100 Delegates to 2nd Annual Hyacinth Control Society Meet Find Emphasis Shifting from Mechanical to Chemical Methods

Late in the 19th Century, the story goes, a Florida citizen attending a New Orleans Cotton Exposition was so taken with the beautiful water hyacinth on display there that he carried a specimen back to plant in a lawn fountain on his St. Johns River estate.

Today the water hyacinth is a curse to navigation in Florida and throughout the South, and accounts for millions of dollars spent to control the hardy, prolific and now rampant plant.

This hyacinth dilemma is the chief reason for forming the Hyacinth Control Society, which held its second annual meeting July 8-11 at the Governors Club Hotel in Fort Lauderdale, Fla. Nearly 100 delegates from eight states attended the comprehensive seminar, made up of scientists, manufacturers, and applicators with a common goal: the elimination or control of the water hyacinth.

Two generations of accomplished scientists found the Hyacinth Control meet a social as well as practical occasion. Distinguished USDA medical entomologist (now retired) Dr. Fred Bishopp and his wife (left) found time to chat with Dr. and Mrs. Lyle Weldon. Dr. Weldon is with USDA's aquatic weed laboratory in Ft. Lauderdale.

Other aquatic weeds were also discussed at the four-day meeting which attracted America's foremost authorities on the noxious hyacinth. Mechanical and chemical control methods were examined, new herbicides were described, and refresher information on identification and habits was offered the dedicated conclave.

One highlight of the Fort Lauderdale meeting was an address by William E. Wunderlich, Chief of the Aquatic Growth Section, U. S. Army Corps of Engineers, New Orleans, La. Wunderlich described methods used in the bayou state for hyacinth control, and showed slides of various machines specially developed for controlling the weed.

An important facet of mechanical control is the bruising of rhizomes, which causes hyacinths to die. But mechanical control is expensive and time-consuming, so the chief emphasis is now on chemical control methods.

"We must kill the hyacinth at its source," Wunderlich said. He described various chemicals (including sodium arsenite) which have been used for this purpose, and said his district now uses the amine salt of 2,4-D applied with a Bean power sprayer. The Louisiana program has been highly successful, Wunderlich said.

Another Corps of Engineers expert, Charles D. Zieger of Jacksonville, presented a history of water hyacinths and detailed efforts at control in the important St. Johns River.

Similar to the Louisiana tactics, Zieger's use of 2,4-D has also met with success.

Uses Bean Pump

"The most efficient spray pump being used by the Corps is the high pressure John Bean Royalette 10GPM Pump," the engineer indicated. "This is operated at 300 psi with a John Bean quick-acting trigger valve spray gun with adjustable barrel using a number 10 tip."

Since chief interest centers around chemical control, convention planners scheduled a thorough lineup of technical men from major manufacturers of aquatic herbicides. These men outlined characteristics of their various products, and answered questions concerning them.

Shell's Aqualin Described

One such chemical which has apparently been used quite successfully is Aqualin, a product of the Shell Chemical Company. Delegates got a rundown on this chemical from John Hussey, sales manager of Southern Mill Creek Products Company, Tampa, which distributes and applies the Shell herbicide.

"Basically," Hussey said, "there are two methods of applying Aqualin herbicide: one, in flowing water, in which Aqualin is added to water at one or more points and is

carried through the canal by the current, and two, in static water, where distribution is effected by moving spray equipment."

Aqualin is used for control of submersed weeds, and has been applied by Hussey's crew in two ways, by moving equipment in a truck along the river bank, or by moving machinery in a boat.

In October, 1960, Southern Mill Creek applied Aqualin on a commercial basis to a number of large canals in Ft. Lauderdale, Hussey revealed. These canals were heavily infested with elodea, contained brackish water, and were also affected by tidal movement.

Hussey said the treatment was highly successful, and that the canals today are still free of weeds.

Another aquatic herbicide gaining in usage is Diquat, a product of the Ortho Division, California Chemical Co. A. C. White, Ortho Field Technical Specialist from Orlando, was on hand to explain Diquat's formula and mode of action.

