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W-21



"Charter members" of the Illinois Custom Spray Operators' Training School looked on while University of Illinois agronomist and featured speaker Dr. F. W. Slife (seated on right) talked with "first year man" Ray Fuxa (left), Miller Chemical Co. "Old Timers," Lillard Hedden, Pekin aerial spray applicator; farm adviser A. C. Kamm, Monticello; and Weldon Wadleigh, Stauffer Chemical Co., have attended all the Schools since they started 15 years ago.

Turf and Aquatic Weed Control Surveyed at 15th Ill. Spray School

Contract applicators were among the more than 500 delegates to the 2-day, fact-filled 15th Annual Illinois Custom Spray Operators' Training School, held at the University of Illinois, Urbana, Jan. 23-24.

Although directed primarily at spraymen in agriculture, the school also turned its attention to activities in the fast-growing turf maintenance field, and touched on developments in aquatic weed control.

Dr. F. W. Slife, from the University's Department of Agronomy, led into the sessions on weed control in the urban/industrial market with a review of herbicides, emphasizing pre-emergents.

"Pre-emergent chemicals have proven their worth," Dr. Slife began. "Although there will undoubtedly be new chemicals introduced, CAs should concentrate now on making the best possible use of the formulations available."

The importance of knowing soil characteristics before beginning application was stressed. "Each pre-emergent herbicide moves differently in various soils, and this could influence results considerably," he reminded CAs.

Another important consideration is the length of time a herbicide will remain in the soil, Dr. Slife continued.

Amiben, 2,4-D, dalapon, and Eptam disappear rapidly, Dr. Slife

pointed out. "When used at recommended rates, these compounds do not normally persist for more than a month or six weeks," Dr. Slife revealed. Others, like monuron, atrazine, and simazine, may persist in toxic quantities until the next growing season.

Sod Webworm Damage Reviewed

"Although there are some 60 species of sod webworms in the U.S., less than one-third are economic," Steve Moore, associate entomologist at the Illinois Natural History Survey, told delegates. Of these, most of the damage in 1962 was caused by the larger sod webworms, *Crambus trisectus* Walker, Moore observed.

"Most obvious sign of infestation is the presence of an unusual number of birds attracted to the lawn to feed on the webworms," Moore pointed out. "But by the time birds invade lawns, there may be brown areas because of extensive webworm feeding, necessitating control measures."

"A well-kept lawn, fertilized and watered, may support a considerable population of webworms without serious damage," Moore revealed. On the other hand, a shortly mowed, dry lawn may be quickly injured.

Careful inspection is required to detect the larvae, but some of the larvae can be flushed out if water from a garden hose is allowed to run on an infested spot of lawn.

According to Moore, DDT and dieldrin were among the most reliable materials used during 1962. Since it is necessary to apply the insecticide to the blades of grass, granular formulations are not recommended, and sprays take priority over dusts.

Moore concluded with the following recommendations: "DDT should be used at the rate of 2 lbs. per acre, or one gallon of the 25% emulsifiable concentrate for an acre; this equals 1 qt. per 10,000 sq. ft. Use 2½ pints of the 1.5-lb.-per-gal. dieldrin emulsion concentrate per acre, or 10 oz. for 10,000 sq. ft. Use enough water, 100 gallons per acre or more, to thoroughly wet the grass, and then do not water the lawn for three days."

"Leading pre-emergence materials for crabgrass control appear to be Dacthal and Zytron," Dr. Slife told the spraymen in his second speech. Dacthal is recommended at 10 lbs. per acre, and Zytron at 15 lbs. per acre.

"Applications should be made about 2 weeks before expected crabgrass germination," Dr. Slife recommended. Both Dacthal and Zytron appear to lose their residue by fall, permitting fall seeding of turfgrass, if necessary.

During his discussion of new chemicals for pre-emergent crabgrass control, Dr. Slife noted that although trifluralin has given excellent control, low turf tolerance may bring homeowner complaints.

Calcium propyl arsonate works best when applications are made just before crabgrass germinates, Dr. Slife remarked. Control lasts only six to eight weeks, and seedling turfgrass has good tolerance to it.

Results have been variable, but generally good, with Diphenatril, according to Dr. Slife. "Turf has good tolerance to it, and like most other pre-emergence crabgrass control chemicals, it works best when applied along with a good fertility program," Dr. Slife conceded.

Dr. Slife concluded the conference with the warning that every sprayman must be on the lookout for any mistakes, since the threat of more and more restrictive legislation on the use of pesticides is very real.

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BUCKHORN PLANTAIN
(*Plantago lanceolata*)

BROADLEAF PLANTAIN
(*Plantago major*)



Plantains are perennials, reproducing mainly by seed, but also by new shoots from the fibrous roots of some species. They are found on rich soils of lawns and meadows, although they will tolerate drier conditions of roadsides and waste areas. Except for Rugel plantain, which is native to North America, these weeds were introduced from Asia and are now widespread throughout North America. They are uniquely characterized by a basal rosette of longitudinally veined leaves and erect leafless stems bearing many tiny green flowers.

Broadleaf plantain, *Plantago major*, has a long slender spike atop the stem. Leaves are slightly hairy, almost oval, and are borne on long petioles (leaf stalks). Both leaves and stalks are dull green in color. Each tiny flower will bear 6 to 20 seeds, which are about 1/16 inch long, variable in shape, angular on one side, and with ridges radiating from a central scar. Seeds are shed from a capsule which opens by a lid.

