"One goal for the 70s must be to communicate the importance, safety and potential of herbicides."

> —Outgoing President Dr. Homer LeBaron



NE Weed Scientists Told to Broadcast Good Side

R ESPONSIBLE weed scientists can no longer afford to remain silent when some of the "popular ecologists and evironmental opportunists" issue "exaggerated or politically motivated claims" about pesticides.

Homer LeBaron of Geigy Agricultural Chemicals Corporation issued this warning and challenge as he opened the 24th annual meeting of the Northeastern Weed Control Conference, Jan. 7-9 in New York City.

Considering how the decisions were made banning the uses of DDT and cyclamates, "politics and emotion, rather than scientific evaluation of data, could control the destiny of a pesticide," he told some 600 weed scientists.

In the more recent attack on 2,4,5-T, he continued, it is impossible to tell which attackers are concerned with environmental quality and which are against the Vietnam war.

Elimination of environmental pollution is one of the announced major commitments of the government for the next decade, LeBaron reminded.

"Most of us in weed science have been motivated by the potential in this field to benefit mankind, to alleviate hunger, to improve the environment. One of our great challenges for the 1970s will be to use herbicides more in the prevention or reduction of environmental pollution, in environmental beautification, and in conservation of crops, land, labor, and natural resources.

"We are entitled to be proud of our accomplishments."

Recent developments indicate, however, that a credibility gap has opened and that our activities are grossly misunderstood by the general public, LeBaron said.

We have always been aware of the hazards from the misuse of chemicals, he continued. "We have always been in favor of proper balance of the three Rs, 'Research, Reason and Regulations.'

"It is clear that we will be more preoccupied in the next decade with four Ps: Pesticides, Pollution, Politics and Public Relations.

"One of our major goals for the 70s must be to more effectively communicate the importance, safety, and potential of herbicides to mankind."

Delaney Clause Ought to Go

LeBaron, the outgoing president of the northeastern group, called for an end of the "Delaney clause" in government pesticide regulations, which, he said, had become as impossible to live with as the "no residue" tolerance clause just recently changed.

The Delaney clause states that no food additive shall be deemed safe if it is found to induce cancer when ingested by man or animal.

A more workable safeguard is needed, said LeBaron, because "so many relatively safe compounds can

"We need a pulling together of all weed scientists to present a unified approach concerning pesticides."

> -Incoming President Dr. John Ahrens



f Herbicide Story



. Above and below, a few of the more than 600 persons attending the Northeastern Weed Science Society meeting.

cause cancer, genetic or other effects, when injected at very high rates in completely artificial conditions of exposure."

Herbicide 'Breakthrough'

Among the 90 research papers delivered before the conference, one from Cornell University is especially timely in the wake of the emotional attachment of pesticides to pollu.ion.

Findings of researchers Robert D. Sweet and Mark R. Lynch are hailed as a breakthrough in harnessing what scientists call "synergistic response" from chemical combinations.

Sweet and Lynch have found that the effect of certain combinations of weed killers becomes 10 to 20 times greater than when such chemicals are applied individually, yet the required dosage in the mixture is many times smaller.

Sweet's formula consists of four ounces of atrazine and one or two ounces of another chemical in a gallon of fruit spray oil. The combination worked on a wide range of weed pests in corn.

Chemicals successfully tested in such combinations included Lasso, diphenamid, nitralin, 2,4-D, trifluralin and some new herbicides yet to be approved for commercial use.

"Results are almost unbelievably good," Sweet said. "What's really sensational is that these combinations greatly reduce the amount of chemicals required and yet they wield far greater weed-killing power.

"The finding is a nice answer to the danger of soil pollution and chemical residues resulting from heavy uses of herbicides."

Sweet and Lynch are credited as the first researchers to succeed in triggering "synergistic response."

Name Changed

Conference delegates approved a name change for their organization. It's now called the Northeastern Weed Science Society.

Outgoing president LeBaron said the board felt the new name was in keeping with objectives but was more appropriate in signifying what the organization does.

Charles W. Middleton of Asplundh Tree Expert Company, membership chairman, reported that fees had exceeded the \$3,000-mark for the first time.

New Officers

Delegates elected Dr. John F. Ahrens of the Connecticut Agricultural Experiment Station, Windsor, as president. Dr. George Bayer of Agway, Inc., Syracuse, N. Y., was elected vice-president; Dr. Arthur Bing, Cornell Ornamentals Research Laboratory, Farmingdale, N. Y., secretary-treasurer; and Dr. H. P. Wilson, Virginia Truck Experiment State, Painter, as secretary-treasurer-elect.

Dr. Ahrens pledged continued em-

phasis on publication of weed science information, and renewed emphasis on public relations. He called for a "pulling together" of all weed scientists to present a unified approach to deal with the pesticide controversy." He urged membership in the Weed Science Society of America.

