Response of Creeping Red Fescue Seed Crops to Plant Growth Regulators 2019 to 2022 Peace River Region

The Seed Head #35

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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 (11.3%), Manipulator (620 g/L) and their mixture applied at 2-3 node and early heading stages on creeping red fescue seed crops.

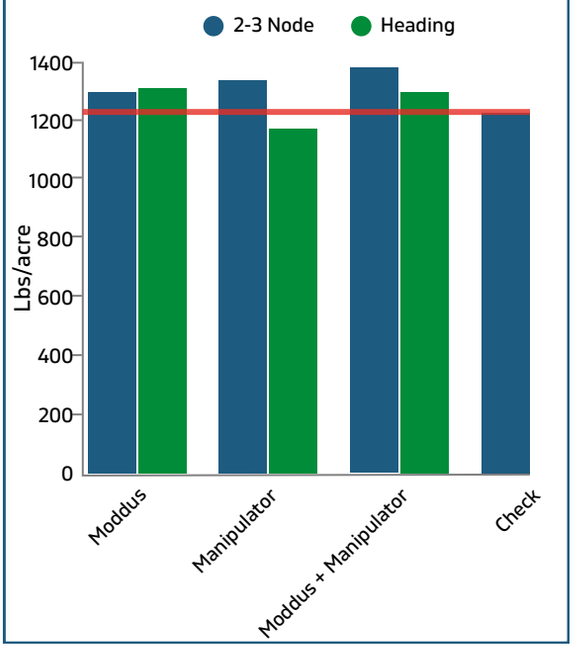
Trial Details

- Six creeping red fescue stands in their first year of production showing high yield potential and uniform growth were selected.
- Small plot replicated trials completed on grower fields from 2019 to 2022.
- Seven treatment trial. Three PGR treatments applied at 2-3 node and heading stages: Moddus (trinexapac ethyl) at 0.700 l/acre; Manipulator (chlormequat chloride) at 1.0 l/acre; Moddus at 0.445 l/acre + Manipulator at 0.500 l/acre.
- Treatment costs: Moddus $31/acre; Manipulator $27/acre; Moddus + Manipulator $33/acre.
- Data collected: plant heights, lodging and seed yields.

Results

- Plant Heights and Lodging: All PGR treatments reduced plant heights and lodging. Applications at the 2-3 node stage were more effective than applications at the heading stage. Moddus + Manipulator was the most effective treatment at reducing both lodging and plant heights.
- Seed Yield: On average, all PGR applications showed an increase in seed yield. The applications of PGRs were most effective at increasing seed yields when applied at the 2-3 node stage. Seed yields following PGR applications ranged from 87% to 137% of the untreated check. However, the mixture of Moddus + Manipulator applied at the 2-3 node stage showed consistently higher increase in the seed yields than the other treatments.

Effect of PGRs on first year creeping red fescue seed yields averaged over six sites (2019-2022)



First year stand creeping red fescue seed yield responses following the application of growth regulators averaged over six sites from 2019 to 2022.

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**	
				% of check	lbs/acre	% of check	lbs/acre
Moddus	2-3 node	0.700	31.00	+ 8	+ 98	101 to 119	12 to 233
Manipulator	2-3 node	1.0	27.00	+ 9	+ 111	99 to 119	-12 to 233
Moddus + Manipulator	2-3 node	0.445 + 0.500	33.00	+ 16	+ 196	105 to 137	62 to 455
Moddus	Heading	0.700	31.00	+ 9	+ 111	96 to 123	-49 to 283
Manipulator	Heading	1.0	27.00	+ 1	+ 12	87 to 109	-160 to 111
Moddus + Manipulator	Heading	0.445 + 0.500	33.00	+ 8	+ 98	97 to 124	-37 to 295

**Cost based on 2024 suggested retail price* ***Untreated check yield average 1229 lbs|acre*

Recommendations and Learnings

- Creeping red fescue stands showing high seed yield potential in combination with good moisture conditions and fertility will respond well to PGRs and can provide an economical return. PGRs can also reduce lodging which improves swathing conditions. The mix of Moddus + Manipulator applied at 2-3 node stage appears to be the most effective treatment.
- Further studies to find the optimum rate of Moddus + Manipulator and their interaction with herbicides is needed.
- At this point in time, URMULE are not in place for creeping red fescue on the Moddus or Manipulator label.

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