

HOT TOPICS

Weeds in hot water with new control technique

MINNEAPOLIS—Vigorous weed populations once resistant to traditional herbicide applications are in hot water because of a new control technology that uses a 900,000-BTU spray system fired by a 9 hp gasoline engine.

Weeds are doused with water heated to 210° F. This temperature destroys the plant's waxy coating, thus rendering it unable to retain moisture. The plant dehydrates and dies within one to two days.

Aquaheat Technology, Inc. markets the new weed control spray system, which weighs about 550 pounds and spits out 10 gpm of super-heated water. "It's something that can easily be put into a pickup truck or four-wheel drive vehicle," says operations manager Chapman Mayo. The product holds several patents and others are pending.

A larger, 4 billion BTU version of the device was originally designed for wide-scale vegetation control in Florida citrus groves, but railroad officials were attracted to the smaller system for its ability to eliminate weeds along track rights-of-way.

Others then took interest when it became apparent that the technology can be suitable for other landscape management applications.

Superintendents responsible for golf courses, parks, housing developments, schools and other institutions, local and state highways, military bases and irrigation districts wanted to know if the concept could be applied to their needs,

according to Mayo.

"The interest was so great for a smaller system that we developed one," says Mayo. "We feel that this product can be used in a cost-effective manner in a number of areas."

Mayo feels that the Aquaheat machine can be particularly effective in situations

toward lawns. "Steam is not as effective. We feel the hot water does a better job of effectively contacting the plant," says Mayo.

Mayo adds that in the Southwest, the machine is being used on a limited basis for dousing fire ant mounds, and to control aquatic weeds. "If [the weeds] stick

above water, we can burn them down to the water level," Mayo reports.

Tests are focusing on golf courses—using the device (with water heated to a cooler 150° F) to control surface insects. "We're watering the grass with hot water, basically," Mayo explains. Bugs near the surface are getting their gooses cooked, while the turf itself is not harmed. "We're not using a tremendous amount of water, so we're not soaking the lawn," he points out.

The New Jersey Department of Environmental Protection tentative-

ly has a positive review of the introduction of the device, according to the agency's Carmen V. Valentin.

"Hot water technology to control weeds is an effective tool that can be used as part of an integrated pest management approach," Valentin notes.

"In New Jersey, this technology has the potential for use in sensitive areas such as schools and parks, and areas where the application of herbicides can jeopardize the environment such as barrier islands or the shore areas," she adds.

The Garden State was introduced to the



Smaller system allows turf managers to kill weeds with a totally new environmentally-friendly hot water bath.

where the public is concerned about traditional pesticides. "Parks and schools are begging for alternatives to calm people down," he reports, stressing that the technology provides excellent weed control in addition to its ecological features.

A study conducted in New Zealand comparing the effects of hot water versus glyphosate showed that weeds treated with hot water were dead within two days, while those treated with glyphosate took 7 to 10 days for yellowing symptoms to appear.

The technology differs considerably from simply directing a steam cleaner

ELSEWHERE

Letters from sad, happy readers, page 56

Next generation of bio control?, page 58

Books, videos for green industry, page 60

concept when Asplundh's Railroad Division tested the larger unit. Officials were impressed, according to Valentin.

"The treatment, which is the first of its kind for right-of-way weed control in New Jersey, showed immediate results as once vigorous weeds started to droop and wilt minutes after being sprayed with the hot water," she recounts.

"What made the demonstration even more dramatic is that the rail track had not been used in 13 years and was so overgrown with weeds that it was not visible at all before the treatment," according to Valentin.

Mayo holds high hopes the the technology will be a financial success: "There's a lot of interest from tons of markets."

—James E. Guyette

GREEN INDUSTRY EVENTS

What's going on in the industry

MARCH

1: New Jersey Landscape '95, Meadowlands Convention Center, Secaucus, N.J. Phone: (201) 664-6310.

1-4: Outdoor Power Equipment Dealers Assn. annual meeting, Sheraton Grand Torrey Pines, La Jolla, Calif. Phone: OPEDA, (215) 564-3484.

2: Midwest Sports Turf Managers Association annual meeting, Schaumburg (Ill.) Golf Club. Phone: 708) 439-4727.

