Barley Straw for Algae Control

Recently there have been several news articles regarding the use of barley straw to control algae in small ponds. Although the Division of Fish and Wildlife has very limited experience with this method, a number of Delaware pond owners have reported good success. Because this is an inexpensive and environmentally-friendly method of weed control, it may be a good first option. If it is unsuccessful, other methods may be used. Available literature was summarized to provide background on the use of barley straw.

Mechanism of control

As barley straw decomposes in the presence of sufficient oxygen, chemicals known to inhibit the growth of algae are released. Algal cells already present are not killed, but the growth of new cells is minimized.

Application

As a rule, about two bales of barley straw per acre of pond surface area will be sufficient for control of algae. Many researchers recommend packaging loose straw within a chicken-wire or monofilament cage or sack (similar to a crab pot or “tea bag” shape) and staking the cage so it will remain at the water surface.

It is best to apply the straw in early spring (April in Delaware). It takes one to two weeks to become effective at 68ºF, up to eight weeks at 50ºF. This will allow the straw to begin decomposing and minimize a build-up of heavy algae coverage.

Summary

The cost of barley straw should be minimal compared to other options for algal control. No adverse effects on fish or invertebrate species have been noted by researchers.

Planktonic, unicellular algal species are controlled more quickly than large mats of filamentous species. The chemical is rapidly absorbed by algae, but is inactivated by mud. In very muddy ponds, control of algae is likely to be less successful.

If this method proves unsuccessful, contact the Fisheries Section (302-653-2887, ext. 106) for other options and request a copy of the brochure “Controlling Algae in Delaware Ponds”.

DELAWARE DIVISION FISH & WILDLIFE

SPORT FISH RESTORATION

Sources of Barley Straw:

New Castle County	Kent County	Sussex County
Contact UD Extension Service 302-831-2667	Contact Gordon Johnson UD Extension Service 302-730-4000	Avian Aquatics (small bales) Harbeson 302-684-4640 Ron Webb Greenwood 302-349-4551

How to calculate the amount of barley straw needed for your pond:

1. Multiply the number of acres by 4047 to get number of square meters.
2. Mid-level dose is 30 grams per square meter. So multiply the number of square meters by 30 to get total grams. Divide the result by 1000 to get kilograms (kg).
3. A typical-size bale of straw weighs about 20 kg, so divide by 20 to get the number of bales. Place each bale in a chicken wire or net bag to keep it intact. If more than one bale is required, space the bales around the pond. A piece of PVC, wooden stake or metal fence post can be used to hold the bales in place.
4. A preventative dose often used is 10 grams per square meter (to calculate, use 10 grams instead of 30 in step 2 above).
5. If you are unsure of your pond acreage:
   For square or rectangular ponds, measure length and width in feet and multiply. Divide this number by 43,560 to get acres.
   For roughly circular ponds, multiply radius (one half of the width) by itself and then by 3.14 to get square feet. Divide by 43,560 to get acres.

   For example:

   Pond 1 is rectangular, 100 X 125 ft:

   100 X 125 = 12,500 sq ft. divided by 43,560 = 0.287 acres. For a **preventative dose** of barley straw: 0.287 X 4047 = 1161.5 sq. meters. 1161.5 X 10g = 11,615 g

   11,615 g/ 1,000 = 11.62 kg. This would be slightly more than ½ bale of straw.

   Pond 2 is circular, 200 ft. across :

   100 X 100 X 3.14 = 31,400 sq ft. divided by 43,560 = 0.72 acres. For a **treatment** dose of barley straw: 0.72 X 4047 = 2913.8 sq. meters. 2913.8 X 30g =87,415 g

   87,415 g/ 1,000 = 87.42 kg. This would be about 4 and 1/3 bales.