
Pre-Emergence Control Now Approaches The Ultimate

A single herbicide application nearly eradicates crabgrass, but danger to the treated turf hasn't been completely eliminated.

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This article is condensed from a speech made by Gallagher at the 1962 GCSA convention.

Effective pre-emergence control perhaps has been the most sought after chemical weed control practice in the turf field. In turfgrass maintenance, crabgrass is the weed problem most frequently associated with pre-emergence herbicides. The search for the ideal material has been going on for a long time. That we have not yet found complete perfection is indicated by the number of turfgrass research people devoting time to annual tests.

Ralph Engel of Rutgers University once very concisely defined the ultimate objective of a pre-emergence turfgrass herbicide. He was searching for a method which had these characteristics: "A single treatment, simple, safe and sure". We would agree that this definition thoroughly covers all the requirements.

Done in Single Treatment

It would seem that with today's pre-emergence control herbicides, we are approaching the ultimate. Most materials now available to the supt. fulfill the requirement of a single treatment. Competitive pressures have eliminated chemicals, no matter how effective, that require two or three treatments during a single season. Many herbicides are simple to apply either as a spray or dry granular. Several are sure to the extent of 85-95 per cent control of crabgrass under a wide range of conditions.

Two Safety Factors

If there is a weakness it is in the area of safety. Safety is divided into two parts: Safety to the user and safety to turfgrass, both established and seedling.

Safety to the user can almost be assumed to be built into every herbicide which is marketed. The laws governing product registration require extensive testing, toxicological data and ample cautionary warnings of materials toxic to humans and animals. Reading the warning and abiding by the cautions for use assure safety to personnel.

Not Completely Safe

Turfgrass safety is the one phase of Engel's definition that present materials do not completely satisfy. Many compounds have tolerance for several turfgrasses and show only slight damage to susceptible species. Others are toxic to a single species. It would seem that each region has a weak species. In the North the fine leaf fescue grasses are most fre-

quently injured by herbicides; in the South it is the St. Augustine-Centipede group.

For the past three years turfgrass research stations throughout the country have been involved in pre-emergence crabgrass studies. Most stations have worked with spring applications, others have applied treatments both fall and spring, and some actually have conducted trials in fall, winter and spring in an attempt to determine the residual effects of the various herbicides. All stations have used some combination of the following materials in the 1960 field tests: Calcium arsenate, chlordane, Dacthal, Zytron, Pax, Diphane and Calcium propyl arsonate. In 1961 the above materials were tested along with these additional ones: Trifluralin, Dipropalin and Bandane.

Timing Is Important

Statements from two research people from separate sections of the country draw similar conclusions and stress the need of attention to timing. Joseph Duich reporting on tests held at Penn State in 1960 drew the following conclusions:

1) Chlordane must be used at rates in excess of 60 lb. — absolute for satisfactory control. This study showed granular chlordane as the most effective formulation.

2) Dacthal formulations were very effective for pre-emergence crabgrass control.

3) Dacthal was non-toxic to common and Merion bluegrass but significantly reduced the density of Pennlawn fescue and Colonial bent.

4) Zytron emulsion (M-1329) will temporarily discolor Merion bluegrass and reduce the density of Pennlawn fescue and Colonial bent.

5) Zytron formulations are very effective for pre-emergence crabgrass control.

6) Calcium arsenate discolored and inhibited growth of Pennlawn fescue and Colonial bent but was not too severe in reducing their density. It was non-toxic to common and Merion bluegrass and resulted in satisfactory crabgrass control.

Danger in Re-establishment

Roy Goss in a paper submitted to the Agrichemical-West, June, 1961 emphasized the danger of arsenicals to the re-establishment of desirable seedlings. He also stressed the need for the proper timing of the application. He gave dates for his area from Feb. 15 in the South to

May 1 in the Washington, Oregon, Idaho area.

In 1960 and 1961 additional herbicides were introduced. Of the many tested these following are likely to survive: trifluralin, dipropalin and diphenatril; Bandane; calcium propyl arsonate or the calcium propyl arsonate-calcium methyl arsonate combination. But once again some advantages and disadvantages show up.

Eighth Air Force Holds First Turf Conference

A new group of golf course maintenance men was introduced to a turfgrass educational program when the first annual Eighth Air Force golf course and greens maintenance workshop was held recently at Homestead AFB, Fla. The man responsible for the program was Maj. J. F. Lamper, officer in charge of construction of AFB courses at Westover, Offutt and Homestead.

Eighth AF personnel from Goose Bay in Labrador to Ramey in Puerto Rico attended. Maj. Lamper, with Capt. John Bickerstaff of Westover AFB and turf expert, Joseph Troll of the University of Massachusetts, planned the conference. All sessions emphasized fundamentals for Northern and Southern construction and maintenance.

Troll was the principal lecturer, presenting talks, slides and demonstrations on all aspects of maintenance. Other speakers included Walter L. Papp, deputy chief civil engineer, Eighth AF, Alan Wilson of the University of Florida, Robert Small, Plantation Field lab at Fort Lauderdale, Jimmy Nichols, well known New England professional, and two architects, Mark Mahannah of Miami and Geoffrey Cornish of Amherst, Mass.

A field trip was made to the turf nursery of O. S. Baker in Perrine. M/Sgt. Joseph Vicas in charge of the Homestead AFB course conducted a tour of his course and a discussion of maintenance practices and equipment. The course was designed by Mark Mahannah and opened recently. Several companies provided equipment for display while others furnished chemicals, fertilizers, irrigation pipe and descriptive literature.

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