



Pre-Emerge Herbicides for 2018 ...

Over the past few years, waterhemp has become the most widespread weed control challenge in the Minn-Dak growing area. In fact, 75% of the growers that attended the 2018 NDSU/U of MN Sugarbeet Production Seminar at the Wahpeton Eagles indicated that waterhemp was their worst weed problem this past growing season.

It is important to keep in mind that the planting date dictates the weed control strategy for waterhemp. In 2017, we had just shy of 60,000 acres planted on April 20th. This early planting enabled the beets to reach their 2-lf stage, which is the 'application trigger' for the layby application of chloroacetamide herbicides (i.e. Dual-Magnum, Outlook and Warrant), well before mid-May when waterhemp emergence kicked into high gear. When applied and activated before weed emergence, this 'chemical barrier' gave good-to-excellent waterhemp control in most of our commercial fields. This year, an April planting is becoming more and more unlikely as the snow continues to fall, and as such, the likelihood of sugarbeets emerging around the same time as waterhemp is becoming a reality. Keeping this chemical barrier in mind, the use of a pre-emerge herbicide is going to be a MUST in order to keep fields free of waterhemp this coming season.



Pre-emerge herbicides at work in research trials during the 2014 growing season (Herman, MN). The center 4 rows of the 6-row plot are treated.

Sugarbeet Planting Date	Waterhemp Control Options
<p>Planting Sugarbeets in April</p>	<ul style="list-style-type: none"> • Split lay-by application (early postemergence / postemergence) of chloroacetamide herbicides applied at 2-lf sugarbeet fb 6-lf sugarbeet • Dual Magnum and/or ethofumesate PRE followed by a split lay-by application at 2 to 4-lf stage fb 6 to 8-lf stage • Single lay-by application when sugarbeet are at the 2-lf stage or greater
<p>Planting Sugarbeets in May</p>	<ul style="list-style-type: none"> • Dual Magnum and/or ethofumesate PRE followed by a split lay-by
<p>Rescue Treatment</p>	<ul style="list-style-type: none"> • Be prepared to rescue with Betamix + ethofumesate; UpBeet* + ethofumesate; or Betamix + UpBeet* • Hand Labor and/or Cultivation <p style="text-align: right;"><i>*Be aware of resistant biotypes</i></p>

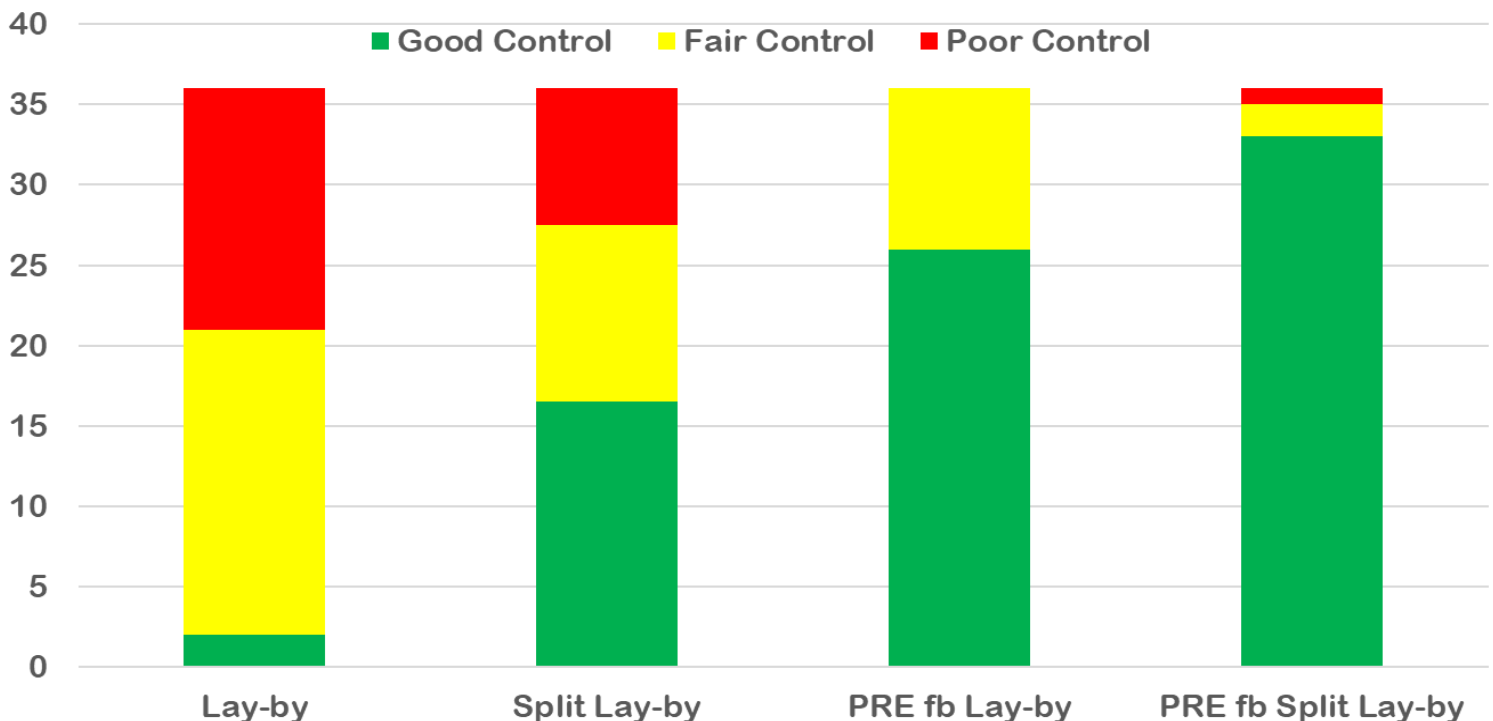
What Are My Options For Pre-Emerge Herbicides?

Herbicide	Rate	Pros	Cons
Ro-Neet SB	4 to 5.3 pt/A	Low risk of crop injury	Needs to be pre-plant incorporated
Ethofumesate	2 to 3 pt/A	4 weeks of waterhemp control	Will thin stand on grass cover crops (especially on lighter soil types)
	6 to 7.5 pt/A	Good-excellent waterhemp control for 8-10 weeks (especially in higher organic matter soils)	Unlikely that grass cover crops will emerge through the herbicide
Dual Magnum	0.5 to 0.75 pt/A	2-3 weeks waterhemp control	Generally safe to cover crops

So What Residual Herbicide Program Should I Use?

Keep in mind that pre-emergence herbicides do not provide season-long waterhemp control. Waterhemp biotypes resistant to glyphosate and UpBeet make postemergence waterhemp control (even rescue control) a risky strategy at best.

Across years, application timing is MUCH more important than the choice of herbicide when it comes to waterhemp. In the graph below, waterhemp control treatments from NDSU/U of MN research plots were ranked in numerical order from greatest control to least control. Clusters were titled 'good', 'fair' and 'poor'; corresponding to 80% or greater waterhemp control, 80 to 65% waterhemp control, and 65 to 40% waterhemp control, respectively. Herbicides were combined and grouped by application timing into four classes: lay-by, split lay-by, PRE followed by lay-by, and PRE followed by split lay-by. Data indicates that the use of a preemergence herbicide followed by a chloroacetamide herbicide applied at the 2-If stage and followed by a repeat application 14 to 21 days later provided the most consistent waterhemp control across locations and years.



A special thanks to Dr. Tom Peters (NDSU & U of MN Extension Sugarbeet Agronomist and Weed Control Specialist) for his insight and major contributions to this issue.