

North Central Weed Control Conference

(from page 20)

weed species along its track where state laws demand. Brush control is selective and Santa Fe uses several methods in its program, Yazell revealed. Summer foliage treatments with combinations of 2,4-D and 2,4,5-T are effective in areas where there is no drift hazard. When track adjoins farmland, Santa Fe uses ammonium sulfamate. Recently dormant cane broadcast has gained favor with Santa Fe controllers. Yazell stated that the dormant cane method is comparable in cost to ammonium sulfamate summer treatments.

For cleanup treatments of hard-to-kill plants, either a 3% 2,4-D basal spray, or hand treatment with pelleted materials like fenuron, are used.

Yazell advised controllers with similar programs to be aware that continued use of a single chemical for control along rights-of-way will permit a buildup of species not susceptible to the chemical in use.

Highways Have More Acreage

"Expressways have four times more roadside than conventional roadways," Jack Burton, District Forester, Michigan State Highway Department, Alpena, revealed. "Regular roads have seven adjacent acres to a mile, but new expressways have 28 acres per mile." Burton told the NCWCC how his department maintains these extra acres in his talk, "Methods and Problems of Weed Control Along Highways."

Burton said the Michigan Highway Department relies on five types of weed control: selective sprays, growth retardation, brush control, ditch weed control, and soil sterilization along guardrails, signs, etc.

"Last year 3,000 miles of Michigan highway were spring sprayed with 2,4-D selective sprays. In April, May, and June, we use 1 to 2 lbs. of 2,4-D esters per acre. For the fall spray program, we combine 2 lbs. of 2,4-D with 2 lbs. of 2,4,5-T," Burton detailed.

This kind of roadside spraying, which Burton said has been used since 1948, is performed both by state spray rigs and by contract with private sprayers.



Asplundh: "Helicopter use will be increasingly economical as labor costs continue to rise."

"This practice does not eliminate mowing, but we have reduced it, and it pays off," the highway forester remarked. He said that the Department is ahead if only one round of mowing is eliminated, since mowing is three times as costly as spraying.

"For brush control, we use the cutting method, then spray the stubble," Burton revealed. "We respray the foliage which resprouts."

Delegates heard that anything which slows water movement in drainage ditches is bad for the highway. Michigan uses dalapon with success on cattails along roadsides. The highway official reminded controllers to spray vegetation which appears in cracks in roadside concrete gutters, and in sealed shoulders, so cracks will not be opened further by the force of growth.

"This year maleic hydrazide

grass growth regulator worked for us," Burton announced. Areas which had been mowed seven to eight times per summer in previous seasons, needed to be mowed only twice this past year.

Contractors Offer Views

Contract applicators were represented on the NCWCC program also. Herbert Hackman, Western Soil Management, Philadelphia, Pa., told the industrial session where he felt his company fits into the picture.

"We're a service organization, and we guarantee the work we say we will do," he began. "We like to think of ourselves as doctors; we will look at your problem, diagnose the trouble, and prescribe a control program."

"Since we guarantee our work, we feel it necessary that we are permitted to choose the chemical to use to get the best and safest results, and the time of application so control will be optimum," Hackman explained.

Hackman also revealed that a service of his company provides a weed specialist under contract to any agency or company which does not have one. As a consultant, a specialist will advise the proper treatment and oversee work performed if a company wants to do the work itself.

Helicopter Future Bright

"Helicopter applications for brush control will increase as more nearly perfect aerial systems come along, and will become more economical as labor costs increase," Edward Asplundh, head of the Aviation Division of Asplundh Tree Expert Co., Jenkintown, Pa., predicted in the session devoted to woody plant control.

Asplundh reviewed the history of early applications and told of recent chemical developments to

Weeds for lunch?

No, but the WTT camera caught Dr. Robert Hiltibran (left) of the Illinois Natural History Survey, Urbana, and James Whitley, Missouri Conservation Commission, Columbia, talking about aquatic nuisances after the dishes were cleared.





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aid aerial application. "Helicopters have been considered for brush control since the 1940's, but drift of unthickened material to nontarget areas was the biggest hurdle."

Chemistry jumped the hurdle, according to Asplundh, with the development of invert emulsions, a heavy emulsion of water in oil instead of oil emulsified in water. He explained that early inverts would break or separate too soon, but today's products when properly mixed will stand for days without separation.

