

Response of Timothy Seed Crops to Plant Growth Regulators 2020 to 2023 Peace River Region

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Trials Conducted By: SARDA Ag Research and Peace Region Forage Seed Association

Objectives

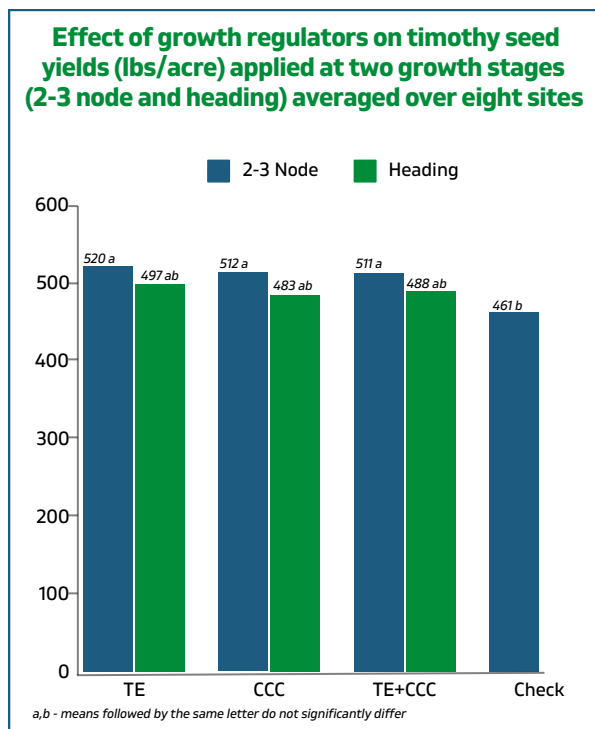
- To determine the effect of plant growth regulators (PGR) Moddus (TE) and Manipulator (CCC) and their mixture applied at 2-3 node stage and early heading stage on timothy seed crops.

Trial Details

- Seven treatment small plot replicated trials completed on eight timothy stands over four years (2020-2023). Stands ranged in age from two to five years.
- Data collected: plant heights, lodging, seed yields, and dockage.

Results

- Plant Heights and Lodging: All PGR treatments were effective at reducing plant heights and lodging. Applications at the 2-3 node stage were most effective. Moddus + Manipulator was most effective at reducing both lodging and plant heights.
- Seed Yield: Seed yields were significantly increased by PGRs, particularly when applied at the 2-3 node stage. Seed yields ranged from 86% to 138% of the check depending on the field, year, PGR and stage of application. Manipulator applied at the 2-3 node stage increased seed yields by 10% with a range of 101% to 122% of the check over all sites. Treatments with Moddus did cause some yield loss at some sites where precipitation was below average.



Timothy seed yield responses following the application of growth regulators averaged over eight sites from 2020 to 2023.

Growth Regulator	Stage	Rate l/acre	Cost \$/acre	Average increase in seed yield over untreated check*		Range of increase in seed yields over untreated check*	
				lbs/acre	%	lbs/acre	%
Moddus	2-3 node	0.537	23	+ 42	+ 9	- 50 to + 176	89 to 138
Manipulator	2-3 node	1.0	27	+ 52	+ 10	+ 5 to + 102	101 to 122
Moddus + Manipulator	2-3 node	0.250 + 0.250	17	+ 52	+ 10	- 64 to + 120	86 to 126
Moddus	Heading	0.537	23	+ 28	+ 6	- 55 to + 147	88 to 132
Manipulator	Heading	1.0	27	+ 23	+ 5	- 60 to + 83	87 to 118
Moddus + Manipulator	Heading	0.250 + 0.250	17	+ 19	+ 4	- 51 to + 97	89 to 121

*Untreated check yield average 461 lbs/acre

Recommendations and Learnings

- PGRs applied to established timothy show potential for use, particularly on strong stands and with good moisture conditions. Manipulator at the 2-3 node stage was the most consistent treatment at increasing seed yields over a wide range of stands and conditions. The mix of Moddus + Manipulator and Moddus alone was very effective at reducing plant heights and lodging but did cause some seed yield loss when precipitation was poor.
- Field demonstrations should be conducted to show growers the effects of PGRs on timothy seed crops. Further studies should be conducted to evaluate the effects of PGRs tank mixed with herbicides on timothy seed crops.
- At this point in time, URMULE are not in place for timothy on the Moddus or Manipulator label.

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