

NOTICE 2015

PLM Lake & Land Management Corp.
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 www.plmcorp.net



IN 2015, SELECT AREAS OF LONG LAKE WILL BE TREATED PERIODICALLY THROUGHOUT THE SUMMER BEGINNING IN APPROXIMATELY LATE MAY FOR THE CONTROL OF WEEDS AND/OR ALGAE. Below is a list of herbicides that may be applied to the lake and associated use restrictions. On day of treatment, signs will be posted along the shoreline within 100 feet of treatment areas that indicate what products were used and specific water use restrictions that apply:

Check all that apply	Chemical product/active ingredient	Chemical trade name	Do Not Use this water for swimming and bathing until	Do Not Use this water for ornamentals or turf irrigation until	Do Not Use this water for domestic purposes or agriculture irrigation until	Do Not Use this water for livestock watering or similar purposes until
x	2,4-D ester granular	Navigate	1 day	INDEF or until approved assay indicates a concentration of 100ppb or less for ornamentals; No restriction for established turf	INDEF or until approved assay indicates a concentration of 100ppb or less	INDEF or until approved assay indicates a concentration of 70ppb or less
x	2,4-D amine granular	Sculpin G	1 day	Site-specific recommendation* No restriction for established turf/grasses	N/A on domestic; assay indicates levels under 100ppb at the water intake	See product label
x	Triclopyr liquid	Renovate 3	1 day	120 days or until approved assay indicates 1ppb or less; No restriction for established turf/grasses	N/A on domestic; 120 days or until assay indicates 1ppb or less	See product label
x	Triclopyr granular	Renovate OTF/LZR	1 day	Site-specific recommendation* No restriction for established turf/grasses	N/A on domestic; 120 days or until assay indicates 1ppb or less	See product label
x	Triclopyr/ 2,4-D amine	Renovate Max G Renovate LZR MAX	1 day	Site-specific recommendation* No restriction for established turf/grasses	N/A on domestic; 120 days or until assay indicates 1ppb or less triclopyr and 100 ppb or less 2,4-D	See product label
x	Diquat dibromide	Reward, Littora, Solera, Tribune Knockout,	1 day	3 days	5 days	1 day
x	Endothall	Aquathol K, Hydrothol 191	1 day	N/A	14 days	14 days
x	Flumioxazin	Clipper	1 day	3 days	5 days	N/A
x	Fluridone	Sonar A.S., Genesis	1 day	30 days	30 days	N/A
x	Chelated Copper	Nautique, Komeen Crystal Harpoon, Harpoon	1 day	N/A	N/A	N/A
x	Hydrogen peroxide	Green Clean PRO	1 day	N/A	N/A	N/A
x	Imazapyr	Habitat	1 day	120 days or until approved assay indicates 1ppb or less for ornamentals or turf	120 days or until approved assay indicates 1ppb or less	N/A
x	Imazamox	Clearcast	1 day	1 day	1 day	N/A
x	Glyphosate	Aqua Pro	1 day	N/A	N/A	N/A
x	Carfentrazone-Ethyl	Stingray	1 day	14 day	14 day	1 day
	Water Dye	Shade Trtmt	1 day	N/A	N/A	N/A

x	PLM Blue, Cygnet Select: water dye (tracer), Copper Sulfate Alonglife: copper sulfate, Citrine Plus-Ultra, Captain-XTR, Algimycin, Earthtec, SeClear, Formula F-30, K-Tea: chelated copper, Cygnet Plus, PolyAn: Adjuvant, Pak 27, Green Clean L: oxidizer, AquaPrep: enzymes & non-ionic surfactants, Nutrisorb,, M.D. pellets: gram negative, naturally occurring bacteria. PLM Enzyme: enzymes, Phoslock: phosphorus locking technology.	No Restrictions on swimming, bathing, irrigation, domestic purposes or livestock watering.
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For a complete listing of all product labels, please see our website. N/A=Not Applicable INDEF= Indefinite
***Site-Specific recommendations to limit ornamental irrigation with Renovate & Sculpin granular treated water will typically last 2-14 days. Contact PLM for further information.**

The chemicals used for Aquatic Nuisance Control are registered by the U.S. Environmental Protection Agency and the Michigan Department of Agriculture. The potential for damage to fish and other non-target organisms is minimal provided that the product is used as directed on the product label and the permit. To minimize the possible effects on health and the environment, the treated water is restricted for the above purposes.

PLM Lake & Land Management Corp. Certified Applicators: Salvatore Adams, Tyler Beatty, Jason Broekstra, Jim Chatel, David Comeau, Jaimee Conroy, Bill D'Amico, Jeff Fischer, BreAnne Grabill, Dustin Grabill, Garrett Groves, Benjamin Halbersma, Steve Hanson, Mitch Hiler, Jake Hunt, Nate Karsten, Justin Krueger, Blake Mallory, Michael Pichla, Ernest Schenk, James Scherer, Ben Schermerhorn, Lucas Slagel, Jeff Tolan, Andy Tomaszewski, Dennis Vangessel, Mathew Warddell

Commonly Asked Questions: Risk/Benefit Statement

What is a Pesticide?

A pesticide is any substance or mixture of substance intended to control pest infestations. The word pesticide covers a broad range of products that control a wide range of pests. Pesticides may be broken down into categories of products (herbicides, insecticides, fungicides, picecides, matricides and rodenticides). There is also another category known as plant growth regulators (PGR). In the world of aquatic plant management, herbicides and algaecides are the most commonly used pesticides.

Why Are Pesticides Used?