"In the early days, mixing techniques were such that we could only apply 4 to 6 lbs. of 2,4-D acid per acre from the air," Asplundh continued. "But today 8, 10, and 12 lbs. per acre are not uncommon. We have even applied as much as 20 lbs. per acre of 2,4-D acid on tall resistant brush."

Some chemical systems which are or soon will be available were listed by the Asplundh official. "The Amchem system uses a premixed invert emulsion which is applied through a whirling disc. The speed the disc turns at determines the swath width; this can be controlled by the helicopter pilot.

"The Hercules system, called Rhap-Trol, keeps the water and chemical apart until it reaches a special bi-fluid nozzle where it is mixed, thickened, and released.

"Dow Chemical's system involves a boom adapted to thickened material," Asplundh disclosed experiments with Dow's Tordon applied by air. He said Dow is developing a thickener, called Norbac, which when added to a water spray mix produces a tapioca-like consistency. It can then be dispensed through a boom arrangement.

"Our first helicopter purchase was a Sikorski, because it had the power we needed to carry the chemical payload. Later when Bell Helicopter increased the power on its design, we purchased some of these, because they can be trailered to the treatment site. Our present fleet includes both."

Helicopter Crew Details

"Number one man on the spray crew is the supervisor," Asplundh said; "he is experienced with chemical use, knows flight plans, and gets along well with the public and government officials.

"Our helicopter pilots are truly specialists," Asplundh went on. "We train them ourselves for a job which is much more difficult than just flying, at which they must be expert also." Asplundh pilots attend a special school before going on the job, then they must attend refresher courses periodically.

Since helicopters must be in perfect working condition at all times, and on-the-job repair time must be minimal, a trained mechanic is the important number three man.

"We supplement our ground crew force with vacationing college men. They drive the mixing trucks and recharge empty spray tanks at predetermined heliports," Asplundh explained.

A typical spray schedule is tedious because bulk of work is done in morning and evening before wind comes up. Wind speeds over 6 mph hamper operations. Weather is probably the biggest cause of lost job time, the brush control expert disclosed.

"In the brush control business, when you have made expensive

investments, you either must do the same job as someone else would for less money, or a better job for the same money. I can see where much utility line spraying for brush control will demand the use of helicopters in order to be economical," Asplundh concluded.

New officers for the North Central Weed Control Conference were elected at this annual meeting. Replacing Dr. D. D. Hemphill, Horticulture Department, University of Missouri, Columbia, as president for the 1965 term is John D. Furrer, Agronomy Department, University of Nebraska, Lincoln.

R. L. Warden, Plant Science Research and Development, Dow Chemical Co., Midland, Mich., is the newly elected vice president.

G. Clare Buskirk was reelected as secretary of the organization. Buskirk is from Lincoln, Neb., also.

Proceedings of this 20th meeting will be compiled, secretary Buskirk told WTT. Availability of a complete transcription of the conference will be announced in WTT at a later date.



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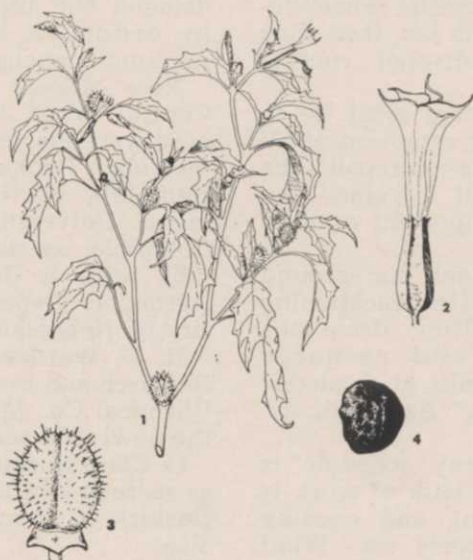
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JIMSON WEED (*Datura stramonium*)



Jimson weed is an annual, reproducing by seeds, which is variously known as Jamestown weed, stinkwort, thornapple, and trumpetplant. It is widespread across the United States and southern Canada, but is more troublesome in southern North America. It was introduced from South America as an ornamental.

Jimson weed is found on silty or gravelly soils in low areas, fields, and waste places such as dumping grounds.

