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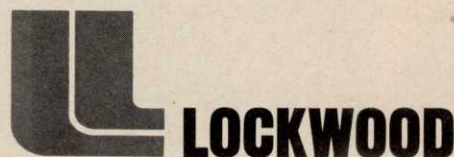
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For More Details Circle (157) on Reply Card

\$5 Billion Weed

"Weeds are the bad guys in an age-old drama in which the farmer and maintenance engineer are constantly facing the forces of nature. Weeds are a \$5 billion challenge and touch on the lives of every man, woman and child in this country . . ."

These and other statements brought a deeper realization of the role of weed science in the 20th century as more than 800 persons

met for the 26th annual meeting of the Southern Weed Science Society in New Orleans in January. In a word, the meeting could best be described as enlightening.

The Southern Weed Science Society is unique in the fact that at perhaps no other meeting do industry, university, government and press personnel work together in support of one goal. Weeds and weed science has a magnetic attraction

among these people. One exposure to a SWSS meeting and you're hooked.

This year's meeting, like those before, had more papers presented on a variety of subjects than most delegates could digest in three days. Like the cat in a room full of rocking chairs, conferees scurried from one session to another hoping time schedules were not broken so as to hear a favorite speaker or an interesting topic. Thank goodness for programs and name tags.

Keynote speaker for the meeting was Dr. Donald A. Spencer, ecologist, National Agricultural Chemical Association, Washington, D. C. Spencer, who has spent most of his career as a wildlife biologist, spoke on "The Niche Of Weed Science In The Environmental Picture." He said that "herbicides are designed to manipulate the plant cover." The change that takes place results in changes in the biosphere that affect wildlife and other plants. Recently "there has been a growing movement to resist change and return to unregulated natural processes."

But Spencer cited numerous instances in which changes take place in nature that have far disastrous effects. Without management, nature would vacillate from one untenable situation to another. Herbicides as a tool of management have helped environmental managers effectively select, eliminate and suppress undesired species from those favored.

The ecologist pointed out that from the beginning herbicides were screened to minimize adverse environmental effects. When unanticipated adverse effects of some compounds come to light, correctional measures have been rather promptly taken, he said. Herbicide manufacturers now test new candidates with full knowledge of contamination, residue build up biodegradation.

Theme for the SWSS meeting was "Weed Science—For Everyone" and in his presidential address Turney J. Hernandez challenged weed specialists to strive for professionalism both on the job and off the job. Weed scientists are battling a world weed problem. In agriculture, "chemical control adds so much more to food production over any



Outgoing president, Turney J. Hernandez (l) is presented a plaque and gavel by incoming president, Allen F. Wiese. Dates of next year's meeting are Jan. 22-24.



Graduate Contest winners in the Soil Aspects division are: (l-r) Bill Maksymowicz, University of Kentucky, honorable mention; Charles Slack, University of Kentucky, second place; Glenn Davis, University of Tennessee, first place. Charles Rieck, University of Kentucky and chairman of the SWSS student interest committee, presents \$50 award to Davis.

Challenge

other method that a nation can hardly afford to be without it," he said.

"Off the farm, weeds create other problems, as so many of us know. On highway shoulders, on railroad rights-of-way, in storage areas, in drainage ditches, on industrial sites, in vacant lots, in parking areas and along utility lines and fences, weeds are a maintenance headache, a fire menace, a flood potential, or an environmental eyesore.

"For the urban citizen, weeds may not be an obvious problem, yet millions suffer from hay fever, caused by weed pollen, or other allergies; for there are more than 700 plant species that are known to cause inconvenience, illness or even death," the SWSS president said.

Hernandez spoke about the dependence on herbicides that has taken place during the past 25 years. In industrial weed control, applicators have honed their profession to a prescription science. As those in the Green Industry know, individual programs are developed that solve the needs of the customer. All this has taken place because of high costs and increasing scarcity of available labor. Thus, herbicides have had a direct relationship between industrial growth and environmental concern.

Yet, Hernandez pointed out that there still is a continuing need for better weed science education. Few college graduates have had training in modern weed science. "Public misunderstanding about herbicides is almost entirely due to lack of exposure," he said. "We must all become better teachers and perform like professionals."

