

A Guide for Understanding the Atrazine Ground and Surface Water Risk Reduction Measures

Background

CIBA-GEIGY, the leading manufacturer of atrazine, together with the other basic producers of the herbicide, initiated and received approvals from the U. S. Environmental Protection Agency (EPA) for revised labeling of atrazine-containing products. All atrazine-containing products released for shipment after August 1, 1992 must bear the new labeling except products for turfgrass, conifer and lawncare uses only. The label changes, designed to protect surface water quality, provide reduced application rates linked to erodibility of the land, mandatory setback distances, and the deletion of non-selective non-crop uses. These revisions reflect the important role of pesticide labeling in addressing concerns over the presence of atrazine in surface and groundwater resources.

The purpose of this document is to provide clarification of label requirements for applicable atrazine containing products. Strict adherence to pesticide labeling for use of atrazine is the law. All persons associated in any way with the sale, distribution or use of applicable atrazine-containing products need to know and understand the revised label requirements. Where questions arise, individuals should refer to the definitions stated in the attached Qs & As. Where restrictions do not apply, individuals should rely on Best Management Practices (BMPs). BMPs are voluntary or mandatory practices specific to a state, region or area and are designed to reduce pesticide concentrations in water resources.

Major Water Quality Protection Elements

Groundwater Protection

On February 20, 1990, the EPA approved label revisions for all atrazine-containing products (except certain turf, lawncare and conifer use products). These revisions included a reduction in the maximum allowable label rate for corn and sorghum to no more than 3.0 pounds of active ingredient per acre, per calendar year.

Since then, the maximum label rate has been reduced to a range of 1.6 to 2.5 pounds active ingredient per acre per calendar year depending on the amount of plant residue left on the land and whether the land is classified as "highly erodible." The maximum rate per application is no more than 2.0 pounds of active ingredient (see Surface Water Protection). While not specifically correlating to overall water quality, rate reduction is viewed as a key element in a source reduction program. Weed control claims have correspondingly been revised.

A second element in the 1990 label revision was the voluntary classification of atrazine-containing products (except certain turf, lawncare and conifer use products) as Restricted-Use Pesticide (RUP) based on groundwater concerns. RUPs may only be applied by or under the supervision of a certified applicator. Farmers obtain certification as Private Applicators.

Applicators applying RUP pesticides for purposes other than the production of any agricultural commodity and/or on a property other than that owned or rented by him or his employer must obtain certification as Commercial Applicators in the category or categories applicable to the work. The certification process requires that applicators demonstrate competency in general standards and in specific standards applicable to the work. Atrazine BMP workshops are also available (through CIBA-GEIGY - Include 800 number?) to assist in the educational outreach.

Implementation of a well-head protection requirement was the third element of the groundwater quality label revisions. A 50' "set-back" or circle was imposed around all wells (including abandoned wells, drinking water and irrigation wells, drainage wells and sink holes) to minimize the potential for the direct introduction of atrazine into a well. Mixing, loading and application within this set-back is prohibited.

Although CIBA-GEIGY is working with EPA to establish an exemption from the setback if the dealer's mixing-loading site meets certain specifications, the current setback applies to all wells unless the product label is amended to reflect the exemption.

Nonselective weed control on noncrop lands (industrial sites, highway medians and shoulders, railroad rights-of-way, lumberyards, petroleum tank farms, and in noncrop areas on farms, such as around buildings, equipment and fuel storage areas, along fences and lanes) has been deleted. Selective weed control on roadsides at the rate of 1 pound of active ingredient per acre per calendar year is allowed in certain states as indicated on the label.

Summary of Groundwater Protection Elements and Practices

- All atrazine-containing products (except for certain turf, lawncare or conifer use products) are classified as Restricted-Use-Pesticides (RUPs).
- For well-head protection, atrazine-containing products must not be mixed/loaded or used within 50' of all wells. Wells include abandoned wells, drainage wells, sink holes, drinking water wells, and surface water inlets that convey water directly to groundwater (i. e., ag-drainage wells or dry wells). Tile inlets or intakes that discharge water directly to groundwater or perennial or intermittent streams or impounded lakes and reservoirs are subject to the setbacks. The set-back around sink holes should be vegetated to reduce run-in. States may impose additional restrictions under state well-head protection programs.
- If hoses or plumbing connections are hooked directly to water supplies for mixing, loading, filling or rinsing of pesticide containers, mix/load pads, application equipment, etc., use an antisiphon device or back flow preventer to prevent pesticides from contaminating the water supply. Maintain a fixed air gap between liquids in such containers or equipment and fill hoses. Mixing/loading/filling operations require constant monitoring to prevent leaks and overflow.
- All pesticide users must read and follow the label that is on the product being applied.