Stems (1) grow 2 to 4 feet tall. They are smooth, stout, and widely branching. Leaves are oval, with shallow, irregularly toothed margins. Leaves occur alternately on thick stems. They have a distinct foul odor.

Flowers (2) are large, either white or purplish, funnel (trumpet)-shaped and 2 to 5 inches long. They are borne singly in the axils (junctures) of leaves.

After flowering, the unique seed pod (3) develops. It is ovoid with a crease extending from the base over the end and down the other side. The pod is covered with short, sharp spines. It measures about 1 inch in diameter. Many dark-brown seeds (4) contained in four sections of the pods, are circular, flat, and wrinkled. Seeds are permitted to fall when autumn dryness causes the pod to curl back along the crease and release the seeds.

Roots are thick and fleshy, very much branched, and shallow.

There are two related southwestern species: the desert thornapple, *Datura discolor*, and the sacred datura, *D. meteloides*, which are readily distinguished as *Datura* spp. by the funnel-shaped flowers or the spiny seed pod, but these species differ in size and coloration.

All *Datura* spp. are members of the Nightshade family, Solanaceae, renowned for members which possess poisonous properties.

All parts of the jimson weed plant are poisonous when eaten by man or animals. Some sensitive individuals contract dermatitis (skin rash) when they touch jimson weed.

Jimson weed is easily controlled with 2,4-D or 2,4,5-T. Many seeds of this weed which lie dormant in the soil necessitate continuous controls with these herbicides year after year for several seasons before complete control is achieved. Of course, jimson weed is vulnerable to soil sterilants.

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

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

New Ways to Apply Aquatic Herbicides

(from page 19)

pleted in one continuous operation. A layoff of even a few hours may result in the shifting of water to such an extent that some areas may be undertreated, with a resulting decrease in effectiveness of treatment — or, may be overtreated with resulting hazards to fish life.

The blower-type machines are of various sizes and weights, but basically they are all of the same construction pattern: (1) a hopper with sloping sides holding 130 to 170 lbs. of material; (2) an agitator just above the bottom of the hopper having a speed of from 15 to 30 rpm; (3) an adjustable orifice to feed from 5 to 60 lbs. per minute; (4) gas engines, 2½ to 6 hp at 3,500 rpm; (5) 14" to 16" blowers directly connected or V-belt driven, with chemical fed directly into the suction port and 4" to 7" outlet spout for dispersion; (6) a light frame to support counter shafts and hopper speed reducer. The total weight of the unit will vary from 250 lbs. to 450 lbs., depending upon the size and type of material used.

The cost will naturally vary depending on the size, equipment, and personnel available for fabrication. The engineering department of Helix estimates approximately 50 hours of time and a total cost in the neighborhood of \$1,000.00.

Screenhopper—Power Boat

To quickly and efficiently treat not only the 725 acres but also the seven-mile shoreline of their primary storage reservoir, the Seattle Water Department has designed and built two specialized pieces of distributing equipment. For the treatment of the reservoir itself a large, bronze, mesh-screened hopper was constructed.

The screen has a ¼" mesh and is supported on a framework of extruded steel angle stock. Two-point pivot mounting permits flexibility and prevents damage

in the event it is grounded in shallows or shoreline areas.

The mounting is designed to place the hopper directly in the agitation created by the boat propeller to provide rapid dissolving of the algicide. Special chutes have been installed to facilitate filling the hopper from 100-pound sacks stored aboard the boat.

The hopper was constructed in the Water Department shop and required approximately 48 man-hours. Total cost was approximately \$325.00.

Two men are required to operate the boat and fill the hopper. A set of material-handling conveyor tracks are used for unloading the truck. The cost of the conveyor tracks was approximately \$100.00.

Another piece of special equipment devised by Water Department personnel is a steel hopper and blower for application of small crystal copper sulfate. This hopper was also built in the Water Department shop at a total cost of \$200.00 and required two days to fabricate. This hopper is temporarily suspended from the bed of a truck carrying a skid-mounted compressor.

This device is used to apply chemicals to the 7-mile shoreline of the primary storage reservoir at Lake Youngs and the 1-mile shoreline of the Tolt Regulating Reservoir.