In the session on regulatory aspects of weed control, Robert E. Hamman, manager, government relations, agricultural division, Ciba-Geigy Corporation, reported on the "Effects of Recent Legislation on Pesticide Development." He reviewed portions of the new Federal Environmental Pesticide Control Act pertinent to weed specialists. He said that the Act prohibits the use of any pesticide inconsistent with its labeling. This means that a manufacturer of product X can not sell it nor can an applicator ap-



New Officers of SWSS for 1973 are: (l-r) Ron E. Talbert, Arkansas Agricultural Experiment Station, Fayetteville, Ark., secretary-treasurer; Turney J. Hernandez, Du Pont Company, past president; Paul W. Santelmann, Oklahoma State University, Stillwater, Okla., vice-president; Allen F. Wiese, Texas A&M University, USDA Southwestern Great Plains Research Center, Bushland, Tex., president; William G. Westmoreland, Ciba-Geigy Corporation, president elect; and, James F. Miller, extension agronomist, University of Georgia, Athens, Ga., editor.

ply it for a use for which it is not labeled.

Following this T. O. Evard, section head, Federal-State Activities, Environment Protection Agency, Atlanta, reviewed the cooperation in regulation of pesticide applicators in the southeast. He pointed out that EPA has ten regional offices and each office is engaged in three programs, water, air and categorical. Pesticides are administered by the last program. Evard said the pesticide branch is divided into two sections, inspectional activities and Federal-state activities.

He reported on two recent cooperative efforts between EPA and state

governments involving pesticides. One was a workshop to discuss minimum standards for applicator competency and minimum criteria for "restricted-use" pesticides and pesticide disposal. The other was Project Safeguard, a program aimed at small farmers. In neither case was mention made about training applicators.

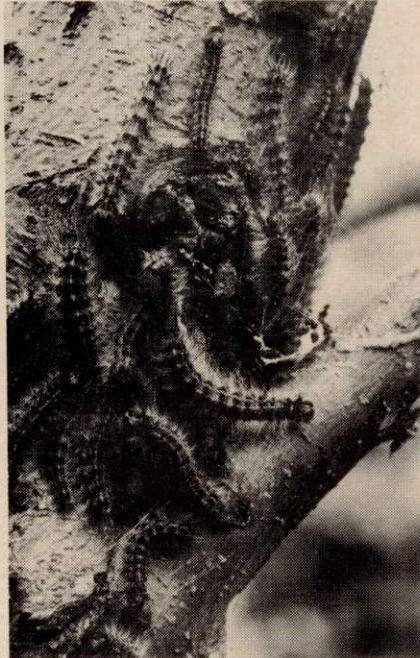
Another EPA speaker, James C. Oberwetter, special assistant for public interest groups, Washington, D. C. underscored what other speakers had to say on the Federal Environmental Pesticide Control Act. Other than the fact that this is the
(continued on page 30)



Graduate contest winners in the Plant Aspects division are: (l-r) Ford Baldwin, Oklahoma State University, honorable mention; Richard Schumacher, University of Kentucky, honorable mention; Charles Rieck, student interest committee chairman; A. C. Edwards, Auburn University, first place; and, Russell Hahn, Texas A&M University, second place.



Going



Going



Gone

Update: Gypsy Moth 1973

Nature's Environmental Polluter

GYPSY MOTHS will begin eating their destructive way across the northeastern United States again this spring. Experts believe millions of acres could be defoliated in 1973, making it the worst shade and forest tree devastation on record.

The major threat is foreseen along the "leading edge" of the moth's infestation path — in central New York, the Pocono Mountains and southeastern Pennsylvania and southern New Jersey.

Serious problems were fortunately averted in 1972 through a combination of factors. Record rainfall contributed to viral and bacterial attack on moth populations. Continued wet weather helped hold down the moth hatch too. An estimated 1,361,500 acres in nine states were devastated in 1972, down about 600,000 acres from 1971.

Parasitic wasps and other natural predators along with chemical spray programs also helped contain the moth last year. Scientists also at-

tributed reductions in some areas to moths "peaking out" after larvae

populations ran out of food—repeating a cycle the pests have followed for a number of years.

In many quarters gypsy moths have become known as environmental polluters. They have earned this reputation by denuding woodland, causing changes in watershed patterns, and increasing soil erosion. They also remove wildlife shelter and reduce the amount of oxygen generated in the infested area.