Buckhorn plantain, *P. lanceolata*, also has a long stem but it terminates in a short, almost cylindrical spike of flowers. Leaves are elongate and slender (lanceolate) and only slightly hairy. Flower parts have dry margins which give the spike a light brown appearance. The filaments which bear the stamens (male portion containing pollen) are very long and can be seen persisting on the spike. Each flower capsule bears two glossy brown, boat-shaped seeds, about 1/16 inch long.

A third species, Rugel plantain, *P. rugelli*, is similar to broadleaf plantain except that Rugel is less hairy, more stout, with wavy indentations on the shiny green leaves, and has a purplish petiole.

2,4-D applied in spring or fall will eliminate any of the plantains. Repeated spot treatments may be necessary. Dichondra, St. Augustine grass, and clover may be injured by this treatment.

Prepared in cooperation with Crops Research Division, Agricultural Research Service, United States Department of Agriculture, Beltsville, Maryland.

(DRAWINGS FROM NORTH CENTRAL REGIONAL PUBLICATION NO. 36, USDA EXTENSION SERVICE)

Japanese Beetle Shows Changes

Japanese beetles in Connecticut are moving from good turf to rough turf, entomologist Raimon L. Beard reports. "There has been a sharp decline in the number of Japanese beetles in lawns and gardens, but more and more grubs are found in rough turf," Beard writes in the January issue of "Frontiers of Plant Science," publication of the Connecticut Agricultural Experiment Station.

Greater grub survival in rough grass areas probably results from natural selection, Beard suggests, whereby only individuals able to adapt to new surroundings survive to reproduce. "Japanese beetles have an amazing ability to adapt to changing environment," Beard notes.

Copies of "Frontiers of Plant Science," which include Beard's article, are available by writing Publications, Box 1106, New Haven 4, Conn.

Ortho Expands Research Units

New research facilities, including a biological laboratory, are being constructed at Tank Farm Hill, Richmond, Calif., for Ortho Division, California Chemical Co.

Planned complex of buildings is part of an expansion program begun during 1962 by Ortho Research & Development, and will supplement the central research facilities at Richmond headquarters, the firm reveals.

Ortho's new biological research lab will be 50' by 150', with two wings, one devoted to plant science and the other to entomology. To the rear of the main lab will be a 1,000 sq. ft. spray and incubator building and a 20' by 40' greenhouse, one of 6 greenhouses scheduled for completion at a later date.

Weed Society Sets 1964 Meet

Fifth Annual Conference of the Weed Society of America will be held at the Pick-Congress Hotel, Chicago, Ill., February 10-13, 1964, the public relations committee of that organization has confirmed.

More than 1,000 applicators, researchers, and education workers, representing colleges, chemical companies, weed control firms, public health and regulatory agencies, and others are expected to attend.



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Trimmings

No quips about this equipment! Anyone who knows J. Edwin Sameth of Western Soil Management in Newark, N.J., will also know what pride this firm takes in its fleet of gleaming, completely outfitted spray trucks. But, Ed writes us, sometimes it takes an unusual event to point this out. Not too long ago, while one of Ed's servicemen was engaged in treating a large refinery in Philadelphia, some pranksters sneaked up on the parked truck and put sugar in the gas tank, which put the spray rig temporarily out of commission. Undaunted, the company quickly rented a truck, mounted some portable sprayers, and completed the job. Unfortunately, a local supplier saw the rented vehicle and made some disparaging remarks about Western's trucks. And, as such things go, the comments filtered back to Western executives, who lost no time in tracing down the individual who had judged Western on this one piece of rented equipment. There followed an exchange of correspondence, in which, Ed tells us, the true picture of Western was pointed out to the supplier. "After all," Ed writes, "any one piece of our equipment represents an outlay of \$10,000 plus; and you can be sure we do our utmost to show these machines off to best advantage!" We hope (and believe) that this commendable pride in one's appearance and reputation is typical of contract applicators, and congratulate Ed on taking the time to right a wrong impression.

* * *

Westward Ho! Back in February, when the grip of winter still strangled the Midwest, we wrote about our talk with U.S. Borax's D. W. Rake of Anaheim, Calif., and envied him his sunny clime. We also said we'd gladly journey west if the Boss gave us his "bon voyage." Shades of Horace Greeley, but we found ourselves, in the heart of bitterly cold February, attending the 34th International Turf-Grass Conference and Show in San Diego! It was a welcome chance to meet and talk with turf people from all over the country, and who's going to deny that even a meeting of the Peanut Brittle Manufacturers of America would have given enough cause to forsake the slush and icy winds of the winter of '63!

* * *

Genial Gene: Speaking of the Turf-Grass Conference, we also want to commend genial Gene Nutter, Executive Director of the Golf Course Superintendents Association of America, which sponsors the event, called "the greatest show on turf." Dr. Nutter and his staff, we're pleased to say, gave *Weeds and Turf* representatives a most gracious welcome, and enabled us to report in detail on the educational aspects of the event. (See page W-18). Dr. Nutter, who's headquartered in Jacksonville Beach, Fla., had a smiling visage for all.

* * *

Londonery heirs? It's good to know that our own state of Ohio is contributing to the improvement of turf technology. We have just learned, in a bulletin from the Florida Turf-Grass Association, that Dr. Everet Burt, who was born in Londonderry, Ohio, is the new Turf Technologist at the USDA Plantation Experimental Lab. Dr. Burt got his Ph. D. from Ohio State in 1954, was associated with the University of Florida, then with O.M. Scott, before taking the Plantation Lab position. To a fellow Buckeye, we send hearty congratulations.

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