Dr. Ahrens announced these committee chairmen for the coming year:



Dr. T. R. Flanagan, University of Vermont; Research Coordinating, Dr. Joseph Cialone, Rutgers University; Sustaining Membership, Dr. R. Hansen, Hercules, Inc., Wilmington, Del. Public Relations, Dr. R. W. Feeny, American Cyanamid Co., Princeton, N. J.; Awards, Dr. Homer LeBaron, Geigy Agricultural Chemicals Corporation, Ardsley, N. Y.; Education, Dr. W. A. Genter, Agricultural Research Service, USDA, Beltsville, Md.; Weed Science Society of America representative, Dr. C. T. Dickerson, Jr., Monsanto, Allentown, Pa.

Dr. William B. Duke of Cornell University received the award for the outstanding paper of the conference. It covered his research on the control of quackgrass in established alfalfa.

Capsule Conclusions

A heavy portion of the papers presented were directed toward the agricultural field, but about two dozen were related to the non-crop vegetation industry.

Following are some capsule conclusions:

--Under mulch, dichlobenil at 2 lbs./acre showed the most promise for perennial weed control in highway plantings of trees and shrubs. Dr. Arthur Bing, Cornell University. --A three-year study showed that total vegetation control results for one season were good to excellent with these combinations: atrazineamitrole-fenac; bromacil-amitrolefenac; borate-chlorate. Single herbicide treatments giving good kill included Nia 11092, bromacil and AP 920. Rate was critical in determining the degree of control, specie selectivity and percent bare ground. Doubling the base rate greatly increased control during the first season, but affected residual control to a far lesser extent. Dr. George Bayer, Agway, Inc., Syracuse, N. Y.

Utility Rights-of-Way

—Use of picloram plus 2,4,5-T applied as a basal or dormant stem spray offers a method of adequately controlling most brush species found on utility rights-of-way. Particularly noteworthy is the virtually complete control obtained with 1 lb. picloram plus 4 lbs. of 2,4,5-T aehg on the principal species which tend to resprout after treatment (aspen, locust, maple, oak, sassafras, sumac). C. S. Williams, B. C. Byrd, W. G. Wright, Dow Chemical Company, Midland, Mich.

—Five years of field data indicate the new herbicial compound, m-(3,3-dimethylureido) phenyl tertbutylcarbamate (NIA 11092, is (1) herbicidally active; (2) non-selective in crops and (3) persistent in its control. NIA is worthy of development and use as a soil sterilant. Edward E. Hagood, Niagara Chemical Division, FMC Corporation, Middleport, N. Y.

-Paraquat was found to be most successful in controlling early weed competition to establishing crown vetch, while damaging crown vetch the least of chemicals tested. D. L. Linscott, Cornell University.

—Use of aerial photography with black and white and color infrared



Leadership for the coming year includes, from the left: Dr. Homer LeBaron of Geigy Agricultural Chemicals Corp., past president and chairman of the awards committee; Dr. C. T. Dickerson, Jr., of Monsanto Co., representative to the Weed Science Society of America; Dr. George H. Bayer of Agway, Inc., vice-president; Dr. John F. Ahrens of Connecticut Agricultural Experiment Station, president; Dr. R. Hansen of Hercules, Inc., chairman of the sustaining membership committee; Dr. R. W. Feeny of American Cyanamid Co., chairman of public relations; Dr. Joseph Cialone of Rutgers University, chairman of the research coordinating committee; and Dr. Arthur Bing of Cornell Ornamentals Research Laboratory, secretary-treasurer. Not present for the picture were Dr. H. P. Wilson of Virginia Truck Experiment Station, secretary-treasurer elect; Dr. T. R. Flanagan of the University of Vermont, program chairman; and Dr. W. A. Genter of USDA's Agricultural Research Service, education chairman.



Further individual discussion of papers presented was frequent. John Reingold, left, listens to additional comments from Mike Watson of Potomac Edison Company concerning the use of a knapsack mistblower for chemical brush control along utility rights-of-way.

film is valuable in taking the guesswork out of evaluating the effectiveness of chemical spraying along utility rights-of-way. J. Baribeau and J. Rivest, Hydro-Quebec, Montreal, Canada.

-Bromacil, NIA 11092, atrazine, prometone and Geigy 14254 were found to be more effective on heavier soil whereas diuron and Daxtron were more effective on a lighter soil. On a medium loam soil, mixtures of herbicides generally had control ratings between the ratings of the two component herbicides used singly. Exceptions were mixtures containing picloram which tended to have lower control ratings than either of the two components. The value of some mixtures of herbicides may be their effectiveness in the control of a broader spectrum of weeds and grasses over a wider range of soil types and growing conditions. W. R. Effer, Ontario Hydro Research Division, Toronto, Canada.

Aquatic Weed Control

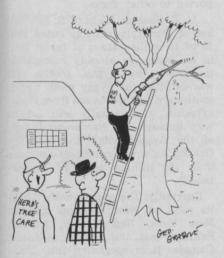
—Submersed application of diquat dibromide at 4 lbs. cation per acre was found to be effective in controlling *Potamogeton robbinsii* in Greenwood Lake in New Jersey. The submersed application technique appeared useful in applying liquid herbicides in deep water. The lake depth was a maximum of 35 feet and averaged 7 feet. Submersed nozzles released the treatment at an average of 18 to 24 inches from the lake bottom. C. E. Gilbert and J. M. Cortell, Allied Biological Control Corp., Chester, N. J.

