

# Water Quality **Best Management Practices** for **ACETOCHLOR**

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The Minnesota Department of Agriculture (MDA) has developed voluntary Best Management Practices (BMPs) to address the presence of acetochlor and its breakdown products in Minnesota's groundwater and surface water from normal agricultural use (see reverse side of page for acetochlor-specific BMPs). If the BMPs are proven ineffective, mandatory restrictions on herbicide use and practices may be required. The BMPs may also refer to mandatory label use requirements. Always read product labels. For information on monitoring results for acetochlor and other pesticides in Minnesota's water resources, refer to the MDA's Monitoring and Assessment webpage:

[www.mda.state.mn.us/chemicals/pesticides/maace.htm](http://www.mda.state.mn.us/chemicals/pesticides/maace.htm)

The acetochlor BMPs are companions to a set of core BMPs for use with all agricultural herbicides. Herbicide-specific BMPs have also been developed for use with alachlor, atrazine, metolachlor and metribuzin. If you use any of these herbicides in the production of crops, be sure to consult each herbicide-specific BMP prior to applying these herbicides. State and federal law can require that the use of a pesticide be limited or curtailed due to the potential for adverse impacts on humans or the environment.

## Information about ACETOCHLOR

- Acetochlor demonstrates the properties and characteristics associated with chemicals detected in groundwater. Its use in areas where soils are permeable, particularly where the groundwater is shallow, may result in groundwater contamination. Combined detections of acetochlor and its breakdown products have been frequently detected in Minnesota groundwater beneath areas with coarse-textured soils.
- Acetochlor has properties that may result in surface water contamination from runoff or erosion. It has been found at concentrations of concern in Minnesota surface waters. Acetochlor is toxic to fish.
- Acetochlor belongs to the class of "chloroacetamide herbicides" that manage weeds through a similar mode of action (chemistry). Other herbicides in this class include alachlor and metolachlor. Herbicides in this class should be considered in the context of an Integrated Weed Management (IWM) Plan. All chloroacetamide herbicides have similar potential to contaminate water resources.



Certain soils, regions and watersheds are more vulnerable to losses of acetochlor. Sensitive areas include those with highly permeable geologic material, highly erodible soils or seasonally high water tables (including areas with drain tiles). Note that portions of every Minnesota county may include one or more of these conditions.

Contact your Natural Resources Conservation Service or Soil & Water Conservation District for further information on specific soil and water resource conditions on and near your farm. Then work with crop consultants and educators to select and adopt the Best Management Practices that are appropriate for your field and farm.

Example trade names for products and package mixtures containing acetochlor. List is not all-inclusive and can change with the introduction of new products; always check the label, or consult MDA's product registration database at <http://state.ceris.purdue.edu/doc/mn/statemn.html> and search for Active Ingredient.\*

### Acetochlor is an active ingredient in:

Confidence products	Harness products
Cadence products	Imperium
Degree products	Keystone products
Double Team	Overtime products
Power Play	SureStart
Breakfree products	Surpass products
Fieldmaster	Top Notch
First Act	Tremor products
Ful Time	Volley products

\* Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement is implied.

**The BMPs are provided as a series of options.** Producers, crop consultants and educators should select options most appropriate for a given farming operation, soil types and geography, tillage and cultivation practices, and irrigation and runoff management. The MDA encourages development of Integrated Weed Management Plans for every Minnesota farm (see "Additional Information and References" for more information). **Always read the product label. Label use requirements and application setbacks are legally enforceable.**

**Water Quality Best Management Practices for ACETOCHLOR**  
 To be used in conjunction with MDA's core "BMPs for All Agricultural Herbicides"

Acetochlor-Specific Practice *	Description	Benefit
<p>1. Adopt the core "BMPs for All Agricultural Herbicides" when applying acetochlor.</p>	<p>MDA's core "BMPs for All Agricultural Herbicides" are designed as the baseline set of options to mitigate or prevent losses of herbicides to water resources. The core BMPs are available at <a href="http://www.mda.state.mn.us/herbicidebmps">www.mda.state.mn.us/herbicidebmps</a></p>	<p>Adoption of core BMPs with those specific for acetochlor and adherence to mandatory label use requirements and application setbacks result in opportunities for multiple water quality protection benefits.</p>
<p>2. Evaluate surface drainage patterns in your field, then identify points where surface runoff leaves the field and consider protective practices in vulnerable areas, including tile inlets.</p>	<p>Work with crop consultants and other ag professionals. Identify and implement appropriate acetochlor application setbacks and planted buffers for your farm. Application setbacks from points where runoff enters perennial or intermittent streams and rivers, or around natural or impounded lakes and reservoirs can be adopted to help minimize the potential for acetochlor losses in dissolved runoff and/or runoff erosion. Setbacks or buffers could also be adopted around surface inlets on tile-drained fields for further water quality protection benefits.</p>	<p>Protects vulnerable streams, rivers, lakes and reservoirs from acetochlor impacts.</p>
<p>3. Determine your soil's texture and organic matter content, then limit acetochlor application rates to the indicated label recommendation.</p>	<p>The practice is especially important for acetochlor (and other chloroacetamide herbicides). Weed control with acetochlor is sensitive to differences in soil organic matter and texture. Limit unnecessary and costly use of acetochlor and protect the environment by carefully reviewing the label and adjusting the application rate to match your soil organic matter content and soil texture.</p>	<p>Proper acetochlor application rates mean cost-effective use and efficient weed control with minimal risk of water resource impacts.</p>
<p>4. Adopt conservation tillage practices appropriate for your farm's topography and in SE Minnesota Karst areas.</p>	<p>Conservation tillage controls soil erosion that can contribute to losses of acetochlor attached to soil particles during field runoff events and from fields with tile drain surface inlets. It also helps slow movement of water across the landscape when acetochlor is dissolved in runoff water. Consult your Natural Resources Conservation Service and Soil &amp; Water Conservation District offices for current tillage guidelines.</p>	<p>Controlling loss of soil and runoff helps reduce acetochlor losses to surface waters.</p>
<p>5. Rotate use of acetochlor (and alachlor, metolachlor and other chloroacetamide herbicides) with herbicides from a different chemical class.</p>	<p>Evaluate this practice in the context of other effective control practices in the management system (e.g., use of tank mixes with multiple modes of action; crop rotation; planned, periodic use of herbicide-resistant varieties in a rotation; mechanical weed control; field scouting). Determine which crop in the rotation is in greatest need of chloroacetamide herbicides, and reserve their use for that crop.</p>	<p>With time, this practice will reduce development of herbicide resistant weeds or weed species shifts, and means less annual availability of these herbicides for loss to the environment.</p>

\* For practices related to the use of specific herbicides refer to MDA's herbicide-specific Best Management Practices. All BMPs are available at [www.mda.state.mn.us/herbicidebmps](http://www.mda.state.mn.us/herbicidebmps) See "Additional Information & References" for access to detailed guidance on all recommended practices.