2-3: CalScape Expo 95, Irvine (Calif.) Marriott Hotel. Phone: Mary Golden, (619) 723-9910.

5: Tampa Bay Horticultural Trade Show, Tampa (Fla.) Convention Center. Phone: Tampa Bay Wholesale Growers, (813) 960-1457.

6-8: Massachusetts Turf Conference, Springfield, Mass. Phone: (413) 549-5295.

8: Professional Plant and Turf Conference, sponsored by Nassau/Suffolk Landscape Gardeners Assn., Huntington (N.Y.) Townhouse. Phone: (516) 665-2250.

11-14: Canadian Turfgrass Conference & Trade Show, Ottawa Congress Center, Ottawa, Ontario, Canada. Phone: Canadian Golf Course Superintendents Assn., (905) 602-8873.

14: Minnesota Sports Turf Managers Association meeting. Phone: Mike McDonald, (612) 828-6525.

15-16: Integrated Pest Management

Taking issue with editor's environmental perspective

To the editor:

With deference to your editorial piece in the December 1994 issue (p.1, "As We See It"), I am moved to respond as follows:

1) Contrary to your opinion regarding "oppressive government," laws governing the manufacture, sale and use of pesticides were in direct concern for an environment polluted with man-made toxic chemicals.

2) Thanks to EPA, FIFRA and OSHA, this country is on its way to protect us humans and the rest of God's creatures from being poisoned by our own hands.

3) The real entrepreneurs in this world are those individuals who accept our mistakes and strive to find remedies for our problems.

4) You must certainly believe in Santa Clause [sic.] if you think that the "market will regulate itself." If that were true, we wouldn't need half the laws on the books to protect the public from greedy individuals.

5) I do not want to renew my subscription.

Richard C. Fry
Transylvania County
(N.C.) Parks & Recreation

Correcting reference to his company name

To the editor:

I enjoyed your article on Tom Delaney, "Lawn Care Industry Person of the Year." I have worked with Tom concerning lawn care issues and he is very deserving of the award.

I would have liked to frame the list of past recipients since our past owner/president, the late Jim Marria, was a past winner. I can't do this, though, because you have our company wrong. We are Perma-Green Lawn Care Co., one of the 15

in Landscapes Conference, Lolowna Lodge Hotel, British Columbia, Canada. Phone: Georgena Good, (604) 980-9735.

15-16: Reinders Turf Conference, Waukesha (Wis.) Expo Center. Phone: Ed Devinger, (414) 786-3301.

17: Turf Management Seminar, El Cajon Community Center. Phone: (619)

largest lawn care companies in the U.S. We are a 10-year-plus member of the PLCAA, but we do not build and sell spray equipment. Perma-Green Supreme is a completely different company.

Jim Marria needs to be remembered as the founder of our company.

Ben Miller
Perma-Green
Boise, Ida.

(We stand corrected.—Ed.)

Says watch out for invasive perennials

To the editor:

This note is in reference to an article that appeared in your magazine in August 1994 on perennial plants. The information appeared on page 35 and apparently was taken from a book called Garden Design Ideas.

Under a listing for summer perennial favorites tolerating wet soil, purple losses-trife (*Lythrum salicaria*) is mentioned. Although there is a notation that plant is invasive, there is no mention of the fact that it is banned or about to be banned in 13 states due to the fact that it crowds out all other plants when it becomes established in wetlands.

Some plant varieties are currently being sold that are supposed to be sterile, but trials with these plants have shown that, in fact, very few of them are sterile. Thus, it is best not to promote or sell this invasive, non-native perennial.

It would be educational for your readers if your magazine could present an article about this plant and other plants that have "escaped" the yard to become a problem in the wild.

Catherine A. Bergens
Indiana Dept. Natural Resources
Indianapolis, Ind.

670-1980 x262.

24-26: Student Career Days, sponsored by Associated Landscape Contractors of America, North Metro Technical Institute, Acworth, Ga. Phone: (404) 975-4030.

Cornell prof sees 'hybrid fungus' as next generation of bio-control

■ A new biological fungicide is expected to receive EPA registration this month, according to Dr. Eric Nelson of Cornell University.

