

Focus on Best Management Practices for Using Barley Straw for Algae Control in Non-Flowing Water

from Ecology's Water Quality Program, Watershed Management Section

Studies show that when barley straw is placed in water, fungi and microorganisms break down the straw to form compounds that inhibit the growth of algae.

The following guidelines for effectively using barley straw have been identified in publications from Purdue University¹ and the Institute of Arable Crops Research Centre for Aquatic Plant Management².

How much do I use?

How large is your pond? Area = (radius x radius) x 3.14
(Take the average width; divide by 2 to get radius.)

Example for a pond width of 20 ft:

Radius = 20 ft/2 = 10 ft.

$r^2 = 10^2 = 10 \text{ ft} \times 10 \text{ ft} = 100 \text{ sq. ft.}$

100 sq. ft. x 3.14 = 314 sq. ft.

Then use:

- 0.3 – 0.8 oz. for each 10 square feet, or
- 54 – 225 lbs. per acre, or
- 1– 5 bales per acre (one bale \approx 45 lbs)

The lower values are for clear water. The higher values are for muddy water.

More is *not* better. It is best not to exceed recommended amounts because more straw does not increase effectiveness and may degrade water quality.

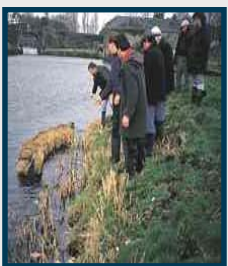
When do I place straw?

Straw should be placed in early spring, prior to the growth of algae.

- Algae start reproducing faster as waters warm.
- It takes 4-6 weeks for the barley to produce an effect.

What do I need to know?

- Use organic straw. Barley crops that are treated with herbicides do not work as well and should not be placed in water.
- Barley straw needs oxygen to release the algae-controlling chemicals.



- Loosely pack straw in nylon or mesh bags that allow water to flow through.
- Do not use whole bales or tightly packed straw since this will exclude oxygen.
- Do not force the barley straw bags totally under water in ponds or lakes.
- Straw will produce a dark color in the water for a few weeks as it decomposes. This will disappear.

Where do I place it?

Locate straw bags where control is wanted, such as around docks and swim areas.

- Place bags in inlets to ponds and small lakes to aid in aeration.
- Stake or anchor the bag in place.
- Float bags on the surface.
- Do not allow the bags to sink to the bottom.
- **A Hydraulics Project Approval (HPA) may be required. Contact your regional Department of Fish and Wildlife office prior to placing straw.**

How long does it work?

- Remove bags after four to six months.
- Straw must not be left in the water over the winter.
- We want to know how it worked for you. Your feedback will help us provide better guidance to others. Please fill out the simple questionnaire at:
www.ecy.wa.gov/programs/wq/pesticides/final_pesticide_permits/nuisance/nuisance_index.html

Questions and comments on this focus sheet may be directed to:

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For more information, you may review the following sources:

¹Lembi, Carole A. 2002, *Aquatic Plant Management: Barley Straw for Algae Control*. APM-1-W, Botany and Plant Pathology, Purdue University. E-Mail: lembi@purdue.edu

²Newman, Jonathan. August 2001, E-Mail capm@frueeuk.com *Control of Algae Using Straw*. Institute of Arable Crops Research – Centre for Aquatic Plant Management. <http://www.rothamsted.bbsrc.ac.uk>

If you need this information in an alternate format, please contact us at 360-407-6404. If you are a person with a speech or hearing impairment, call 711 or 800-833-6388 for TTY.