



2025 American Crystal Sugar Company PRE-EMERGE HERBICIDE OPTIONS

It is highly recommended that you consider using a soil residual herbicide, either preplant or pre-emergence to control glyphosate resistant weeds such as kochia and waterhemp. Resistant kochia germinates from April to June and is very difficult to control after emergence. Planting after April 20th increases the risk that waterhemp will emerge at a similar time as sugarbeet. Since we cannot apply chloroacetamide herbicides like Outlook, Warrant, or Dual-Magnum lay-by until after the sugarbeet 2-leaf stage, most of the waterhemp and kochia emerged before this time will have escaped control. A soil residual herbicide at planting will greatly improve weed control and minimize costly Post applied rescue treatments. 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 at least 15 gallons of water and medium to course droplets for adequate coverage. Call your Agriculturist 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 lambsquarters control • Needs 3/4" rain to activate if used as PRE • Quicker activation with PPI application • May reduce cover crop stands
	5 – 7.5 pt/A	<ul style="list-style-type: none"> • Low risk for fine & medium textured soils with >3% 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 6 pt/A for resistant kochia • Poor-Fair lambsquarters control • Needs 3/4" 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*	0.75-1.0 pt/A	Low	<ul style="list-style-type: none"> • 2 - 3 weeks waterhemp control • Fair lambsquarters control • Poor kochia control • Needs 1/2" rainfall to activate • Do not recommend PPI application • Safe for cover crops • Use higher rate on medium and fine textured soils with greater than 3% OM • Use 1.0 pt/A if planting after May 15
Dual Magnum* + Ethofumesate	0.5 – 0.75 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 1/2" of rainfall • Should only be applied as a PRE • Reduced cover crop injury risk

*Dual Magnum used PRE/PPI - must sign Syngenta Dual Magnum indemnity label. Only branded Dual Magnum is labeled.

- Ro-Neet SB and Eptam are also labeled pre-plant in sugarbeet. Contact Agriculturist for more information if considering.

The information on this reference card is not a substitute for reading the product label.



2025 American Crystal Sugar Company LAYBY HERBICIDE CONTROL OPTIONS

Post-emergence control options (POST to sugarbeet and weeds) 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 S-metolachlor products (Dual Magnum and labeled generics) are 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 sugarbeet stand is established to increase rainfall chances for herbicide activation and prevent waterhemp emergence. Please consult your Agriculturist 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 labeled generic	Single - 18oz application Split application 12oz 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 ≈ 1/4" • 60-day PHI when applied @ 2 - 8 leaf sugarbeet
<u>Dual Magnum</u> or labeled generic	Single - 1.3pt/A coarse texture soil or up to 1.6pt/A fine texture soil Split application 1 - 1.3 pt/A fb 1 - 1.3 pt/A	Higher for single app Low for split	<ul style="list-style-type: none"> • Do not use over 1 pt/A in complex tank mixes • Good waterhemp control • Fair lambsquarters control • Poor kochia control • Can replant to sugarbeet • Moderate residual S-metolachlor formulations • Need 1/2" rainfall to activate • 60-day PHI
<u>Warrant</u> or labeled generic	Single - 1.5 - 2 quarts/A Split 2.5 pint - 3 pint fb 2.5 pint - 3 pint/A	Higher for single app Low for split	<ul style="list-style-type: none"> • Good waterhemp control • Fair lambsquarters control • Poor kochia control • Cannot replant to sugarbeet • Longest residual of any of the layby options • Needs minimum of 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, 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

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