The new strain—*Trichoderma harzianum*—is a product of protoplast fusion, a process analogous to plant breeding. In the process, different genetic material is combined to form what Nelson—speaking at the New York State Turfgrass Association Turf and Grounds Exposition—described as a “hybrid fungus.”

The new product will control Dollar spot, brown patch and pythium blight. Nelson described the product as, “A highly effective biological agent,” which can be applied with conventional equipment.

A new company called TGT—whose founders include Cornell researchers—will manufacture the product.

Initial product distribution will be limited to west of the Mississippi. The Wilbur Ellis Co., of Fresno, Calif. will distribute the product.

Nelson said the product is not without drawbacks: it's sensitive to Banner, Rubigan and the triazole fungicides, and is most effective when soil temperatures are above 55-60° Fahrenheit.

Additionally, Nelson said researchers do

CHEMICAL VS. BIOLOGICAL PRODUCTS

	CHEMICAL	BIOLOGICAL
	<u>PRODUCT DEVELOPMENT</u>	
Research/develop.	\$20 million	\$0.8-\$1.6 million
Toxicology testing	\$10 million	\$0.5 million
Patentability	straightforward	risky
Discovery	undirected screens	directed screens
	large numbers	low numbers
	high success	success questionable
Profitable market	\$40 million/yr.	\$1.5-\$10 million/yr.
	<u>PRODUCT USE</u>	
Efficacy	high	moderate
Control spectrum	broad	narrow
Speed of action	typically fast	typically slow
Health/environmental effects	well-established adverse	unknown

Source: Dr. Eric Nelson

not know how the product will react to herbicides or insecticides.

The product is expected to be formulated as a wettable powder, a granule and emulsifiable concentrate.

Nelson said the product has a shelf life of 1-2 years.

In tests conducted on dollar spot from August to October, the product was most effective when applied as a granular in conjunction with a foliar spray.

“There is a delay in the progress of the disease, then it peters out,” says Nelson.

Nelson says that unlike the performance of some chemical fungicides, the new biological product can reduce the populations of pathogens in the soil.

Nelson says the product “worked well”

in spray applications to plots infected with Pythium and Rhizoctonia.

“One of the keys will be various additives—such as surfactants—that give the product better coverage,” says Nelson.

In the area of compost research, Nelson says it has been more difficult to predict how a compost mix will react against diseases in turfgrass.

“There's no good way of knowing that,” says Nelson, who says it's difficult to screen compost mixes for their disease suppression properties.

“We're trying to relate microbial properties (of compost) with disease suppression properties,” says Nelson. “Compost use will improve as we can manipulate the composts more.”

DowElanco responds to 'Eye to Eye' criticism

INDIANAPOLIS—DowElanco took quick issue with points made in the Jan. 12th installment of the CBS television show “Eye to Eye with Connie Chung.”

“Nothing depicted on ‘Eye to Eye with Connie Chung’ should undermine the public confidence in DowElanco and its products,” the company stated in a press release the next day.

The show highlighted several people with health problems that they contend stem from the use of Dursban.

DowElanco makes clarifications in the cases of Jack Kahn, the residents of Building 8 (an office building in Albany, N.Y.), and Tri-County North School District in Ohio.

About Kahn, who claimed he was put out of a pest control job and out of the

workforce because of health problems stemming from his experiences applying Dursban:

“Mr. Kahn's medical records document that he was diagnosed—as early as...1984—as having neurological and immune disorders very similar to those which he now attributes to our product. His first exposure to Dursban was in 1989.”

About Building 8, whose residents claim adverse health effects from Dursban:

“According to the state Department of Health report, the highest levels of Dursban measured in Building 8 were 10,000 times lower than those needed to cause any effect in humans.”

And about the Ohio school children who complained of nausea and other negative reactions from the spraying of

Dursban in their school, DowElanco says this:

“DowElanco has not been named as a party in this suit. A health hazard evaluation by the National Institute of Occupational Safety and Health found that the complaints were likely related to carbon dioxide buildup...in combination with the presence of volatile organic compounds derived from liquid toner used in photocopiers.”

DowElanco concluded:

“We are cooperating fully with the U.S. EPA. We are confident that the Agency's review will reaffirm the wide margin of safety of Dursban products. DowElanco hopes to see the issues raised in the ‘Eye to Eye’ segment resolved by the EPA review.”

—Jerry Roche