Rapid results, non-volatile formulation, and reduced selectivity are among Diquat's strong points, White reported. Because of the reduced selectivity, Diquat is valuable for controlling mixed weed populations, and reinfestation problems are minimized.

Highly selective herbicides kill one weed, only to let another take over, White elaborated.

As a weapon against submerged weeds, Diquat has several advantages too, the Ortho specialist commented. Ease of handling, low toxicity to fish, and longer control periods make the herbicide ideal for underwater growth.

Diquat, Photosynthesis Tied

Delegates were interested to learn of Diquat's unusual action. Herbicidal activity takes place only during periods of photosynthesis, so light is a necessary factor when using Diquat.

Other reported uses for the chemical include killing of above ground weed growth around gardens, buildings, fence lines, parkways, etc.

Amchem's Amitrol-T Researched

Three years of exacting research are behind Amitrol-T, aquatic herbicide from Amchem Products, Ambler, Pa., Amchem representative John Gallagher explained. Gallagher spoke on Tuesday's program.

Amitrol-T was studied by Dr. D. E. Seaman, formerly of the U.S. Department of Agriculture's Aquatic Weed Research Laboratory in Fort Lauderdale. Four different formulations of 2,4-D, and formulations of emid, fenac, and amitrol were evaluated at several application rates for control of water hyacinth in a three-replicate experiment.

The amitrol formulation was more effective than any other material at equivalent rates, and yielded nearly complete control at 2 lbs./acre.

Fragile, pale, beautiful — here is the water hyacinth in bloom. This innocent looking plant now chokes hundreds of miles of southern waterways, is a scourge to navigation, and provides breeding spots for mosquitoes. Members of the Hyacinth Control Society are dedicated to the control of this flowering, prolific weed.

"The slow acting but remarkable control of water hyacinth by the amitrol formulation was especially interesting," Gallagher said, "because this herbicide might be used where 2,4-D compounds are hazardous to crops or ornamentals."

Although maximum effects of Amitrol-T take about four weeks longer to develop than those of 2,4-D, regrowth and consequent loss of control are less in plots treated with amitrol than in those treated with 2,4-D, Gallagher continued.

This effective supression of regrowth is probably due to Amitrol-T's superior translocation through stolons from parent to offshoot plants.

Two new herbicides from the Pennsalt Chemical Company, Hydrothol and Herbicide 191, were scrutinized in a paper prepared by J. L. Frizzell, Pennsalt Southeastern Technical Supervisor from Montgomery, Ala.

Both compounds are derivitives of Endothal, which Pennsalt produces.

Frizzell said the two chemicals are available either as a water soluble liquid concentrate or as granules, and are effective for control of elodea, milfoil, chara,

Field trip to the USDA Aquatic Weed Research Laboratory in Ft. Lauderdale gave delegates first-hand insights into weed identification and investigation techniques. Tour hosts were Drs. Lyle Weldon and R. W. Blackburn, laboratory staffers.

New Hyacinth Helmsmen — these seven men were elected to guide the Hyacinth Control Society through the coming year, which promises to be one of rapid growth for the two-year old organization. Seated left to right are Herbert Friedman, secretary-treasurer; William Dryden, president and editor; and Wayne Miller, vice president and immediate past president. Standing left to right are directors Dan Gorman, A. S. Chipley, Jack Salmela, and Mel Williams.

etc. in irrigation and drainage canals, lakes, and ponds.

In 1961 experiments, Hydrothal at 3 and 5 ppm in small farm canals gave 100% control of southern Naiad, Frizzell claimed.

Pennsalt's Hydrothal Called Safe

Extensive toxicity studies have shown Hydrothal to be a safe chemical when used as directed, and effect on fish seems to be negligible. Studies of the degradation of herbicide residues indicate Hydrothal persists for only a short time.

Other uses for Hydrothal, Frizzell suggested, include algae control for ponds and lakes. Tests in 1960 and 1961 showed control of cadophora and pithophora with dosages of 0.25 to 0.5 ppm acid equivalent applied both as a liquid and a granular.

