

"Record Attendance at 16th Southern Conference Proves Industry Growth," Holstun Tells Weedmen Gathered in Mobile, Jan. 16-18

"This all-time attendance record is an excellent example of the remarkable growth of the weed control industry," Dr. J. T. Holstun, president of the Southern Weed Conference, enthused at the group's 16th annual conference.

A precedent-setting 600 delegates flocked to the Admiral Semmes Hotel in Mobile, Ala., for the three-day convention, Jan. 16-18. Speakers from 26 states presented some 115 papers, covering research and developments in all phases of weed control. All sections of the nation and the industry were represented; Hawaii was the most distant state from which applicators traveled.

H. E. Rea, associate professor at the A & M College of Texas, College Station, reported Banval D experiments on various broadleaf species, tested in the fall of 1961 and spring of 1962.

Analyzing results on a dense stand of second growth curly dock, treated at 3, 6, 9, and 12 lb., in 150 gallons of water per acre, Rea told the weedmen that top kill was complete in 10 days, except for a 2% survival following the 3 lb. treatment. Moderate resprouting and general reinfestation from seedlings occurred in less than 5 months on the 3 and 6 lb. plats. "No sprouts and only sparse seedling emergence occurred on the other plats," Rea revealed.

Noting the importance of climatic conditions, Rea told dele-

gates that when collars of trumpet creepers were drenched with 8 lbs./100 gal. water of Banval D, treatment was not effective until a rainfall, several weeks later. "When the rains came, the tops of most of the trumpet creepers died," Rea reported. "However, considerable resprouting from surviving roots occurred before the end of the season."

Top of silverleaf nightshades were killed with a semibroadcast application of 16 lb./100 gal. Banval D, and within 6 weeks soil in the treated spots was bare.

Smutgrass, Mugwort Reviewed

Smutgrass has become a serious invader of improved pastures in peninsular Florida, scientists from that state's Agricultural Experiment Station warned weedmen at the conference.

In studies made in Ona, Fla., agronomists found that dalapon, a water-soluble herbicide, will kill 85% or more of the unwelcome grass. An overall application of 5 lbs. per acre or 5 lbs. active/100 gallons of water for spot treatment were both found to be effective.

"Mugwort is a vulgar little plant that has incurred the displeasure of all of us," Dr. S. W. Bingham, Virginia Polytechnic Institute's plant pathology and physiology department member, said in introducing his subject.

Most promising controls, from tests of 25 chemicals and chemical

solutions, are Fenac and Banval D, Bingham disclosed. "Used in the early stages of growth, a single treatment of either gave very good control not only of roots, but of underground stems as well," Bingham concluded.

2,4,5-T Control Effectiveness

"Newer chemicals have come along, but 2,4,5-T is still the standard control for woody plants," John P. Sterrett, of the Virginia Polytechnic Institute department of plant pathology and physiology, affirmed.

Two most common measures are the stem broadcast method, where all stems and branches are sprayed with a special effort made to cover the root collar, and broadcast basal method, covering the lower one-third of each main stem and root collar.

"Year-round spraying is thus possible," Sterrett claims, "and reduces cost of labor and equipment, although these methods cost about the same as summer foliage applications." Spraying in areas where susceptible crops are grown is feasible because spraying can be done before most crops are planted, Sterrett advises.

Although both methods are about equally effective, the lower chemical and labor cost of the broadcast basal method tend to make it more desirable in most operations, the researcher concludes.

"Oils alone, and the same oils in water emulsion, were practically equal in effectiveness as diluents for 2,4,5-T herbicide that was aerial-sprayed," Harry M. Elwell, research agronomist with the Oklahoma agricultural experiment station, revealed to the more than 600 weed and turf specialists.

"Although there was little measurable difference between oil alone and the same oil in emulsion form, there was a trend of greater defoliation with oil only," Elwell determined, and noted that the same trend has been reported by other researchers conducting brush control tests, under somewhat different conditions, in other states.

"Other sprayer components exist



Outgoing president of the Southern Weed Control Conference, Dr. John T. Holstun, extreme right, told newly elected officers of their responsibilities. Shown (l to r) are: president-elect R. F. Richards, Geigy Chemical Co., Orlando, Fla.; vice president R. E. Frans, University of Arkansas, Fayetteville; and secretary-treasurer Henry Andrews, University of Tennessee, Knoxville.



