

W.Va. researchers test 'promising herbicides'

From Staff Reports

Crabgrass, white clover, Virginia buttonweed and other weeds are increasingly under attack by new chemicals, and Virginia Tech scientists are evaluating the war.

Reviewing tests done on "promising herbicides for the '90s," Virginia Tech Dr. S. Wayne Bingham gave mostly good marks to prodiamine (Barricade), clopyralid (Transline), clopyralid plus triclopyr (Confront), isoxaben (Gallery), fenoxaprop (Acclaim), and the only pre- and post-emergent herbicide in the group — dithiopyr (Dimension).

Bingham, speaking at the Virginia Turfgrass and Landscape Conference in January, said testing on Virginia buttonweed compared new broadleaf herbicides and the best-known standards — 2,4-D plus dichlorprop and 2,4-D plus dicamba.

While the 2,4-D mixtures provided fair to good control for six to 12 weeks, the weed "appears to make a comeback from

underground rhizomes and seed," Bingham said.

Similar control was gained by applying clopyralid at high rates or repeated treatments, and clopyralid plus triclopyr. Clopyralid alone requires a higher rate than needed for some other common broadleaf herbicides, he said.

"Perennial weeds in general appeared to need the high rates. Clopyralid appeared to inhibit new bud regrowth on perennial weeds for slightly longer periods than for other broadleaf herbicides. This appeared to happen for common dandelion, Virginia buttonweed and Canada thistle."

Other Virginia Tech findings:

- The pre-emergent isoxaben: Fall applications "were excellent for weeds emerging from seed, including white clover." Knotweed germinates too early in the spring for spring treatment and responds well to fall treatment. Spring applications appear to be needed for summer annuals like spotted spurge and yellow woodsorrel that emerge from May to July.

- The first pre- and post-emergent herbicide, dithiopyr: Provided pre-emergent control of crabgrass in several species of turfgrass. Granular formulations required less active ingredient for similar control.

Applied before crabgrass tillering, post-emergent control was also consistent. "Variable results were encountered after crabgrass tillering was evident; and results were poor, sometimes when applied just two weeks late." Granular formulations were less effective for post-emergent control.

- Fenoxaprop was very effective for seedling crabgrass control. "However, in some instances, more crabgrass emerges after early-season treatments. After crabgrass began to tiller, fenoxaprop was still quite effective (sometimes requiring slightly higher rates) while dithiopyr gave less-than-desirable crabgrass control. Early post-emergence dithiopyr treatments did provide pre-emergence crabgrass control for the remainder of the season.



Dreaded crabgrass

- Prodiamine was very effective for pre-emergent crabgrass control, mixed at about .65 pound ai/A. Lower rates were less consistent from time to time. Goosegrass control appeared acceptable with prodiamine at .65 to .75 applications. Pre-emergent poa annua control was also acceptable.

"The residual effects from prodiamine provide complete season-long control. It will last six months at levels required for crabgrass control. At the normal label rate, areas will require four months or more before reseeding are successful," Bingham reported.

WAITING FOR EPA SIGN-OFF

Corn byproduct is emerging on market as a pre-emergent herbicide

By HAL PHILLIPS

A pelletized, corn byproduct that would be labeled as a pre-emergent herbicide might be on the market late this spring, depending when the federal Environmental Protection Agency signs off.

Amazing (get it?) Lawn will be marketed by Gardens Alive Corp. of Lawrenceburg, Ind.

Testing conducted at Iowa State University has shown corn gluten meal to effectively inhibit root formation in crabgrass, nightshade, buckhorn plantain, dandelions, purslane and even annual bluegrass, according to Dr. Nick Christians, a professor of turfgrass science in ISU's Department of Horticulture.

The unique powers of the corn meal were arrived at seven years ago, quite by accident.

"We were actually doing a totally unrelated project where cornmeal was being used to grow a fungal organism," said Christians. "The object was to establish a root pythium in the soil. We were using the corn meal as a control, but we saw inhibition of seedling establishment where we used cornmeal."

"Its activity is to inhibit root formation at the time of germination. So it's pre-emerge only. Once the weed has emerged, the corn meal actually acts as a natural fertilizer."

A byproduct of the wet-milling process, corn gluten meal is a 60 percent corn protein material approximately 10 nitrogen by weight, Christians explained. Sold primarily as a feed material for cattle, corn gluten meal is produced as a fine yellow powder, but can be pelletized for easier application.

