

Response to intensive management with PGRs in winter wheat

2021

Objectives

1. To determine the effect of the newest plant growth regulators (PGRs) on winter wheat performance and profitability, including lodging potential, grain yield and quality.
2. To determine the impact of PGRs within an integrated approach to increase profitability, reduce lodging potential, increase grain yields and to maintain or increase grain quality.

Treatments

- The on-farm trial consists of strips with and without a PGR applied as well as two nitrogen rates:
 - Check: No PGR
 - PGR Treatment:
 - Manipulator applied at 0.7 L / acre (GS 30-32)
 - Moddus applied at 0.42 L/ac (GS 30-32)
 - Nitrogen Rates (Source of nitrogen can be up to the discretion of the grower):
 - 130 lbs of actual N per acre
 - 180 lbs of actual N per acre
- Three replicates minimum
- Field length strips (minimum 200 m)
- Strips must be randomized (see example below)
- Timing of PGR application: GS 30 – 32
- Each strip must be at least one width of the applicator, which must be as wide or wider than the combine header.
- Other requirements: ideal fields will be those planted early or at an optimal time, where lodging may be a concern. All strips will be sprayed with a fungicide at flowering.

Measurements

- Grain yield of each replicate (strip) for each treatment, grain moisture, 1000 kernel weight, DON, % crude protein
- Weather temperature and precipitation taken daily over the growing season
- Dates of flowering (GS65) and physiological maturity for each strip
- Crop injury (1 and 2 wk after PGR application)
- % lodging at GS70, GS80 and harvest

- Final plant height

Background information required

- Crop information: Variety used, planting date, target population, starter fertilizer program, herbicide use, etc.
- Crop rotation history (past 3 years minimum)
- Soil series or type
- Recent soil tests if available
- History of manure use
- Drainage information (tiled or not and how well drained it is)

Headland	130 lbs of actual N	101	No PGR
		102	PGR
	180 lbs of actual N	103	PGR
		104	No PGR
	180 lbs of actual N	201	No PGR
		202	PGR
	130 lbs of actual N	203	PGR
		204	No PGR
	130 lbs of actual N	301	No PGR
		302	PGR
180 lbs of actual N	303	PGR	
	304	No PGR	

Headland

Example plot design. Randomization of treatments is just an example and should vary at each site.

If you have any questions please contact Joanna Follings at joanna.follings@ontario.ca or 519-400-7124.