Pesticides (Herbicides/Algaecides) are used to improve and maintain the recreational uses of water. A well maintained lake or pond would increase the value of your home. They can also improve the general aquatic ecosystem. A lake or pond choked with aquatic weeds can lead to stunted fish populations. Certain types of algae can be toxic to man, fish and other aquatic life. Pesticides are used to bring a balance back into the aquatic ecosystem. It is important to know that all plants are not weeds. Therefore, no aquatic management plan should attempt to eliminate all plants from the aquatic system. Your professional lake manager has taken care to provide a program that both reduces nuisance aquatic plants and maintains some plants to provide cover and food for aquatic organisms that depend on plants and algae for their very existence.

Toxicology

Toxicology is the measure of a substance to cause harm. The risk associated with harmful substances is a combination of toxicity of a substance and the amount of exposure to the substance. In the aquatics industry, both the toxicity and exposure are minimal. Most aquatic herbicides are mixed with water and evenly applied over the surface of the water. Dilution soon effects the concentration of an herbicide in the water. For example, Reward when applied at two gallons per surface acre would require a 150-pound person to consume 3,750-7,500 gallons of treated water immediately after application to ingest enough active ingredients (diquat dibromide) to achieve a lethal dose concentration 50 percent of the time. Typical application rates for Endothol products (Aquathol and Hydrothol) are between 1 ppm (parts per million) and 5 ppm. The LD/50 for Endothol is 230 ppm. Herbicide usage rates are expressed in parts per million or even parts per billion in the case of Sonar.

Pesticide Classification

Pesticides are given a classification upon registration with the EPA. There are two broad classifications of pesticides as established by the EPA. The first classification is general use pesticide. These are considered lower in risk and are available for sale and use by the general public. Most of the herbicides used in the aquatic industry are for general use. The second classification is restricted use pesticides (RUP's). Reward is a RUP. These herbicides can only be purchased by state certified professionals. The Michigan Department of Agriculture currently certifies Commercial Pesticide Applicators, pursuant to Act 171 of Public Acts of 1976 as amended.

Environmental Fate

Many questions are asked regarding what happens after a pesticide is used in a lake or pond. Generally, pesticides break down rapidly in the environment. Depending on the products used, a combination of sunlight, water chemistry and microbial action break the pesticide down into natural components. Some pesticides, such as Reward, bind with sediments and are no longer available as an herbicide.

Michigan Department of Agriculture (MDA)

The Department of Agriculture mandates that any company offering an aquatic weed control service must have both a commercial license and personnel with pesticide applicators certificates. For certified applicators to maintain their license they must either participate in an MDA approved continuing education course or take a written exam every three years. They may also attend conferences and meetings that person the latest research concerning aquatic pesticides, proper usage and new application techniques within the industry. One such group in Michigan is the Midwest Aquatic Plant Management Society. All pesticides used in Michigan must be registered with the MDA and the EPA.

Regulations Department of Environmental Quality (DEQ)

The Department of Environmental Quality (DEQ) regulates the use of herbicides and algaecides by issuing permits to control nuisance aquatic plants. The DEQ provides licensing and certification of commercial applicators. The DEQ can answer questions at www.michigan.gov/DEQ or 517-241-1300.

RELATIVE TOXICITY OF CHEMICAL SUBSTANCES

Acute Oral-Rates
LDC/50-mg/kg

Less Toxic

Fluridone	10,000
Glyphosate	5,600
Table Salt	3,000
Renovate	2,574
Aspirin	1,000
2,4-D(DMA)	300-1,000
Copper Sulfate	300
Reward	230
Caffeine	192
Nicotine	53
Sodium Cyanide	6.5

Most Toxic

LD C/50 (lethal dosage/50%) is the amount of active ingredient required to cause the death of one-half of the test population

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Product Registration

All products are regulated by the EPA and must maintain registration with agency. The EPA determines if a product will be a general use product or a restricted use pesticide. The EPA may at any given time ask for additional data on a product. Companies are required to keep all data on a pesticide for the life of the compound. Registration and re-registration of a compound are estimated to cost the producer between 2.4 and 4.0 million dollars. The cost of research and development for new products is typically between \$30 and \$70 million dollars before the first product can be sold commercially.

Common Sense

All pesticides may cause harm at some level of use. There is little chance for direct exposure to an herbicide in its concentrated form to anyone who is not a pesticide applicator. If a treatment of your lake or pond has been performed and you cannot find a notice indicating water use restrictions, it is highly probable that non-water restrictive products such as copper sulfate or cutrine-plus have been applied. There are two distinct categories of treatments, nuisance vegetation and nuisance algae. Treatments for aquatic vegetation normally involve some type of water restrictive product and requires the posting of restriction signs. Algae treatments usually involve non-water restrictive products and therefore a green posting sign will be used.

The Dose Makes the Poison

"Solely the dose determines that a thing is not a poison," observed Paraceluss, the father of modern toxicology, more than 400 years ago. Paraceluss was right. Prescription drugs, for example, are therapeutic if taken in small doses, but can be dangerous if abused or taken in overdose proportions. Pesticides, like antibiotics are effective when used in the circumstances, but can become a threat to the environment or even human health in improperly used. Just as in medicine, the risks inherent in a particular pesticide must be weighed against the benefits gained from its measured use.

General Comments

Overall great care and thought have gone in deciding the best management program for the control of nuisance aquatic plants and algae on your lake or pond. Our goal is to manage the high use areas of the water body; eliminate exotic species (non-native) such as Eurasian milfoil; and provide a good habitat for fish and other aquatic life.

Should you observe an unusual effect following a pesticide application, immediately wash with soap and water and call your professional lake manager and your doctor. Your doctor will require information about the products applied. Additional emergency information about the pesticide maybe obtained by contacting the **Poison Control Center at 800-632-2727 (616 area code), or 313-745-5711 (616,810, or 906 area code)** or the National Pesticide Telecommunications Network at 800-858-7378.