Two men can operate the equipment with one man driving the truck and one man attending the feeding of copper sulfate into the hopper. The coverage is very uniform and is rapidly applied. The speed of travel of the truck is the gauge used in determining the dosage applied.

This is the first of two articles on equipment available to contract applicators and others for application of chemicals to aquatic areas. Part II will appear in the April issue.
—Ed.

Bo-Rid Soil Sterilant in New Dry Form, Says Bogle

Bo-Rid soil sterilant weed and grass killer formulations are now appearing in a new, dry-pellet form, reports the R. H. Bogle Co., Alexandria, Va.

In its new form the layered configuration flows out as a white granular grit, easy to see and handle, the company says. The pellets hug the ground. Ground moisture works slowly to dissolve the pellet layer upon

layer, providing a long-lasting action for increased effectiveness.

Specifications describe the three main formulations: Bo-Rid 20H for initial kill of heavy problem vegetation; 20K for follow-up of pretreated areas or medium vegetation control; and 10H-15K for general weed and grass control in southern areas.

Data sheets covering these three formulations are available to interested readers who write to R. H. Bogle Co., Alexandria, Va.

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Dr. Peters: Northeastern Weed Control Conference has a "symbiotic relationship with industry."



Williams: "Make sure your equipment is adequate, your pump large enough."

presentation of new chemicals from industry, and talks on forestry and public health weed control. As usual, there were a number of research reports on turf weed management.

Since the new chemicals presented were almost identical with those discussed at the North Central Weed Control Conference in December, readers may turn to page 10 for a resumé of the presentation.

Watch Your Equipment!

A leadoff address during the first day's general sessions got down to brass tacks about how weed controllers should look after their application equipment. After all, the best herbicide known to man can fail if the spray rig or spreader is not working correctly, or is not operated with dexterity. This crucial topic was examined at length for the gathered weedmen by A. T. Williams, Chemical Sales Manager for Agway,

of inverts, or chemically thickened materials.

News of the latter came in a paper prepared by J. W. Suggitt and J.E.F. Winter, both of the Hydro-Electric Power Commission of Ontario, Toronto.

For several reasons, standard invert emulsions were unsatisfactory for the kind of spray program the Commission desired. "Recently one manufacturer," the Canadians reported, "has promoted particulate sprays intended to allow little herbicide drift. Small particles of a water-swellable polymer, dispersed in an aqueous herbicide solution from which they imbibe liquid, swell to some limited final size determined by the polymer used. With the addition of particles in sufficient quantity, essentially all the herbicide solution is taken up, with formation of a very thick, coarse, granular liquid much like tapioca."

Success was achieved with

Broadened Industrial Sessions Underscore Importance Of Nonfarm Weed Control at 19th Northeastern Weed Meet

In an urbanizing America, where fewer acres of farmlands now produce greater quantities of food, it's no surprise to find weed scientists increasingly concerned with urban/industrial vegetation control. This fact was brought out resoundingly again this year for a record 775 delegates to the 19th Annual Northeastern Weed Control Conference convention at the Hotel Astor, New York City, Jan. 6-8.

In his keynote address, outgoing president Dr. Robert A. Peters cited not only the growth in importance of weed control in general, but the phenomenal rise of nonfarm vegetation maintenance technology. Dr. Peters, of the Plant Science Department, University of Connecticut, Storrs, said the NWCC has from the outset maintained a "symbiotic relationship" with industry, and this year devoted more time than ever before to railway, highway, utility, and other forms of industrial weed science.

Other highlights of the 19th meeting included an expanded section on aquatics, a detailed

Inc., giant supplier complex headquartered in Syracuse, N. Y.

Williams concluded with a summary of what the successful application program should have, and included closed tanks, long-wear nozzles, and sufficiently large pumps in his recommendations.

Scan Helicopters/Spray Drift

More and more attention each year is being given to use of helicopters for herbicide application, and the development of thicker sprays, either as a result

such a mixture, applied from a spray-boom-equipped helicopter, for the control of woody growth in transmission line rights-of-way. Spray drift is largely avoided, even with crosswinds of up to 7 mph, and adequate coverage of foliage is obtained at a substantially reduced cost, the researchers indicated.

One of the invert-emulsion application methods currently much in the news at weed conferences is the Rhap-Trol Spray System, a product of Hercules Powder Co. According to Dr.

