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Closing a Gap in Crabgrass Control Programs

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Fifty years ago, management was the major recourse of the turfgrower who tried to control crabgrass in this humid climate. For the past thirty years, we have benefitted from modern postemergence and preemergence chemicals. In this period, we have not had a good herbicide for small crabgrass seedlings.

In the late 1940's, phenyl mercury acetate was used for control of seedling and younger crabgrass plants. Most commonly, this was on bentgrass turf where the chemical had value on turf diseases. This method required three to five treatments for selective control and was appropriate for many turf situations. The poisonous nature of the chemical was of concern, and contributed to its discontinuation some years before the start of intensive environmental restrictions.

Following this, an appreciable number of chemicals were tried for postemergence crabgrass control, but none showed convincing promise until fenoxaprop-ethyl* was tested approximately five years ago. This chemical has been tested at the New Jersey Agricultural Experiment Station of Rutgers University since 1982 (Engel, 1983-5). It showed considerable promise and while several similar herbicides did also, the fenoxaprop-ethyl herbicide has been tested and developed adequately for a label.

The Nature and Action of Fenoxaprop-Ethyl

This herbicide is an organic compound with a double ring structure. It is foliar absorbed. Visible activity on the grasses is not rapid and appears in seven to fourteen days. Good kill of various young annual grasses occurs in the range of 0.08-0.25 lbs ai/a. It has no preemergence action and is not effective on broadleaf weeds. Do not combine fenoxaprop-ethyl with phenoxies, but it can be combined with various preemergence materials for severe problems (Engel et al., 1983-85).

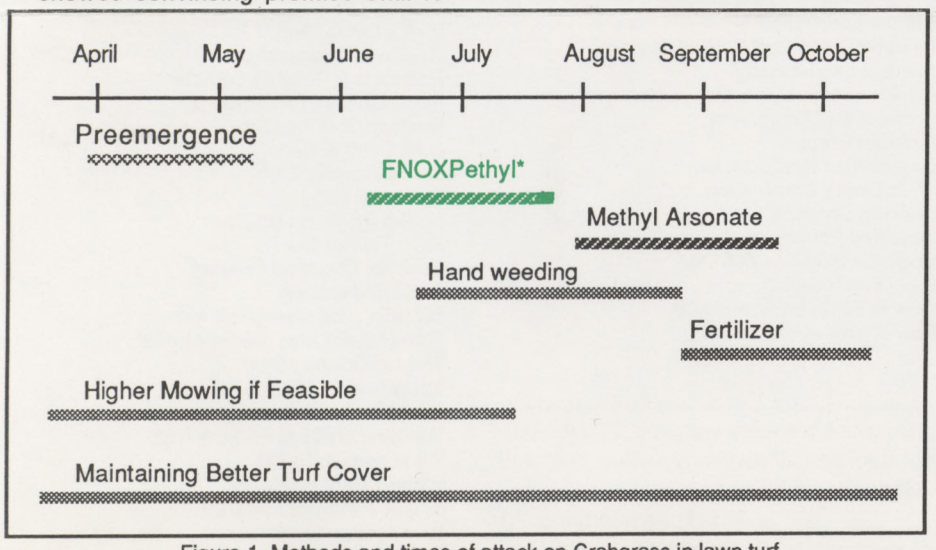

Figure 1. Methods and times of attack on Crabgrass in lawn turf
*FNOXPethyl = Fenoxaprop-Ethyl = (±)-ethyl 2-[4-[(6-chloro-2-benzooxazolyl) oxy] phenoxy] propanoate, an American Hoescht chemical which is now on the market as Acclaim.

Turfgrass Tolerance of Fenoxaprop-Ethyl

The turf-type ryegrasses have good tolerance and mature growth of Kentucky bluegrass has adequate tolerance to the herbicide during late spring. It is not labeled for bentgrass turf because injury is likely to be severe. Application of fenoxaprop-ethyl on annual bluegrass is not recommended. The senior author found serious injury to annual bluegrass on putting green turf in test trials with the recommended rate. It is labeled for turf of annual bluegrass and other Poa spp. Exercise proper caution when appreciable amounts of other grasses are present unless they are known to have tolerance.

