



2023 Pre-Emerge Herbicide Options

Planting the 2023 sugarbeet crop is fast approaching. It is highly recommended that you consider using a soil applied preemergence herbicide to control glyphosate resistant weeds such as kochia and waterhemp. Resistant kochia is spreading rapidly, germinates from April to June, and is very difficult to control after emergence. Additionally, planting after April 20th increases the risk that waterhemp will emerge at a similar time as sugarbeet. Since we cannot apply lay-by chloroacetamide herbicides like Outlook, Warrant, or Dual-Magnum until after the 2-leaf stage, most of the waterhemp & kochia emerged before this time will have escaped control. We can greatly improve weed control and minimize costly rescue treatments by using a soil-applied pre-emergence herbicide at planting. What option you choose depends on what resistant weed(s) you are trying to control. All soil applied options are good for waterhemp but only a high rate of ethofumesate (Nortron or generic) is effective for resistant kochia. All pre-emergence herbicides should be applied with 15 gallons of water and medium to coarse droplets for adequate coverage. Soil applied herbicide terminology and herbicide options are listed below. Call your Agriculturalist with any further questions and remember to Always Follow Label Directions.

Pre-emergence (PRE): herbicide applied to soil after the crop has been planted but before it has emerged

Pre-Plant Incorporation (PPI): herbicide applied to soil and lightly incorporated (depth of 2" or less). Often applied to soil before the initial spring tillage with ground sprayer or with spray bar mounted to spring tillage equipment. Aerial application can work but can result in greater streaking, coverage gaps, or overlaps.

Herbicide	Rate	Crop Injury Risk	Notes
Ethofumesate	3 – 4.5 pt/A	Low	<ul style="list-style-type: none"> • Good waterhemp control up to 4 weeks • Fair kochia control for non-resistant biotypes but inadequate for resistant kochia • Poor-Fair lambsquarter control • Needs ¼" rain to activate if used as PRE • Quicker activation with PPI application • May reduce cover crop stands
	5 – 7.5pt/A	<ul style="list-style-type: none"> • Low for fine textured soils with high organic matter • Greater risk over 5 pt/A on coarse texture soils 	<ul style="list-style-type: none"> • Good waterhemp control for 8 – 10 weeks • Minimum of 5pt/A for resistant kochia • Poor-Fair lambsquarter control • Needs ¼" rain to activate if used as PRE • Quicker activation with PPI application • Significant injury to cover crop • Next year's crop should not be a grass
Dual Magnum	0.5-0.75pt/A	Low	<ul style="list-style-type: none"> • 2 – 3 weeks waterhemp control • Fair lambsquarter control • Poor kochia control • Needs ½" rainfall to activate • Do not recommend PPI application • Safe for cover crops • Must sign indemnity label • Only branded Dual Magnum is labeled
Dual Magnum + Ethofumesate	0.5 pt/A DM + 2-3 pt/A Etho	Low	<ul style="list-style-type: none"> • Combines attributes of both herbicides • Provides 3-4 weeks of good Waterhemp control but little Kochia control • Activates with ½" of rainfall • Should only be applied as a PRE • Reduced cover crop injury risk

- Ro-Neet SB is also labeled in sugarbeet. Contact Agriculturalist for more information if considering use.



2023 Layby Herbicide Control Options

Post-emergence control options for glyphosate resistant waterhemp in sugarbeet are limited and becoming less effective. Therefore, a layby application approach with chloroacetamide herbicides such as Outlook, Warrant, or Dual Magnum is necessary to continue to provide a barrier against waterhemp emergence. Which option you choose should be based upon timing, likelihood of rainfall and finally if you used a PRE or PPI soil applied herbicide at planting. All layby herbicides need to be applied after the first 2 true leaves have emerged and the stand has been established. As with any weed control strategy, timing of application is more important than what herbicide you choose to use. If you do not use a PRE/PPI herbicide, we recommend applying a layby herbicide as soon as the beet stand is established to increase rainfall chances for herbicide activation and prevent waterhemp emergence. Please consult your Agriculturalist for further information and Always Follow Label Directions.

Layby Herbicide: Soil applied herbicide that is applied after the crop stand has been established (after 2 true leaf stage in sugarbeet). All layby applications need rainfall to activate the herbicide.

Herbicide	Rate	Crop Injury Risk	Notes
<u>Outlook</u> or generic <u>dimethenamid</u>	Single - 18oz application Split application 12 oz fb 12oz	Higher for single app Low for Split	<ul style="list-style-type: none"> • Good waterhemp control • Good lambsquarters control • No kochia control • Cannot replant to sugarbeet • Shortest residual control length of any layby • Injury greater on small beets and coarse soil types • Very little moisture needed for activation $\approx \frac{1}{4}$" • 60 day PHI 2-8 leaf
<u>Dual Magnum</u> or generic <u>S-metolachlor</u>	Single – 1.3pt/A coarse texture soil or up to 1.6pt/A fine texture soil Split application 1pt/A fb 1pt/A	Higher for single app Low for Split	<ul style="list-style-type: none"> • Good waterhemp control • Fair lambsquarters control • Poor kochia control • Can replant to sugarbeet • Moderate residual activity length • Only use S-metolachlor formulations • Needs $\frac{1}{2}$" rainfall to activate • 60 day PHI
<u>Warrant</u> or generic <u>acetochlor</u>	Single 1.5-2 quarts/A Split 2.5pint-3pint fb 2.5pint - 3pint/A	Higher for single app Low for Split	<ul style="list-style-type: none"> • Good waterhemp control • Fair lambsquarter control • Poor Kochia control • Cannot replant to sugarbeet • Longest residual of any of the layby options • Needs minimum of $\frac{3}{4}$" of rainfall to activate • 70 day PHI

Additional Notes for all Layby Herbicides

- Must be applied to soil with good coverage to work properly
- Should be applied with 15 gallons of water and medium to course nozzles if sprayed alone
- Use at least 10 gallons of water if tank mixing layby with only glyphosate and AMS
- Use at least 12 gallons of water if tank mixing layby with glyphosate, AMS, and another broadleaf herbicide like Stinger, Betamix, ethofumesate, Upbeet, or an HSMOC surfactant
- PRE or PPI ethofumesate application alone is not a season long Waterhemp control strategy. Use split application rates of layby herbicides where you applied ethofumesate pre-emergence to prevent injury.
- Application with temperatures over 85°F are more likely to cause injury