As a result, scientists with agricultural research stations and forest research specialists across the northeast have been focusing their efforts on the gypsy moth for many years.

The pest was introduced to the United States in an effort to cross-breed it with silkworms. A chance wind storm caused the escape of a few specimens. These multiplied into the present major threat to shade and forest trees throughout the northeast.

The early outlook for 1973 is not good. According to Pennsylvania's *(continued on page 26)*

Gypsy Moth Checklist

Scientists at Stauffer Chemical Company, who have been researching the gypsy moth as they sought a solution to its control offer a checklist for arborists and pest control specialists.

1. Recognize containment as a goal with gypsy moth.
2. Encourage use of natural predators and biological control agents.
3. Utilize effective, environmentally safe tree protection chemicals as recommended by state and federal authorities.
4. Check local recommendations and follow local ordinances regarding safe, effective spray programs with approved, recommended products to control gypsy moths.



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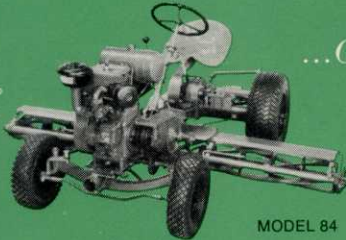
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For More Details Circle (121) on Reply Card

GYPSY MOTH (from page 24)

forest entomologist James Nichols, defoliation could range up to one million acres in Pennsylvania alone this year. This compares with 92,000 acres in 1971 and 404,000 acres last year in the state. Other northeastern in control specialists foresee similar problems in their states.

Agricultural scientists and forest researchers have been working to devise new weapons in the war on this major shade and forest tree pest. Imidan, used successfully for several years in the fruit and shade tree field, is the latest aid to entomologists and arborists in their fight against gypsy moth.

This new and environmentally safe compound has been approved for use against gypsy moth as well as elm spanworm and cankerworm, two other destructive tree insects. It is a biodegradable insecticide that has lower toxicity to man and animals than most other materials.

The product is relatively non-toxic to beneficial predators, including various species of mites,

thrips, beetles and flies. It fits into the environmental mix of natural



Apple tree in residential Connecticut shows work of Gypsy Moth larvae last season.

and selective insect control techniques needed to contain gypsy moths and other destructive insects.

The potential destructiveness of gypsy moth this year, scientists agree, is an acute problem. They point to the fact that a **single two-inch worm can devour a square foot of leaf surface in 24 hours.** With each egg mass capable of hatching out a thousand larvae from as many as 2,000 egg masses per acre, the gypsy moth presents a clear threat to forest, park, recreational and residential areas.

A survey of leading specialists involved in the gypsy moth battle in the northeast reveals both the severity of the problem and the potentials for success in the fight.

Dr. John Anderson, state entomologist at the Connecticut Agricultural Experiment Station has followed the battle for a number of years.

He reports that in 1972 a total of 514,000 acres were defoliated in Connecticut, a slight reduction from the 655,000 acres lost in 1971. He

(continued on page 60)



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Don't Lose Your Turf To Leafspot

WHAT'S the number one turf-grass disease of the cool season grasses? Leafspot! Nearly every superintendent has experienced this sickly yellow disease on his course, grounds, park or cemetery turfgrass.

Carl Hoppnan and Carl Grassl are no exception. As superintendent of the Aurora Country Club, Aurora, Ill. and Park Ridge Country Club, Park Ridge, Ill., respectively, both consider leafspot their number one disease problem. Their battle to protect turf rages from first thaw to snowfall. Each has found that the best defensive plan of action involves the use of proven environmental protection chemicals and sound management practices.

Hoppnan sprays greens as early as February, reducing the amount of "Helminth" that has overwintered before it becomes active. By spraying while the ground is still frozen, Hoppnan doesn't gamble on applying

fungicides when the turf is soft and easily damaged by tractor tires.

"I spray the fairways almost as early as the greens," says Hoppnan. "I get out there before the conditions are right for 'Helminth'. We shoot for four sprayings on the fairways before June 1."

Grassl also aims for four applications of fungicide on his fairways during the critical leafspot period. Both men have centered their disease control programs around Actidione Ferrated or Actidione TGF for specific control of *Helminthosporium* and alternate with other fungicides in their routine spraying program throughout the year.