- The application of atrazine-containing products through irrigation systems (chemigation) is prohibited.

Surface Water Protection

On June 17, 1992, the EPA approved label revisions for all atrazine-containing products (except certain turfgrass, conifer and lawncare use products). These revisions included a reduction in the maximum allowable label rate for corn and sorghum to no more than 2.5 pounds active ingredient per acre per calendar year depending on tillage practices. The maximum rate per application ranges from 1.6 to 2.0 pounds of active ingredient per acre depending on tillage practices and whether the land is classified as "highly erodible."

The basic intent of the surface water protection label revisions is to reduce the speed and amount of surface water run-off from treated fields into water bodies. While not specifically noted on the label, these revisions were implemented to protect surface water that is used for drinking water.

Surface water bodies now requiring mixing/loading and application setbacks are identified as perennial and intermittent streams, rivers, natural or impounded lakes, and reservoirs. Definitions of these surface water bodies, based on those used by the U.S. Geological Survey (USGS), and clarification of where setbacks apply are provided in the Questions and Answers section.

In situations where setbacks are not required but there is the potential for atrazine to reach surface water, voluntary BMP's should be employed.

Surface water runoff control measures consist of two primary elements: 1) reducing application rates and linking rates to conservation tillage and the percentage of plant residues remaining on fields to be treated; and 2) mixing/loading and application set-backs from specified water bodies.

Corn and sorghum producers who participate in USDA's conservation compliance programs will already have identified their highly erodible land and be using conservation tillage and plant residue management. Those not involved in this program should be encouraged to adopt similar planning and management techniques.

Set-backs are designed to place minimum distances between the actual application area and points where surface water runoff enters streams, rivers, lakes or reservoirs with the goal of reducing the amount of pesticide that leaves the treated fields. These measures are intended to slow down surface water runoff and improve water quality. In situations where the setback requirements do not apply, follow BMP's suited to the area. Develop a mechanism for identifying setbacks that applicators can readily follow.

Upfront planning and communication with atrazine users and crop producers is essential to ensure protection of water resources and compliance with the label. BMPs for your local area should be followed in situations where the atrazine label restrictions on mixing/loading and application (as defined in the attached Qs & As) do not apply. Where there are state/local requirements regarding atrazine use (including lower maximum rates and/or higher setbacks) which are different from the label, the more restrictive/protective requirements apply.

Summary of Surface Water Protection Elements and Practices

- All atrazine-containing products (except for certain turfgrass, conifer and lawncare use products) are classified as Restricted-Use-Pesticides (RUPs).
- Application rates: Restrictions on atrazine use rates for corn and sorghum have been tied to conservation tillage and land erodibility. The maximum application rate is 2.5 lbs. of active ingredient per acre per calendar year. Specific rate restrictions are as follows:

For Applications Prior to Crop Emergence

a) For highly erodible soils:

(1) if at least 30% of the field surface is covered with plant residue, the maximum rate is 2.0 lbs. of active ingredient per acre.

(2) if less than 30% of soil surface on highly erodible land is covered, the maximum application rate is 1.6 lbs. of active ingredient per acre.

b) For non-highly erodible soils, the maximum application rate is 2.0 lbs. of active ingredient per acre. The maximum application rate is 2.5 lbs. active ingredient per acre per calendar year.

For Postemergence Application

If no atrazine was applied prior to corn emergence, apply a maximum of 2.0 lbs of active ingredient per acre broadcast. If a postemergence treatment is required following an earlier herbicide application, the total atrazine applied may not exceed 2.5 lbs. active ingredient per acre per calendar year.

- Mixing/loading setbacks: For surface water quality protection, atrazine-containing products may not be mixed or loaded within 50' of a perennial or intermittent stream, river, natural or impounded lake or reservoir. See attached Questions and Answers for clarifications of terms such as "intermittent stream."
- For other water bodies where the 50' mixing and loading setback does not apply, BMPs that minimize the potential for spills or leaks to enter water bodies should be followed.

Proper use of impervious mix/load pads, backflow preventer, anti-siphon devices, closed transfer systems, or field mixing/loading away from these water bodies are Best Management Practices.