L. L. Coulter from The Dow Chemical Company, Midland, Mich. filled delegates in on Dow's aquatic herbicide, Kurosal.

Kurosal Is Granular and Liquid

Available both as a granular (Kurosal G) and as a liquid (Kurosal SL), this herbicide was described as effective against a variety of aquatic weeds including water milfoil, elodea, and water hyacinth.

Kurosal should be applied early during the growing season, Coulter told the group, when weeds are actively growing but have not yet formed dense floating mats.

Applications during late summer are not as effective because of extensive weed growth.

Recommended rate for Kurosal SL is 1 gallon per acre-foot of water. (An acre-foot is one surface acre in area and one foot deep.) This liquid formulation is applied directly to the water's surface, undiluted. The granular product can be applied by hand, or with a spreader similar to the Cyclone Seeder.

Both formulations should be used in quiet water.

Advantages of Diamond's Dacamine

In Wednesday's windup sessions, delegates' knowledge of current herbicides was rounded out by a discussion of Diamond Alkali's Dacamine, an oil-soluble, water-emulsifiable amine salt of 2,4-D and 2,4,5-T.

Diamond's Tom O. Evrard, Southeastern Technical Representative from Hampton, Ga., said Dacamine has several advantages in weed and brush control.

First, the compound acts somewhat like an ester, which is more effective than salts, but has the nonvolatile features of regular amines. Combining effectiveness of esters with safety of amines was the chief reason for development of Dacamine.

Dacamine can also be used later in the growing season than other amine salts because 5 or 10 gallons of oil can be added to the spray solution, Evrard said. This is important in brush control.

In cold weather, Dacamine does not salt out like regular water-soluble amines, but becomes more viscous, like esters.

Finally, indications are that Dacamine will control certain weeds which have become resistant to 2,4-D and 2,4,5-T.

Evrard said most data on Dacamine is still "observational," and the company would therefore be willing to work with any applicators to obtain more field trial results.

Analysis of new and current herbicides was a significant part of the Hyacinth Control' Society's annual meeting, but other aspects of the aquatic weed problem were thoroughly examined.

Group Tours USDA Lab

One highlight was an afternoon tour to the U. S. Department of Agriculture's Aquatic Weed Research Laboratory in Ft. Lauderdale, escorted by USDA staffers L. W. Weldon and R. W. Blackburn. These scientists also presented delegates a valuable illustrated session on weed identification.

Proceedings of the three-day meeting which combined technical and practical information are available to nonmembers at $5.00 each, and can be ordered for shipment in about six weeks.

Included are copies of all talks given, along with dozens of identification photos. Send check with orders to William Dryden, Lee County Hyacinth Control Commission, P. O. Box 1711, Fort Myers, Fla. Dryden serves as editor for the society, and was also elected president during the annual business meeting.

Other officers elected at Ft. Lauderdale include Wayne Miller, vice president. Miller is immediate past president of the organization, and is director of the Lee County

Hyacinth Control Commission, of which Dryden is commissioner.

Secretary-treasurer for the coming year is Herbert Friedman, president of Southern Mill Creek Products Co., Inc., Tampa. This is Friedman's second term in the post.

Directors installed were A. S. Chipley, Lee County Hyacinth Control Commission; Jack Salmela, Brevard County Mosquito Control Director; Dan Gorman, Hillsboro County Mosquito Control Director; and Mel Williams, Sarasota County Mosquito Control Director.

Friedman told *Weeds and Turf* that next year's meeting will probably be held in Tampa, but exact time and place will be announced later.

Chlorea Herbicides

(*from page W-5*)

signed to apply granular materials. Usual rates of application are 1 to 2 pounds per 100 square feet. One-half pound per 100 square feet is frequently all that is required for annual follow-up treatments.

Safety to Man and Animals

The individual chemicals in Chlorea products are generally regarded as having rather low toxicities to man and animals. It may be fairly concluded, therefore, that the Chlorea herbicides can be considered generally nonhazardous to mammals under normal conditions of use. It is, nevertheless, advisable not to leave containers or chemicals where children or animals may have access to them.