When To Apply

Seedlings or young plants of crabgrass are easily killed with fenoxaprop-ethyl, but the plants increase resistance as they mature. Late spring through early summer is the prime season for application in New Jersey, since in most years major germination of crabgrass has taken place by late June or early July. (See Figure 1) Yet in some years, later germination can occur which could necessitate a repeat application. If a retreatment is made, wait at least two weeks after the previous treatment. Applications made after the crabgrass develops mature tillers or begins seedheads are unlikely to be effective.

Rates of Application

Treatment with fenoxaprop-ethyl on Kentucky bluegrass or turf-type ryegrasses are recommended at the rate of 0.12 - 0.25 lbs ai/a (16-32 fl. ounces of 1 lb/gal concentrate per acre). Start with the lower rate on unknown turfgrasses with questionable turf conditions. Often two applications at the 0.12 lb rate of ai/a are better than one treatment of 0.25 lb ai/a. Lower rates of 0.05 - 0.08 lb ai/a can give significant action on crabgrass and goosegrass plants that are in a very early stage of growth. This lower range of rate needs more study to determine its effectiveness where greater safety to the turf is needed.

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OPINIONS AND COMMENTS

Yours and Ours

A reader questioned me concerning what I wrote against finding a replacement for 2,4-D in the last issue of **Green World.** The intent of my brief comment was to say "Theoretical realism tells this is unlikely to be an easy, simple chore!" Also, I disagreed with the approach of using a greater total of other phenoxies. Possibly I should have made these two statements and quit.

Besides its effectiveness, two aspects of 2,4-D control of dandelions are of special interest. •••This herbicide can be used in spot treatment of these weeds far in excess of the required rate. I have used this chemical at 8 and 10 times the rate without killing or seriously harming mature lawn turf of Kentucky bluegrass. This type of safety range is unlikely with most herbicides. I say this knowing one pound per acre on seedling turfgrasses or bentgrass greens can be fatal. Spot treatment of dandelions with 2,4-D may not seem like the biggest deal, but many carry a mist bottle with a 2,4-D solution on the mower to manage total control, which should be the ultimate goal for this weed. ••• A second feature is the lack of a threat of 2,4-D resistant dandelions after forty years of abundant use. It is remarkable that a few resistant plants have not been isolated and become a real problem. ❐ **REE**

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Even when we were with you, this we commanded you, that if any would not work, neither should he eat.

--- II Thessalonians 3:10

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Effect of Mowing and Sweeping Clippings on Divot Healing and Knotweed Content

by Eggens, J.L., Pierce, N.L., Hoyt, V. and Creed, R. from Annual Turfgrass Research Report of the Ontario Agriculture College

In 1984, plots of a fairway previously mowed at 2.0 cm were mowed at both 2.0 cm (9 blades, pull mower) and 1.1 cm (triplex greensmower). In 1985, the 2.0 cm plots were maintained with and without sweeping of clippings and the 1.1 cm plots of 1984 were mowed to 0.9 cm with and without sweeping. Mechanical divots were taken July 2, 1985. Four weeks later, healing was greatest in the unswept 2.0 cm turf. This effect disappeared by weeks 5 and 7. Knotweed *Polygonum aviculare* L. content was similar for the two heights of cut when clippings were unswept. Sweeping clippings increased knotweed for both heights of cut. The increase was greater with the 2 cm than with the 0.9 cm.

[Ed. comment: Healing of divots was more rapid at four weeks with the higher cut and unswept clippings. This may have resulted from lower temperature and better growth. Clippings could aid some diseases, but if disease was an obvious factor, it would have been reported. The increase of knotweed with sweeping suggests a disturbance of the canopy that aids the weed's development. It would be of interest to run a test that compared clipping removal with a catcher and a sweeper.

