



Are Herbicides Safe to Use in My Pond?

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Caution is reasonable when considering the use of herbicides to treat aquatic plants. Most ponds contain fish, which may be caught and consumed. Likewise, farm ponds are often used as a water source for livestock, whose milk or meat will be consumed. Herbicide labels can be a bit difficult to understand and may include ominous sounding warnings. This Fact Sheet seeks to dispel worries arising from misunderstandings about aquatic herbicides.

Safety

We cannot eliminate all risks with herbicides, but if prudent in using them, the risk can be greatly reduced. Modern laboratory testing and regulatory efforts screen herbicides to determine if they are safe when used properly. Those passing a series of tests and reviews are approved by the Environmental Protection Agency (EPA) and carry a label or set of instructions specifically for aquatic sites.

Yet pond owners are often unsure about using herbicides. Consider a comparison between automobiles and herbicides. Motor vehicles are the leading cause of accidental death in this country. Each year between 30,000 and 40,000 people in the U.S. die as a result of motor vehicle accidents. Yet there is no warning label stating this when owning a car. When driving a car, most feel empowered and in control, but when reading an herbicide label, difficult language, intimidating chemical names and ominous warnings are hard to understand. The more a person knows about the herbicide testing process and the proper use of herbicides, the more empowered and less fearful they become.

What is Done to Ensure Aquatic Herbicides are Safe?

"Before pesticides are registered by the EPA, they must undergo laboratory testing for short-term (acute) and long-term (chronic) health effects. Laboratory animals are purposely given high enough doses to cause toxic effects. These tests help scientists judge how these chemicals might affect humans, domestic animals, and wildlife in cases of overexposure."

National Pesticide Information Center

This rigorous testing should be reassuring to you, the person using the product. To the limits of modern science, registered aquatic herbicides have been tested to ensure their safety to people, animals and the environment.

Oklahoma Cooperative Extension Fact Sheets are also available on our website at:
<http://osufacts.okstate.edu>

While we should always handle and use herbicides with respect, it is interesting to consider the case of copper-based herbicides such as Cutrine-Plus®. These are widely used in the management of algae problems. The active ingredient in such products is copper, which is also a part of most human multivitamins.

Ominous Language Should Be Read In Perspective

Consider this warning for household vinegar from a Safety Data Sheet (SDS):

Effects of exposure: PROLONGED INHALATION OF VAPORS CAN CAUSE IRRITATION TO RESPIRATORY TRACT. WILL CAUSE EYE IRRITATION – SMARTING AND REDDENING OF THE EYE.
First Aid: INHALATION: REMOVE TO FRESH AIR. SUPPORT BREATHING (GIVE O₂/ARTIFICIAL RESPIRATION). FLUSH WITH COPIOUS AMOUNTS OF WATER. CALL PHYSICIAN. EYE: FLUSH IMMEDIATELY AND THOROUGHLY WITH WATER FOR AT LEAST 15 MINUTES TO 20 MINUTES (TIMED BY A CLOCK). CALL A PHYSICIAN. INGEST LARGE AMOUNTS, WATER SHOULD BE DILUTED TO CONSUME. DO NOT INDUCE VOMITING. DO NOT GIVE EMETICS OR BAKING SODA. CALL A PHYSICIAN.

This warning is for vinegar, a substance with which most people are familiar and unafraid to use, given common sense. The ominous language used is intended for extreme situations in which something highly unusual has happened.

And so it is, with many of the warnings found on aquatic herbicide labels, such as:

- May be harmful to fish and wildlife
- May be fatal if swallowed or
- Avoid breathing vapor or spray mist

While these are real potential hazards, be careful not to jump to conclusions when reading such statements. Just as splashing vinegar onto your face will lead to problems, so can any herbicide, if misused.

Take the time to read and understand all label instructions. so bad scenarios will be avoided. If in doubt about how to calculate rates and properly use the herbicide, seek advice from your county Extension educator or another person knowledgeable about pesticides, or seek a professional to treat your pond. The Oklahoma Department of Agriculture makes available a listing of certified aquatic applicators through <http://www.kellysolutions.com/OK/> for the state of Oklahoma. Search by the “commercial category” of “aquatic pest control.”

“The Dose Makes the Poison” is an old and true adage.

The word dose refers to the total amount of a substance to which an individual is exposed through the mouth, lungs or skin. Medicines, vitamins, caffeine, alcohol and even water can result in death if the dose is too large.

Approved and Unapproved Herbicides

Apply only herbicides approved by the EPA and the State of Oklahoma for use in ponds. Your local county Extension educator can assist in selecting an appropriate herbicide based on the problem plant, the pond and the uses of it. It is common for approved aquatic herbicides to have specific withdrawal times for certain pond uses such as livestock watering, swimming, fishing or irrigation. For more information see SRAC publication 361, [Aquatic Weed Management: Herbicides](#).

Karmex[®] and other Diuron[®] herbicides are **not** approved for use in ponds.

RoundUp[®], a commonly used glyphosate herbicide is **not** approved for use in ponds. There are other glyphosate herbicides which are approved for aquatic sites. The difference lies in additional ingredients in RoundUp[®], making it more toxic to certain kinds of aquatic life.

Reasonable Precautions

Beyond calculating the amount of herbicide needed and the best method of application, there are some additional steps needed to ensure all goes well with the herbicide application.

For the applicator:

- Do not allow herbicides to contact skin.
- Do not let herbicides get near eyes or mouth.

- Use gloves and eye protection, long sleeve shirts and other steps outlined in EPP-7450, [Safe Use of Pesticides in the Home and Garden](#). Always follow label recommendations on appropriate PPE (personal protective equipment). Every pesticide label will have a section outlining what personal protective equipment is required. Be sure to read and follow these guidelines.

For the environment:

- Do not apply at more than the recommended rate.
- Do not use herbicides which are not labeled for aquatic sites (e.g. Karmex[®], RoundUp[®])
- Be aware of the possibility of herbicide moving off target, causing problems elsewhere. This includes pond overflow, and the drift of fine droplets or vapor from foliar applications. Talk with the county Extension educator about steps to reduce these risks.

The greatest risk to the environment when using approved aquatic herbicides is killing too much plant material at one time. This leads to a fish kill, as decomposition of plants use up all dissolved oxygen. To help avoid this, treat only a quarter of the pond at a time and do not treat during the warmest months.

Are There Alternatives to Chemicals?

Chemicals should not be considered a cure-all. It is typically best to combine herbicide applications with other steps to make the pond less suitable for the excessive growth of aquatic plants. Steps can be considered in combination with herbicides, or on their own, include using dyes to starve submerged plants for light, deepening of shallow areas to eliminate areas favorable to plant growth and reduction of nutrients coming into the pond. The county Extension educator can assist in developing a management approach more sophisticated than just applying herbicide. If underlying issues are not corrected, plant problems usually return.

Grass carp, a plant-eating fish, may be effective on some submerged and floating plants. Cattails and other tough, fibrous plants will not be affected by grass carp. They are generally a bad idea in ponds where fishing is important because they eliminate aquatic plants. Total removal of submerged higher plants is bad for fish populations and can promote excess growth of algae. For more information read CR-9203, [Grass Carp for Pond Weed Management](#).

The pesticide information presented in this publication was current with federal and state regulations at the time of printing. The user is responsible for determining that the intended use is consistent with the label of the product being used. Use pesticides safely. Read and follow label directions. The information given herein is for educational purposes only. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Cooperative Extension Service is implied.

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