Precautions

Avoid applications in periods of hot, dry weather, because killing action of Chlorea herbicides is generally through the roots and is dependent on soil moisture. The Chlorea sprays, however, will burn off the tops of weeds at any time and will be effective on the roots as soon as rain falls. Be careful not to apply on or near valuable trees, shrubs or other ornamentals, or to areas into which these roots may extend. Also, do not use on slopes where runoff will move the chemical into the root zone of turf or desirable plants and trees. Remember that all three products should be used only where unproductive soil is not an objection.

Book Review

Diseases of Turfgrasses

by Dr. Houston B. Couch, Rheinhold Book Division, New York, N. Y., 1962, 304 pps. $10.00.

Extensive appendices and thorough classification tables are among the best features of this new textbook designed to help CAs, and turfmen in general, with the complex problems of disease control.

Nearly 100 pages are given over to analysis of turfgrass disease chemicals, and grasses susceptible to ailments. Arranged both by common and technical names, these tables provide a handy guide which could be used by technical directors and servicemen alike.

Couch's new text is more than a handbook, however. In the first 178 pages, the distinguished author delves insistently into the rudiments of both fungus and nematode-incited diseases, and gives valuable pointers on how to tell one disease from another.

A section on the fundamentals of disease control is a welcome facet of author Couch's comprehensive reference work. This indispensible background material is designed to aid the newcomer to turfgrass disease control, and at the same time is a convenient reminder for the experienced professional.

Another highlight of the volume are the illustrations, both full color and black-and-white, which give vivid reinforcement to the details set forth in the text.

Couch, who is an associate professor of plant pathology at Pennsylvania State University, has given the contract turf spraying field a valuable tool in his new book. While not an inexpensive publication, serious students of the field will find this reference an important buildingblock to further understanding of turfgrass diseases and how to control them.

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300 Expected at Midwest Turf Day

Nearly 300 delegates are expected to attend this year's annual Midwest Turf Field Days scheduled for September 10 and 11 on the campus of Purdue University, Lafayette, Ind.

Made up of applicators, supplier staff technicians, government and university researchers and others, the group will spend most of the day in outside examination of Purdue research work.

More information is available from Dr. William Daniel, group secretary, at Purdue.

Literature *you'll want . . .*

Here are the latest government, university and industrial publications of interest to contract applicators. Some can be obtained free of charge, while others are nominally priced. When ordering, include title and catalog number, if any. Sources follow booklet titles.

Sprayers for Weed Control Chemicals. Agronomy Dept. Mimeo No. 60. 4 pp. University of Maryland Extension Service, College Park.

Aquatic Weed Control. Circular 219. 16 pp. il. 1962. Agricultural Extension Service, University of Florida, Gainesville.

Weed Control in Western Irrigation and Drainage Systems. Agricultural Research Service and Bureau of Reclamation Joint Report No. 34-14. 24 p. 1960. U.S. Department of Agriculture, Washington 25, D. C.

Lawn Diseases in the Midwest. North Central Regional Extension Publication No. 12. 16 p. il. 1961. University of Nebraska Extension Service, Lincoln.

Use of Low Volume Sprayers for Applying Atrazine 80W and Simazine 80W. Bulletin GAC 630. folder. il. Geigy Agricultural Chemicals, P. O. Box 430, Yonkers, N.Y.

Weeding with Chemicals: 1962 Guide. Bulletin ID-1. 20 pp. Purdue University Agricultural Extension Service, Lafayette, Ind.

Potassium Cyanate Controls Crabgrass and Chickweed. Bulletin F-255. 8 pp. il. American Cyanamid Company, Agricultural Division, Princeton, N.J.

Johnson Grass Control. Agronomy Dept. Mimeo No. 16. 2 pp. University of Maryland Extension Service, College Park.

Poison Ivy, Oak, and Sumac: Identification and Control. Ext. Folder No. 144. 6 pp. il. North Carolina Agricultural Extension Service, Raleigh.

What the Experts Say about Crabgrass Control. 24 p. il. Agricultural Chemicals Div., Diamond Alkali Co., 400 Union Commerce Bldg., Cleveland, O.

Turfgrass Diseases. Circular 207-A. 1960. 16 pp. Colorado State University Extension Service, Ft. Collins.

Control of Cattails in Ponds. Leaflet 229. 4 p. University of Kentucky Extension Service, Lexington.