- Application setbacks: For aerial or ground application, a 66' set-back is required from points where field surface water runoff enters a perennial or intermittent stream or river. If land is highly erodible, the 66 feet set-back from runoff entry points must be planted to crop, or seeded with grass or other suitable cover crop.
- * A 200' application set-back is required around natural or impounded lakes and reservoirs. Atrazine must not be applied to these set-backs.
- * Tile inlets or intakes that discharge water directly to groundwater or perennial or intermittent streams, rivers, or natural or impounded lakes and reservoirs are subject to the setbacks.



UNDERSTANDING ATRAZINE SURFACE WATER RISK REDUCTION MEASURES

QUESTIONS AND ANSWERS

1. Q- What responsibilities (role) does the agricultural chemical dealer have with regard to communication of label changes?
A- If the dealer applies compounds containing atrazine to the farmer's land, we suggest the dealer meet with the farmer prior to the season and develop a plan on how best to comply with the label restrictions. If the dealer is the primary source of information for the farmer, the dealer should communicate the label changes to the farmer. The user/applicator is responsible under federal law for using the product in a manner consistent with its labeling. A site by site inspection may be needed to determine where new set-back restrictions apply. The farmer/applicator can obtain assistance in identifying geological and hydrological characteristics from USDA's Cooperative Extension Service or Soil Conservation Service (SCS).

2. Q- What does the dealer need to know about the Safe Drinking Water Act (SDWA)?
A- The intent of the atrazine label changes approved in 1992 is to reduce the amount of atrazine entering drinking water sources. Between January 1993 and January 1995, public water utilities are required to begin monitoring for atrazine, and other substances regulated under the Safe Drinking Water Act (SDWA). Utilities are required to take a minimum of 4 quarterly finished water samples. The system is out of compliance if the running annual average is above the Maximum Contaminant Level (MCL). The MCL for atrazine was set at 3 micrograms per liter (3 parts per billion) effective July 30, 1992. Under the SDWA, water utilities detecting atrazine above the MCL are required to notify the public and take action to reduce levels below the MCL. Actions could include the implementation of source reduction measures or upgrading water treatment equipment by the public utility. Best Management Practices (BMPs) and adherence to the new atrazine label are very positive steps toward reducing atrazine's presence in drinking water supplies. BMPs are voluntary or mandatory practices specific to a state, region or area and are designed to reduce pesticide concentrations in water resources.

If the dealer's location or if the grower's farmland is in a recharge or wellhead protection area or within a setback for a public drinking water supply, additional environmental safeguards may need to be initiated to manage pesticide use. The water utility, and/or state water protection or state lead pesticide agency may direct safeguards in addition to those required by the

atrazine label changes.

3. Q- Where can I obtain a list of chemicals that have MCLs established by SDWA?

A- A list of MCLs and other information on SDWA regulations can be obtained by calling EPA's Safe Drinking Water Hotline at 1-800-426-4791 (8:30-5:00 pm Eastern Standard Time, Monday through Friday excluding holidays).

4. Q- When and how often can atrazine be applied to fallow in a wheat/fallow/wheat rotation?

A- Application of atrazine can be done only once during the fallow period.

5. Q- Does the 50' setback apply to all wells?

A- The 50' setback applies to all wells. State regulations may require additional safeguards.

6. Q- Does the 50' setback and/or the 66' buffer apply to standpipes, drainage field tiles or terrace drains into a tile?

A- Yes, if the tiles discharge to the following:

Wells Inlets to tile drainage (i.e. standpipes) are subject to the 50' mixing/loading/application setback unless the tile discharge point is a least 50' from all wells, including abandoned wells, drainage wells and sink holes.

Streams and Rivers Inlets to tile drainage (i.e. standpipes) are subject to the 50' mixing/loading/ setback and the 66' application setback unless the tile discharge point is at least 66' from all perennial or intermittent streams and rivers.

Lakes and Reservoirs Inlets to tile drainage (i.e. standpipes) are subject to the 50' mixing/loading/ setback and a 200' application setback unless the tile discharge point is a least 200' from all natural or impounded lakes and reservoirs. (see # 11 for more details about buffer zones).

7. Q- What is a sinkhole?

A- A sinkhole is a depression in the land surface resulting from the dissolution of the bedrock, and the subsequent collapse of overlying soil and rock. Sinkholes are typical features of karst (limestone) regions, and

provide a direct pathway for surface water to move into the subsurface. They occur singly, or in groups in close proximity to one another. Sinkholes range from a few feet to hundreds of feet in depth. Not all topographic depressions are sinkholes. Consult with the local extension service or geologic survey for more detailed information about your area. The 50' mixing/loading/application setback applies to all sinkholes.