—Safe and successful algae control and maintenance program involves a total approach, considering these factors: Water temperature and lake depths; amounts of dissolved oxygen; nutrient levels; light penetration, true and apparent color; algae to be controlled and the possibility of endotoxins. C. L. Noyes and J. M. Cortell, Allied Biological Control Corp.

Weeds in Turf

—The experimental herbicide RP 17623 (2-tert. butyl-4-(2, 4-cichloro-5-isopropyloxyopenyl)-5-oxo-1,3,4oxadiazoline) has inherent ability to give major reductions in crabgrass and knotweed from tests in Merion Kentucky bluegrass turf. R. E. Engel and R. D. Ilnicki, Rutgers University.

-Effective crabgrass control with only slight turfgrass injury was obtained from standard materials. such as bandane, benefin, bensulide, DCPA, nitralin, siduron and terbutol. Some thinning of fescue was noted from DCPA. New materials that appear promising and/or deserve further study are CP-53619, D-292, NC-5651, M-3251 and RP-17623. Half rates of bandane, bensulide, DCPA, nitralin and siduron in the second year after previous spring treatment produced good to excellent crabgrass control. Siduron alone or combinations of DSMA with either bensulide, DCPA or siduron produced good to excellent control of crabgrass when treated in the 1-2 leaf stage. When plants were in the 4-5 leaf stage, siduron produced good control and the combination of DSMA plus siduron produced excellent control. John A. Jagschitz, Ag Experiment Station, Kingston, R. I. -Bensulide, lead arsenate and tri-calcium arsenate treatments for several years in putting-green turf resulted in good control of annual bluegrass (Poa annua). Use of ethrel, MH or MF-415 and 416 appeared promising for preventing seed production of Poa annua. John A. Jagschitz.



"Dingwall, there, likes everyone to know he caught a sawfish when he went deep-sea fishing."

A Siberian Fish . .

A fish from the icy waters of the Amur River in Siberia may provide a partial solution to Florida's problems with water hyacinths and other waterweeds.

The white amur feeds entirely on aquatic vegetation, and scientists at the Plantation Field Laboratory in Fort Lauderdale (an agricultural experiment station of the University of Florida) are hoping this fish will prove practical as a biological control of Florida's waterweeds.

"Of all the biological control agents we have considered," said Robert D. Blackburn, U. S. Department of Agriculture botanist directing the aquatic weed research, "the white amur is the most promising."

The white amur can tolerate an extremely wide range of climatic conditions. It has been used to control aquatic plants in Russia, Czechoslovakia, Poland and India.

"Research seems to indicate the white amur will not spawn in our waters unless artificially injected with hormones," Blackburn said. This would be an advantage for keeping the white amur in check, since the fish grows from $3\frac{1}{2}$ to 5 pounds a year and can reach weights from 50 to 60 pounds.

The Plantation Field Laboratory has acquired 300 white amurs for testing. "We will try them on different plants," Blackburn said, "and stock other fishes with them. We have to be cautious that there's no adverse effect on sport fishing or on the overall aquatic environment from the white amur."

Blackburn pointed out that the white amur is a welcome source of food in some parts of the world. "It tastes a lot like catfish," he said. The white amur will strike artificial lures, so it is a possibility for sport fishing.

Besides the white amur, other possible biological controls are being evaluated at the Plantation Field Lab. Among them are two types of South American snail, the alligatorwood flea beetle.

A Latin Beetle . .

Weed-eating insects that do not attack useful plants have considerably greater potential for use in biological control programs than has been generally recognized, a U. S. Department of Agriculture scientist says.

Dr. Lloyd A. Andres, an entomologist of USDA's Agricultural Research Service, spoke on the use of weed-eating insects at the annual meeting of the American Association for the Advancement of Science, Boston.

"If one considers that almost half of the 540 major weed species in the United States are introduced plants, and that 13 out of the 15 top weed species originated in other countries, the use of their natural insect enemies obtained from abroad—will continue to offer a fertile approach to biological weed control," Dr. Andres said. "In the United States, the losses caused by alien and native weeds are believed to equal the combined losses from insects and diseases."

Dr. Andres cited examples of successful results with about a dozen species of weed-eating insects that were brought to the United States for release after scientists had determined that the insects would not harm crops or ornamental plantings. The most spectacular success achieved to date was control of the Klamath weed in California. More recently, highly promising results have been achieved in weed-choked Florida waterways by Dr. Andres' associates who, in 1964, released 250 Agasicles beetles that they found in South America.

"Within a year, hundreds of thousands of the beetles developed, and the release site became essentially free of alligatorwood."

The rapid buildup of the beetles permitted collection and distribution of the insects for subsequent release in eight other states. Insects that eat weeds infesting dry rangelands also have been released in western states, Dr. Andres said.