Barley Straw for Algae Control

By Gary Fornshell, Extension Aquaculture Educator
University of Idaho Extension

Barley straw as a control for algae in ponds has received considerable attention within the last several years. It's common to see nurseries, garden shops, and web sites sell barley straw to control algae in ponds in general and specifically for water gardens and ornamental ponds.

The use of barley straw as an algae control method began in England during the early 1990s. In addition to ponds I England, barley straw is used in large reservoirs and canals. Laboratory research conducted in England suggests the presence of rotting barley straw in water inhibits the growth of several planktonic and filamentous algae. However, limited research studies in the U.S. have had mixed results. In general, water clarity will improve in ponds treated with barley straw due to a reduction in planktonic algae growth, but thus far evidence suggests no affect on filamentous algae.

The exact mechanism in which barley straw inhibits algae growth is not known. It is thought that as fungi decompose the straw in water a chemical(s) is released that prevents the growth of algae. Two suggested chemicals are oxidized polyphenolics and hydrogen peroxide, but it is not clear if these chemicals come from the barley straw itself or are metabolic byproducts produced by the fungi. Either way, barley straws inhibits algae growth; it does not kill already existing algae.

When to apply

Because barley straw prevents algae growth, it is important to apply the straw before the algae becomes established. In northern states this will be sometime in early spring, such as mid to late April. The decomposition process is temperature dependent. When water temperatures are below 50˚F, it takes about 6 to 8 weeks for the straw to become effective in controlling algae growth, whereas when the water temperatures are above 68˚F, it takes only 1 to 2 weeks. Once control begins, the straw is effective for about 4 to 6 months.

Amount to Apply

The recommended rate is 225 pounds of barley straw per surface acre. The range from minimal control to ponds with suspended sediments (muddy water) that require a higher treatment rate is 90 to 450 pounds per surface acre. As the barley straw decomposes oxygen is consumed and applying more that 450 pounds per surface area may cause an oxygen depletion resulting in a fish kill.

How to Apply

The bales should be broken apart to enhance decomposition and water movement through the straw. The loose straw should be placed in some type of netting such as bird netting,

netting used to wrap Christmas trees and for small pond onion sacks suffice. Floats should be placed inside the netting to keep the barley straw suspended in the upper 3 to 4 feet of the water column. If place too deep or on the pond bottom the barley straw will lose its effectiveness. Straw suspended in the upper water column will enhance distribution of the growth inhibiting chemical(s) in the area where the majority of the algae grows. The netting can be anchored with ropes attached to cinder blocks or other heavy objects.

Where to Apply

It is best to equally distribute the barley straw in small quantities around the pond, however, practical considerations such as boating and fishing access may be more important factors to consider. For small ponds where only one net of straw is used placement in the center of the pond usually works best.

Resources

Holz, J.C. Controlling Pond Algae with Barley Straw. L NebFacts, University of Nebraska Cooperative Extension, Publication # NF00-429.

Lembi, C. 2001. Aquatic Plant Management – Barley Straw for algae Control. Purdue Cooperative Extension Service, Publication # APM-1-W.

http://www.exit109.com/~gosta/pondstrw.sht ACR-Centre for Aquatic Plant Management, England.