Hoppnan sprays greens and tees weekly through mid-October. Then he cuts spraying to a monthly rate until snowfall. Fairways are sprayed monthly at Aurora.

Grassl sprays greens every seven days and fairways twice monthly.

He supplements his program during stress periods with extra applications on problem areas and continues his program into early winter.

"You can't forget your program after Labor Day," says Hoppnan. "By spraying late into the fall, we eliminate quite a bit of 'Helminth' that would otherwise overwinter."

Grassl adds, "Why let the grass come back in the spring weakened from leafspot? A late spraying in the fall and early application in the spring will more than pay for itself in healthy turf."

Timing of fungicide application is important to both men. They spray greens on Fridays to "brace" the turf for the stress of weekend golf traffic.

These turf managers are convinced their programs are worth the cost of the fungicide. "No superintendent hesitates about the cost of fungicide treatments when he has a severe outbreak on his course," says Grassl, "so one should consider investment in a complete preventive maintenance program and eliminate the cost and anxiety of having to treat flare-ups."

"I went to a new program five years ago," says Hoppnan, "and my fungicide costs have gone up about 1/3. But I'd have been willing to double it for the control I have now. Fungicides are really the least expensive item in a total turf disease management program."

Both superintendents fertilize with low levels of nitrogen. High amounts of N make the grasses more succulent and therefore more susceptible to fungal infection. Extra N also makes for rapid top growth which is not necessarily needed in established stands.

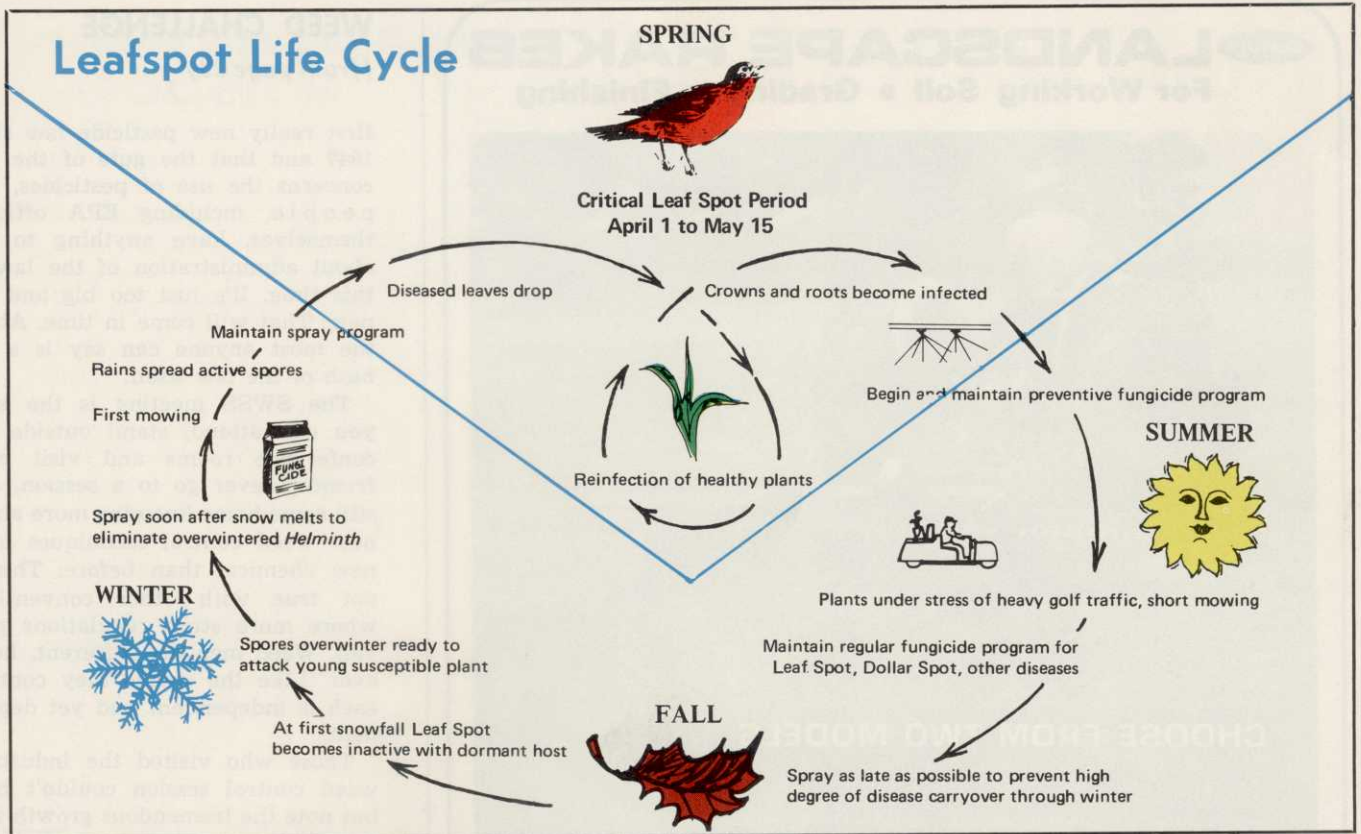
"Some turf managers confuse leafspot symptoms with nitrogen deficiency," says Hoppnan, whose course is predominantly bluegrass. "So when they add more N, they actually compound the problem instead of solve it. After nitrogen fertilizer is applied, the turf responds with a lush top growth. But, at the base of the plant, 'Helminth' is working on the older dead leaf tissue."