8. Q- What is the definition of an intermittent stream?

A- At this time, the EPA accepts the following USGS definition of a stream and intermittent stream: "A stream is a body of water flowing in a natural surface channel. Streams which flow only during wet periods are termed intermittent streams." EPA also considers ephemeral streams (streams or portion of a stream which flows only in direct response to precipitation and whose channel is above the water table) to be included in the above definition. Although USGS and USDA/SCS maps are available for reference, if an intermittent stream fits the USGS definition adopted by EPA or is commonly known as an intermittent stream, the 50' mixing/loading setback applies and the 66' application setback from the points where surface water runoff enters the stream applies - even if the intermittent stream does not appear on a USGS or SCS map. A site by site inspection should be undertaken to determine where the above mentioned setbacks apply.

9. Q- Does the 66' application setback apply to ditches?

A- All ditches are exempt from setbacks except where the ditch falls within another specified setback required by the label changes. However, Best Management Practices (BMPs), and SCS guidelines for constructing and maintaining agricultural drainage ditches, should be followed. Grass waterways are also exempt from setbacks (except where they fall within a specified setback required by the label changes). However, atrazine may not be applied directly to the grass waterway.

10. Q- What is a farm pond versus a natural or impounded lake, and what setbacks apply to each?

A- A farm pond is defined as a water impoundment made by constructing a dam or an embankment or by excavating a pit or dugout. Farm ponds are exempt from the setback requirements if they meet all of the following criteria: 1) the farm pond is located wholly on the farmer's property, 2) it is not used for human drinking water, 3) its discharge is not conveyed directly to a perennial or intermittent stream or river through a clearly traceable, concentrated water course.

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If the farm pond meets all of the above criteria except its discharge is conveyed directly into a perennial or intermittent stream or river through a clearly traceable, concentrated flow then the 66' application setback applies at points where field surface water enters the pond. In this case the 50' mixing/loading setback is also required.

Any impounded body of water, natural or artificially made, which does not meet the above criteria is considered a natural or impounded lake or reservoir, and the 200' setback applies.

11. Q- How were the 50' setback and the 66' buffer areas determined?

A- Fifty feet (50') is one of a number of interim measures to restrict where mixing and loading occurs in order to address point source contamination.

Sixty-six feet (4 rods) is the distance designated by the USDA in determining average field border width for setting aside acres (taking them out of production) in accordance with USDA's Conservation Reserve Program. The Conservation Reserve Program assists land users financially in voluntarily converting highly erodible and environmentally sensitive cropland from the production of annual crops to less intensive uses such as permanent grass, legumes, forage, wildlife cover or trees. Growers enrolled in the Conservation Reserve Program or other applicable programs may be eligible for financial assistance if vegetative filter strips within set-back zones required by the new atrazine label changes are properly designed and installed according to SCS requirements.

12. Q- What support are the other atrazine manufacturers or trade associations giving to the federal label changes?

A- The ground and surface water risk reduction label changes approved by the EPA in 1992 apply to all applicable registered atrazine products. The "Guide for Understanding Atrazine Ground and Surface Water Risk Reduction Measures" and the accompanying "Q & As" are based on Agency positions and were developed with EPA approval.

13. Q- What additional means of communication will be used to get the message and rationale for the label change to the farmer and general public?

A- Each manufacturer will need to communicate information relative to the label changes. For example, CIBA-GEIGY has a very extensive informational and educational campaign underway. Examples include grower and dealer

training, numerous magazine articles, public announcements, and other educational materials made available to the trade, extension service, state lead agencies, and commodity groups. (Include 800 number?)

14. Q- How and when will the new label appear on products?
- A- All atrazine products (requiring the label changes) released for shipment after August 1, 1992 must bear the new labeling. Dealers will receive informational guidelines from their suppliers. (For example, CIBA-GEIGY Insight mailings).
15. Q- Is pre-emerge application preferred over post-emerge?
- A- The ultimate goal of the refined definition of application timing combined with plant residue requirements is to keep atrazine out of ground and surface water and on the field. Since the timing of application may depend on local weather conditions and the Best Management Practices recommended for your area, the farmer should contact the USDA State Cooperative Extension Service or appropriate State Lead Pesticide Agency for recommended BMPs and information regarding timing of application.
16. Q- Does the 50' setback apply to dealer wells?
- A- Yes. Although, CIBA-GEIGY has requested an exemption from the setback if the dealer's mixing-loading site meets certain specifications, the current setback applies to all wells unless the exemption is granted and the product label is amended to reflect the exemption.

