

Imazapyr Chemical Fact Sheet

Formulations

Imazapyr was registered with the EPA for aquatic use in 2003. The active ingredient is isopropylamine salt of imazapyr, (2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid). Formulations that can be used on aquatic vegetation in Wisconsin include Habitat™, Ecomazapyr 2sl™, Imazapyr 2sl™, and Polaris AC. Imazapyr is used for control of emergent and floating-leaf vegetation. It is not recommended for control of submersed vegetation.

Aquatic Use and Considerations

Imazapyr is a systemic herbicide that moves throughout the plant tissue and prevents plants from producing a necessary enzyme, acetolactate synthase (ALS), which is not found in animals. Susceptible plants will stop growing soon after treatment and become reddish at the tips of the plant. Plant death and decomposition will occur gradually over several weeks to months. Imazapyr should be applied to plants that are actively growing. If applied to mature plants, a higher concentration of herbicide and a longer contact time will be required.

In Wisconsin, imazapyr is used to control the invasive plants common reed (*Phragmites australis*), purple loosestrife (*Lythrum salicaria*) and Japanese knotweed (*Polygonum cuspidatum*). Native species that are also controlled include cattails (*Typha* spp.), water lilies (*Nymphaea* sp.), pickerelweed (*Pontederia cordata*), duckweeds (*Lemna* spp.) and arrowhead (*Sagittaria* spp.).

It is important to note that repeated use of herbicides with the same mode of action can lead to herbicide-resistant plants, even in aquatic plants. More resistant weeds have developed to the ALS inhibitor herbicides than to other herbicide types, and so this mechanism of action may be more susceptible to developing resistance. In order to prevent herbicide resistance, avoid using the same type of

herbicides year after year, and when possible, use non-herbicide methods of control instead.

Post-Treatment Water Use Restrictions

There are no restrictions on recreational use of treated water, including swimming and eating fish from treated water bodies. If application occurs within a ½ mile of a drinking water intake, then the intake must be shut off for 48 hours following treatment. There is a 120-day irrigation restriction for treated water, but irrigation can begin sooner if the concentration falls below one part per billion (ppb).

Herbicide Degradation, Persistence and Trace Contaminants

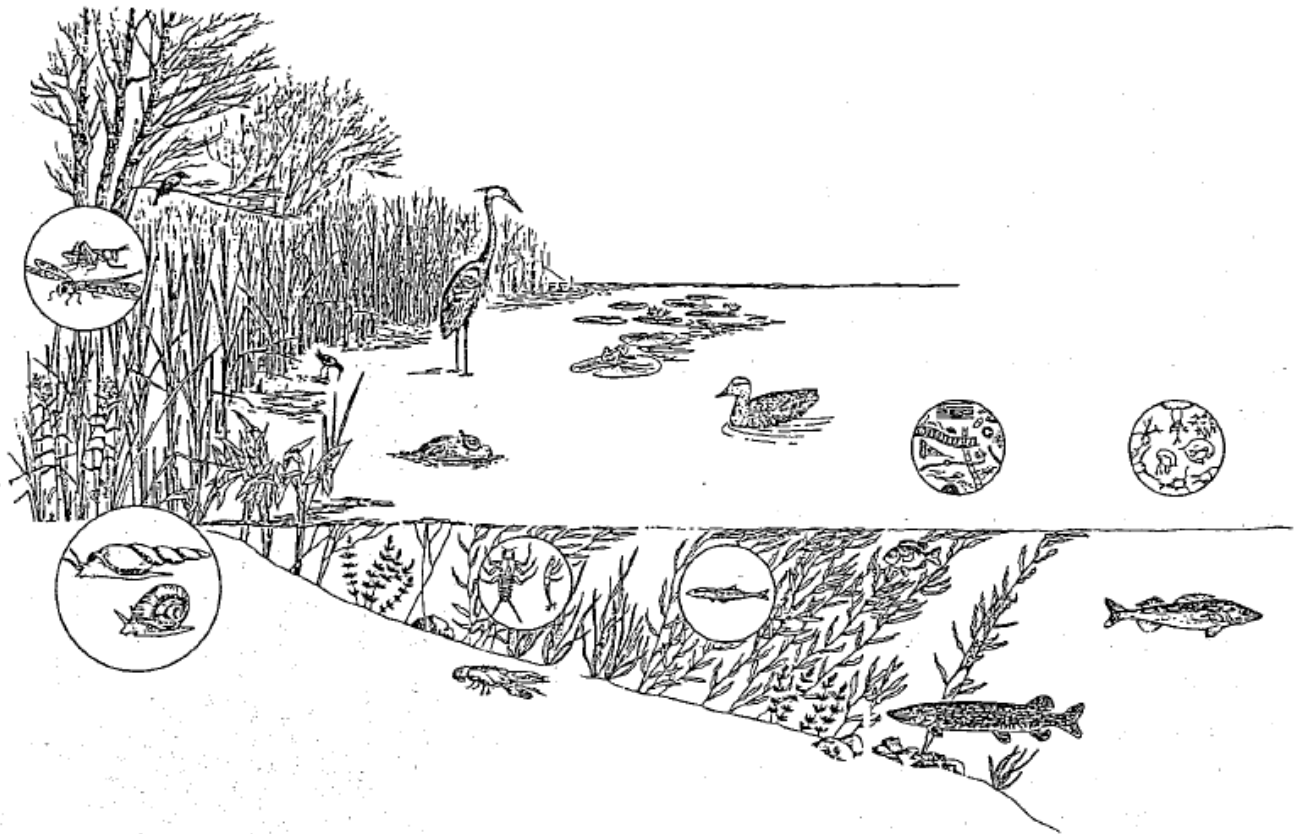
Imazapyr is broken down in the water by light and has a half-life (the time it takes for half of the active ingredient to degrade) ranging from three to five days.

Three degradation products are created as imazapyr breaks down. These are pyridine hydroxy-dicarboxylic acid, pyridine dicarboxylic acid (quinolinic acid), and nicotinic acid. These degradates persist in water for approximately the same amount of time as imazapyr (half-lives of three to eight days).

In soils imazapyr is broken down by microbes, and persists with a half-life of one to five months. It doesn't bind to sediments, so leaching through soil into groundwater is likely.

Impacts on Fish and Other Aquatic Organisms

Imazapyr is practically non-toxic (the EPA's lowest toxicity category) to fish, invertebrates, birds and mammals. Toxicity tests were not conducted on amphibians or reptiles. It does not bioaccumulate in animal tissues.



Human Health

Concentrated imazapyr has low acute toxicity on the skin or if ingested, but is harmful if inhaled and may cause irreversible damage if it gets in the eyes. Applicators should wear chemical-resistant gloves while handling, and persons not involved in application should avoid the treatment area during treatment.

Chronic toxicity tests for imazapyr indicate that it is not carcinogenic, mutagenic, or neurotoxic. It also does not cause reproductive or developmental toxicity, and is not a suspected endocrine disrupter.

Imazapyr degradates are no more toxic than imazapyr itself, and are excreted faster than imazapyr when ingested.

For Additional Information

Environmental Protection Agency
Office of Pesticide Programs
www.epa.gov/pesticides

Wisconsin Department of Agriculture, Trade,
and Consumer Protection
<http://datcp.wi.gov/Plants/Pesticides/>

Wisconsin Department of Natural Resources
608-266-2621
<http://dnr.wi.gov/lakes/plants/>

Wisconsin Department of Health Services
<http://www.dhs.wisconsin.gov/>

National Pesticide Information Center
1-800-858-7378
<http://npic.orst.edu/>

