

Why You Need to Use a Preemergence Herbicide on Sugarbeet Fields in 2018

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Waterhemp is the most widespread weed control challenge in sugarbeet. Growers attending the 2018 technical seminars and participating in the Turning Point survey of weed control and production practices reported waterhemp as their most important weed control challenge on 237,600 acres or over 35% of sugar beet fields in Minnesota and eastern North Dakota.

Sugarbeet planting date dictates the weed control strategy for waterhemp control. In 2017, many acres of sugarbeet were planted between April 10 and April 20. Early planting enables sugarbeet to grow to the 2-lf stage, or the sugarbeet growth stage when Dual-Magnum, Outlook, and Warrant is applied, before waterhemp germination and emergence in mid-May (POST to sugarbeet, PRE to waterhemp). Split lay-by application of chloroacetamide herbicides or first application at the 2-lf stage followed by a repeat application 14 to 21 days later is the preferred approach for waterhemp control for early planted sugarbeet (Table).

Table. Waterhemp control in sugarbeet, by planting date.

Planting Date	Recommendation
Plant Sugarbeet in April	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
Plant Sugarbeet in May	Dual Magnum and/or ethofumesate PRE followed by a split lay-by
Either	Continue to scout fields for late germinating waterhemp in late June and July
Either	Be prepared to rescue with Betamix + ethofumesate, UpBeet + ethofumesate or Betamix + UpBeet (be aware of resistant biotypes)
Either	Cultivate

April sugarbeet planting is unlikely in 2018. It means we must adapt our waterhemp control strategy since sugarbeet will not reach the sugarbeet 2-lf stage by May 15 or in time for lay-by application of chloroacetamide herbicides and before waterhemp germination and emergence.

It means we must use a preemergence herbicide. Which ones? What are the pros and cons of each option?

Herbicide	Rate (pt/A)	Strengths	Weakness
Ro-Neet SB	4 to 5.3 pt/A	Sugarbeet safety	Fair to Good waterhemp control
Ethofumesate	6 to 7.5 pt/A	Sugarbeet safety, good waterhemp control, especially in high OM soils, 8-10 weeks waterhemp control	Nurse crops do not tolerate high rates of ethofumesate
Ethofumesate	2 to 3 pt/A	4 weeks waterhemp control	Wheat and barley do not tolerate etho
Dual Magnum	0.5 pt	2-3 weeks waterhemp control	Generally safe to nurse crops

Preemergence 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. Dual Magnum, Outlook, and Warrant lay-by following PRE are our best options for waterhemp control.

Across years, application timing is more important than herbicide choice for waterhemp (Figure). Waterhemp control treatments were ranked in numerical order from greatest 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 fb lay-by, and PRE fb split lay-by. Data indicates use of a preemergence herbicide fb a chloroacetamide herbicide applied lay-by or applied split lay-by provided the most consistent waterhemp control across locations and years.

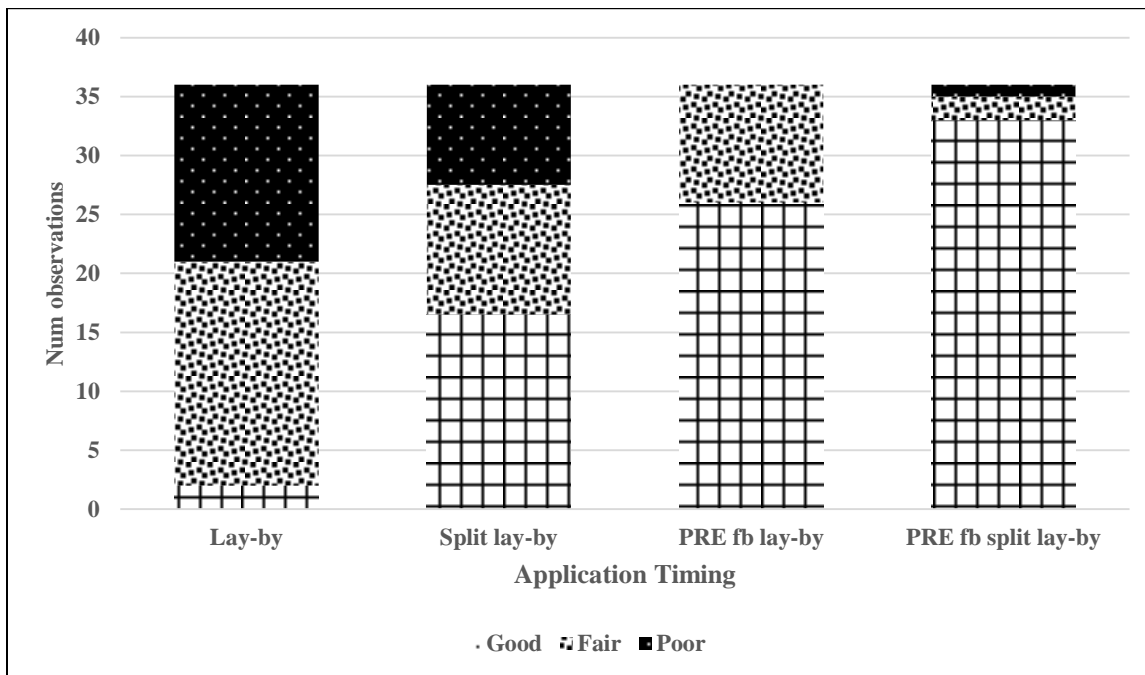


Figure. Number of good, fair, and poor estimates of waterhemp control across herbicides and application timing, summed across evaluations, locations, and years

Summary

- Late spring requires use of a preemergence herbicide after planting when waterhemp is a production challenge.
- Use a chloroacetamide herbicide split lay-by with glyphosate and ethofumesate at the 2-4 leaf sugarbeet stage followed by the 6-8 leaf sugarbeet stage.
- Control waterhemp escapes when they are small, less than 4-inches tall. Be aware that PowerMax and UpBeet do not control resistant biotypes; Betamix is in short supply.
- You may need to cultivate to control waterhemp escapes.