First scholarship recipients, receiving awards from Dr. John Baker, Louisiana State University, chairman of the Conference Student Interest Committee, were (l to r): H. R. Bayless, University of Tennessee, third place winner; A. B. Rogerson, second place winner from Virginia Polytechnic Institute; and N. D. Camper, North Carolina State University student who received the \$500 first place award in the essay contest.

only that the nozzles may be operated properly," Glenn C. Klingman, North Carolina State College, Raleigh, stated forcefully in his account of an "ideal" nozzle.

Many alleged *herbicide* failures are actually *equipment* failures, Klingman believes. In describing the "ideal" nozzle, he noted that it would apply the spray:

- uniformly under usual operating conditions;

- with little or no spray drift;

- at a low gallonage per acre when uniformity of application is the only need;

- with clogging reduced to a minimum;

- at low pressures to reduce spray drift, reduce pump wear, and cost of hoses required; and

- resist both chemical and abrasive corrosion, maintaining spray pattern and rate of discharge over extended periods of operation.

"These requirements can now be met with hollow cone, 'whirljet,' or 'nonclog' nozzles," Klingman concluded, "that have spray angles varying from 50° to 130°."

Recent observations of soil treated with herbicides and stored at various controlled temperatures revealed that effectiveness of the herbicides decreased with the warmer temperatures, Florida Agricultural Experiment Station scientists reported.

Under summer field conditions, researchers disclosed that herbicides tested were inactivated in less than seven weeks. This was not the case, however, in the winter or spring when temperatures were low.

Tennessee Valley Authority spokesmen D. C. Francisco and J. R. Aldred, Chattanooga, Tenn., confirmed this theory when they advised spraymen to apply soil sterilants in April or May.

Although various formulations of 2,4-D and related hormone-type herbicides have become the most generally accepted means of killing roadside vegetation, there are many factors which limit the use of these controls. U.S. Borax's V. W. Woestemeyer, research agronomist, informed the weedmen.

Handicaps include the several species that cannot be controlled with this type of herbicide, re-sprouting of many weeds and the susceptibility of adjacent crops and ornamental plants to damage from drift or volatility, Woestemeyer explained.

"The most promising material U.S. Borax is presently investigating is a product containing 8% trichlorobenzoic acid," Woestemeyer related.

Optimum range in application rates was 275 to 400 lbs. per acre. Initial symptoms of toxicity resulting from treatments consisted of damage to the foliage or complete defoliation, Woestemeyer claims. In some cases, defoliation was followed by the emergence of new foliage exhibiting severe toxicity symptoms.

"There is no doubt that chemicals provide the most desirable right-of-way control," James F. Jones, maintenance supervisor for First Electric Cooperative Corp., Jacksonville, Ark., told conference delegates.

In comparing chemical control methods with hand clearing and bulldozing operations, all of which First Electric utilizes to maintain its 3,100 miles of electric distribution lines, Jones concluded:

"Records and statistics to date show that chemical control, where applicable, is by far the most desirable method to use from both the economical and effective standpoint. But my experience indicates

that no one method will meet all requirements. Methods should be adapted to local conditions."

"Original stump treatment in 1954 resulted in an 81% kill," R. A. Mann, from the TVA, disclosed in his discussion of stump treatment methods on rights-of-way for the Tennessee Valley Authority. "Cost then was \$57 per acre, but in the last 5 years we've treated more than 12,500 acres, with an average cost of \$65 per acre.

"So far, the lines we've treated have not needed any re-treatment for at least 3 years," Mann concluded.

"Air Blast" Sprayer Improves RR Right-of-Way Weed Control

A specially designed air blast sprayer, resembling an orchard mist blower, is being successfully used by the Illinois Central Railroad, D. H. Yazell told conference attendants.

F. E. Myers & Bro. Co. manufactured the machine for the Industrial Herbicides Corp., Memphis, Tenn. The device is powered by a fan driven at about 1,600 rpm by a 4-cylinder air-cooled engine, operating at close to 2,000 rpm.

"Initial air blast velocity is about 115 mph," Yazell pointed out, "but the force is almost completely dissipated within 80 to 90 ft."

Nozzles in front of the spray bonnet direct the mixture into the air blast at pressures up to 50 lbs. per sq. inch, Yazell disclosed. Solenoids, controlled by electrical switches, operate air-actuated valves which open and close material valves leading to the nozzles.