A" thank you" to our Royal Canadian friends for this study and information.

The Fascination of Golf

Golf started off with a great advantage over many other sports: you did not have to be a young, fast, beautifully coordinated athlete to play it acceptably. As a result, it found ready converts among the two sexes and people of all ages. They soon discovered that once golf gets you in its grip, it never lets you go. On the other hand, there was Andrew Carnegie declaring thoughtfully that golf was "an indispensable adjunct of high civilization," and on the other, there was the story of the Scotsman who threw his clubs into the ocean after a bad round and nearly drowned trying to rescue them. Both statements added up to about the same thing.

by William Smart
Hudson Valley Foreground

From Weed Notes --JM

The 2,4-D-less Lawn Herbicide

Another company, the Andersons, has introduced a broadleaf weed herbicide which does not contain 2,4-D. It does contain a compound called BREAK-THRU, chemistry unknown. A university researcher indicates that the three-way combination of BREAK-THRU plus clopyralid, which is being sold in Canada as Lontrel, combined with Dow's TRICLOPYR appears to be the best non-phenoxy herbicide combination available. The LONTREL, incidently, is 3,6-dichloropicolinic acid. You might recognize this as related to picloram or TORDON, which makes one say "Oops!" as one remembers that this compound is going to be used on turf near trees and shrubs. ❐

Prodiamine 65WDG

Dave Eastman, now of Sandoz Crop Protection, sends me a label which indicates that this compound has an experimental use permit for turf and ornamentals. It is an active compound that may very well find a niche in the turf and ornamentals market. ❐

The first step in greatness is to be honest. —Samuel Johnson

People try to live within their income so that they can afford to pay taxes to a government that can't live within its income. ---Robert Half

Labor even the most humble and the most obscure, if it is well done, tends to beautify and embellish the world.
---Gabriele D'Amnunzio

Closing a Gap in Crabgrass Control Programs

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Condition of the Turf

A good turf that is making healthy but not lush growth appears to be the best condition for treatment. Droughtiness is not favorable. It is emphasized again that treatments on seedling turf are not recommended.

While fenoxaprop-ethyl enters the leaves and translocates to the growing points of the tillers, good spray coverage is important. If for no other reason, a coarse, open pattern of spray would permit many of the small seedling crabgrass plants to escape treatment in this easy-to-kill stage.

Turf that is moved at closer heights of cut offers a better chance for the spray mixture to reach the crabgrass blade. This also suggests spraying approximately 24 hours after mowing to minimize interception of the spray by the regrowth of turf. Also, turf clippings should be removed before spraying to avoid their interference.

Follow-up of Fenoxaprop-Ethyl Treatments

With good control and favorable growing weather in late August and September, fertilization will help the turfgrasses make good late season growth, resist crabgrass next year, and give prime appearance.

If crabgrass is present after early August, more abrupt action can be taken. On small turf areas and with only a few crabgrass plants, hand removal by cutting the roots at the soil line should assure fewer crabgrass plants next year.

If crabgrass is present in large quantities, a methyl arsonate compound (DSMA, CAMA and MSMA) can be used at this season for a quick knockdown of the crabgrass plants and for prevention of seed production. The herbicide toxicity of this chemical is such that it does not require a poison label. Kentucky bluegrass type lawns in sunny areas have more tolerance of this herbicide and offer best results. Usually two applications at seven to ten day intervals are required. Follow the label for any adjustment on rate or treatment interval. This group of chemicals is more active in hot, dry weather and less active in cool, moist weather. Turf discoloration may be severe but the Kentucky bluegrass lawn recovers nicely with good growing weather in late August - September.

In summary, we believe fenoxaprop-ethyl will be a valuable herbicide for control of crabgrass in the young seedling stage on such areas as sunny lawns, ryegrass tees and athletic field turf of Kentucky bluegrass-ryegrass or tall fescue turf. Maintaining total control of crabgrass is the best and easiest program. Persistent good management and discretion in use of chemicals will give good control.

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