Hoppnan is also conducting an arsenical program for the elimination of *Poa annua* at Aurora and says that the low amounts of N help



Carl Hoppnan, superintendent, Aurora Country Club, Aurora, Ill. uses Actidione to control leafspot.

Leafspot Life Cycle



control the Poa since it requires high amounts of N to survive. With his arsenical-low nitrogen program, Hoppah has reduced his Poa population from 50 percent to less than 10 percent.

Hoppah applies fertilizer once in the spring and twice in the fall. His fertilizer plan is based on applying two pounds of nitrogen and six pounds of potash per 1,000 square feet. Phosphorous is omitted because it interferes with the action of the arsenicals.

Grassl's Park Ridge bentgrass fairways receive complete fertilizer applications totaling 2.5-1.75-1.0 pounds. The nitrogen-phosphorus-potassium mix applied to greens is 3.5-0.5-1.63 pounds per 1,000 square feet during the year.

The two men differ widely on turfgrass irrigation practices because of the differences in their grasses. Grassl sprinkles his bentgrass lightly every evening while Hoppah waters heavily three or four times per season for the best results on his bluegrass. Both, however, are careful to avoid standing water on poorly "ventilated" areas of their course since moisture and excessive humidity are conducive to leafspot development.

Grassl mows greens daily and
(continued on page 34)

Carl Grassl, superintendent, Park Ridge Country Club, Park Ridge, Ill. sprays greens every 7 days for leafspot.



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WEED CHALLENGE

(from page 23)

first really new pesticide law since 1947 and that the guts of the law concerns the use of pesticides, few people, including EPA officials themselves, have anything to say about administration of the law at this time. It's just too big and too new. That will come in time. About the most anyone can say is a rehash of the law itself.

The SWSS meeting is the kind you can attend, stand outside the conference rooms and visit with friends, never go to a session, and still come home knowing more about new weed control techniques or a new chemical than before. This is not true with other conventions where more strict regulations prevail. Weed men are different, however. Like the weeds they control, each is independent and yet dependent.

Those who visited the industrial weed control session couldn't help but note the tremendous growth this session has enjoyed in past years. More and more interest in industrial weed control has prompted expanded programming at SWSS. This year's session lasted one and one-half days. Here's a quick rundown on some of the papers:

B. C. Byrd of Dow Chemical Company spoke on vegetation control from Tordon picloram and phenoxy herbicide combinations in invert emulsions. He said that while 2,4-D and 2,4,5-T esters in combination have good effect there has been a rapid resurgence of conifers. Retreatment has been necessary to control collar resprouting of cherry, maple, locust, sassafras and persimmon. But by adding Tordon to the invert emulsion control can be achieved. In addition, the combination controlled white oak.

The Kansas City Southern Railroad is a mighty good road, according to William Crabaugh, Servitron, Kansas City, but when Don Telge of Velsicol Chemical Corporation finished his presentation, the railway was even better. Telge reported on his investigation of the weed control program. Previously the problem was not getting the control desired for the number of dollars spent. Crabaugh and Telge evaluated the vegetation problems. They decided to use Hyvar X and MSMA to control grasses and Banvel and 2,4-D for weeds and vines. They further decreased application costs

(continued on page 40)