"Pressure is controlled by an air-motor control on the throttle, through an automatic pressure control device," Yazell revealed. Machine, installed on a regular Illinois Central brush spray car, is equipped with a speedometer, and speed is closely checked from both the engines and the spray car. Directions are relayed to the engines by radio.

"In one of our first test runs, we found that nearly all the leaves, stems, and branches in the sprayed swath were completely covered," Yazell reported. Moreover, experience confirms that the design

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and specifications of the machine handle the drift hazard, he added.

"Application represented at least a 20% reduction in the amount of concentrate needed, with evidence of equal or greater top and root kill, compared with the conventional hydraulic system," Yazell concluded.

Aquatic Weed Control Covered

Of the numerous chemicals evaluated for aquatic weed control, xylol-type aromatic solvent, one of the first recommended, continues to be widely used, Dr. F. L. Timmons, of the Crops Research Div., USDA, Laramie, Wyoming, reveals. "More than 500,000 gallons of xylol-type aromatic solvents are now used annually," Timmons notes.

Two of the most promising weed control chemicals yet are Diquat and Paraquat, A. C. White, Field Technical Specialist from Ortho Div., California Chemical Co., Orlando, Fla., told CAs interested in aquatic weed problems.

"Fast absorption into the plant, systemic movement within the plant, and necessity of sunlight to exhibit killing action are all characteristics of the two solutions," White claims.

"If applied just before dark, allowing the chemical to circulate throughout the plant before the sun brings out full killing power, $\frac{1}{3}$ less solution is needed," White affirmed. In daylight, the kill is so rapid that this movement is short-circuited by the rapid death of the tissue, he purported.

"Diquat and Paraquat, in addition to promising control of 22 different kinds of aquatic pest plants, have shown no kill of fish and no adverse effect on fish food production in treated ponds," White concluded. "These results forecast a useful future for these herbicides."

First Scholarships Awarded

College seniors from North Carolina, Virginia, and Tennessee, and a recent graduate now working at weed control in Texas, were awarded the first Southern Weed Conference scholarship awards for graduate study. Winners also received a free trip to the meeting,

Know Your Species

GROUND IVY

(*Glechoma hederaced*)



Ground ivy is a perennial, reproducing both by seed and rooting at the joints of creeping stems. It is common in shaded areas near buildings, under trees or shrubbery throughout Northern United States and Southern Canada. Ground ivy especially favors rich damp soil of lawns, gardens, and orchards, although it is generally found elsewhere. Native of Eurasia, this creeping weed flowers from April to June.

Stems are characteristically 4-sided, creeping or trailing; flowers are borne in the axils of leaves on the stems which stand erect. Leaves are bright green, opposite one another on the stem, and palmately veined (like the fingers of one's hand). Edges of the circular leaves, $\frac{1}{2}$ to $1\frac{1}{2}$ inches in diameter, are scalloped or round-toothed.

Flowers are tubular with a lip, and bluish purple. The seeds are classified as nutlets which are ovoid, granular and brown.

Ground ivy is particularly difficult to control by mechanical means because of its extensive system of stolons or creeping stems. Pulling up the visible portion of the plant by no means destroys it, but leaves many small pieces of root which persistently resprout to cause another infestation.

Ground ivy is well controlled by spraying with silvex. Sprays of 2,4-D and 2,4,5-T are less effective but repeated sprays should wipe out ground ivy.

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

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and are honorary members for 1963.

R. D. Camper, N.C. State University, received the \$500 first-prize award. Second prize of \$200 went to A. B. Rogerson, VPI in Blacksburg, Va. Other winners in the contest were H. R. Bayless, University of Tennessee, Knoxville, who received the \$50 third prize, and Randall Jones, supervisor of a weed control region in Tullia, Texas, who was awarded the \$25 fourth prize.

Elections held during the conference made R. F. Richards, Geigy Chemical Co., Orlando, Fla., president for 1963; R. E. Frans, University of Arkansas agronomy researcher in Fayetteville, was elected vice president; and the secretary-treasurer is Henry Andrews, University of Tennessee.

At the conclusion of the conference, it was announced that the 1964 meeting will be held in Jackson, Miss., with the dates and location to be named later.