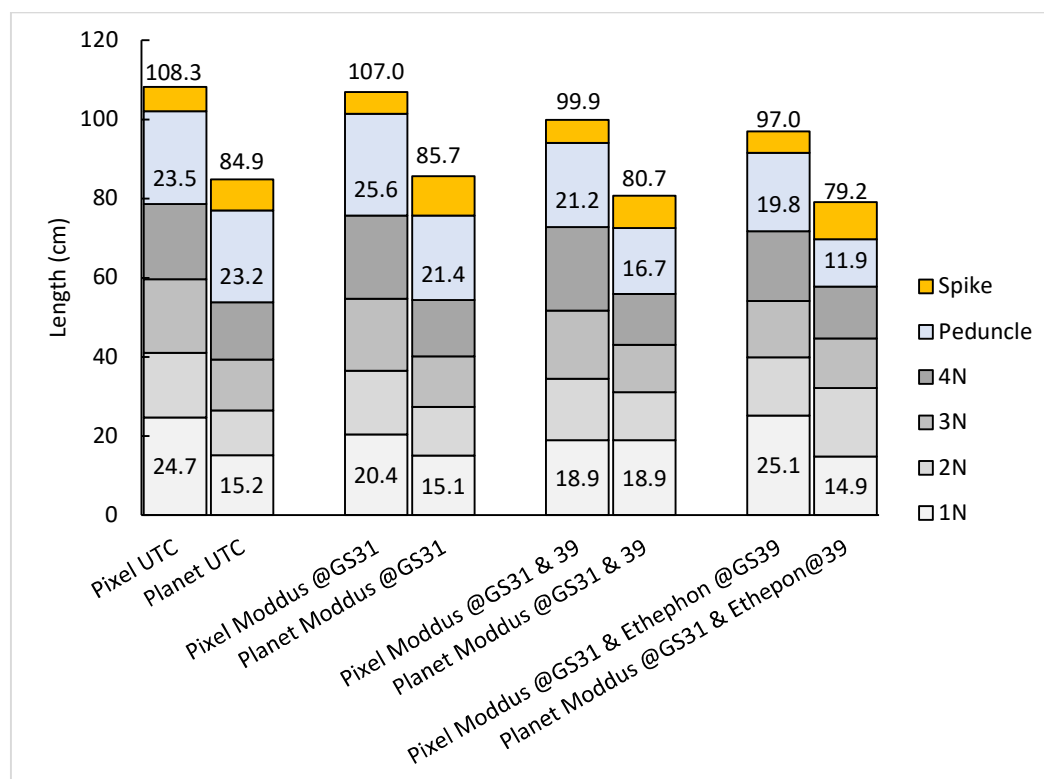


Figure 1. Influence of harvest date, variety and canopy management regime on spike, peduncle and internode lengths (cm) at harvest (GS89).