Such is the case with the forthcoming pre-emergent herbicide, marketed by Gardens Alive.

According to Marketing Director Larry Kavanagh, Gardens Alive will distribute the product "as soon as the EPA lets us. It's in the hands of fate, but we do think it should happen sometime in the next couple of months," he said.

"In a dream world, we would get EPA approval in time for spring application. But it doesn't look like that will happen."

Kavanagh said crabgrass germinates around the same time forsythia blooms. So when the forsythia are about to bust out, the time is right to apply the corn gluten meal.

"It has a bit of a nitrogen kick, so you don't want to fertilize at the same time you're applying the corn meal," he warned.

"We tested it out on my lawn last year and it suppressed the crabgrass almost completely. My wife wasn't too happy with our striped lawn. But I assured her it was for the good of the company."

New-found bacteria hope for brown patch

From staff reports

CARBONDALE, Ill. — Researchers at Southern Illinois University have identified a strain of bacteria that completely stops the growth of virulent strains of brown patch in the petri dish. Now they must advance from the laboratory to the real world, where brown patch is the most damaging disease in tall fescue.

Dr. Kenneth L. Diesburg of Southern Illinois said scientists will attempt to "mass-culture" the bacteria, *Pseudomonas* fluorescence, and determine if it inhibits brown patch when applied to a tall fescue turf environment.

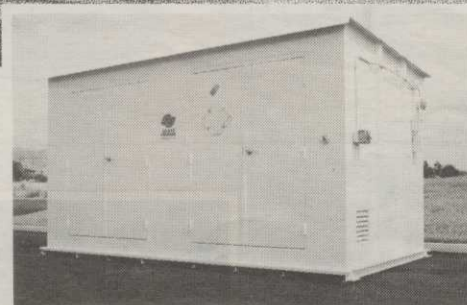
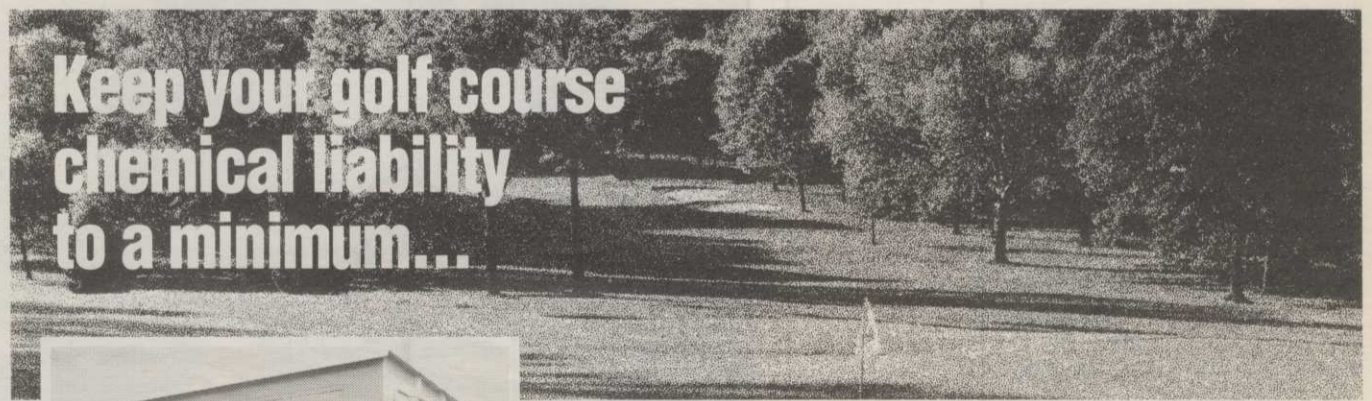
Reporting the discovery at the Virginia Turfgrass and Landscape Conference in

January, Diesburg said chemicals currently provide the best control of brown patch.

The first option, he said, is to grow healthy turfgrass, which alone inhibits invasion of pathogens into plant tissues.

"A second option is to develop a biological control of the organism that causes the disease." Thus the search for effective bacteria.

"It is difficult to say at this time whether biological controls will completely replace synthetic controls of brown patch in tall fescue," Diesburg reported. "It is highly probable that biological controls will reduce the need and use of fungicides."



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