New head of the Northeastern Weed Control Conference Dr. G. D. Hill (center) was congratulated by a visitor from Wilmington, Delaware, Dale E. Wolf (right). Wolf is president-elect of the Southern Weed Conference, and both Dr. Hill and he are duPont men. Dr. John Meade, NWCC secretary-treasurer, looked on happily.



Weed-choked pond?



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New vice president of the Northeastern Weed Control Conference, Dr. Richard D. Ilnicki (left) was surprised by the camera while being congratulated by Lloyd Warner of Elanco Products.

Lyle Hill, in charge of the product for Hercules, the Rhap-Trol technique uses a bifluid nozzle to apply an invert emulsion of a very high yield point. With this high yield point, achieved in the nozzle chamber as the emulsion is formed and sprayed, the wind, be it from the speed of an aircraft or from a fan, will not cause the droplets to break up after they are formed until they reach the weed. Dr. Hill sees a growing range of applications for inverts in general.

What the Railways Need

As part of the expanded industrial sections of this year's conference, delegates heard railway vegetation maintenance and control expert Charles F. King tell what America's rail companies need in weed and brush service.

King is assistant engineer, Chesapeake and Ohio Railway, Huntington, W. Va.

There were three primary points in King's address: (1) railroads need more help from chemical suppliers and applicators in selling management on the need for a greater chemical expenditure to combat the loss of hand labor; (2) railways should have an active joint agency to keep tabs on pending state, county, and local vegetation control legislation; (3) the railway industry needs more active and objective information sources on vegetation control.

Highway executives, too, are faced with constantly increasing funds of knowledge about vegetation control. One interesting and somewhat offbeat concept was presented by E. F. Button, agronomist with the Connecticut State Highway Department.

Button wanted to test soil sterilant-tar mixtures, used for spraying under guide rails. He found that a liquid-formulated soil sterilant (Urox from General Chemical) can be mixed with a tar for application under guide rails for effective weed control, eliminating the traditional spray crew. Furthermore, either the sterilant, or more probably the "oil-carrier" of the liquid-formulated soil sterilant, appears to be beneficial in extending the "elastic" life of tar applied over a heterogeneous soil surface under conditions where there is no vehicular traffic to "knead" the tar.

"One might speculate," Button concluded, "that additions of this type of sterilant to tars and possibly asphalts for shoulder work, or for parking lots, might provide the benefits of weed control and extended pavement life."

"Flow Developer" Clears Ponds

Many authorities consider aquatic weed control to be the most challenging of all weed problems. Certainly the concept of chemically controlling aquatic plants has just come into its own in the last few years. With this growth in importance comes the development of revolutionary techniques for controlling water weeds. One such device is the "flow developer," which was explained to conference delegates by Jason M. Cortell, a consultant biologist and aquatic weed expert from Brookline, Mass.

Faced with growing contamination of Crystal Lake in Newton, Mass., researchers were able to determine that stagnation and lack of circulation contribute to a buildup in aquatic vegetation, algae, and bacterial contamination.

Cortell said discovery of this fact led to the invention of a mechanical flow developer. It consists of a 10-horsepower, submersible, electric motor with a propeller to generate water movement and create a current through the bathing area. Mounted on a floatable wooden platform, the flow developer is capable of displacing 2,000,000 gallons of water per hour.

Chemical treatments were later applied through the flow developer to control aquatic weeds; then copper sulfate was similarly introduced for algae control.

Also probing the subject of aquatic weed control were sev-



Pensive study of notes prepared these two speakers for their addresses. National Park Service official E. D. McClanahan (left) talked about weed control and turf management in the nation's recreation spots, while VPI researcher Dr. T. O. Evrard told of his experiments with invert emulsions of 2,4-D on highway weeds.

eral papers on current research using today's herbicides. At Virginia Polytechnic Institute's Agricultural Experiment Station, for example, researchers David L. Sutton, T. O. Evrard, and W. E. Chappell recently completed a series of tests with promising chemicals and those already standard to determine effectiveness of weed control chemicals in farm ponds. The research team established four major points:

(1) Simazine concentration of 0.5-4.0 ppm was effective in the control of *Potamogetons*, *Chara*, *Spirogyra*, and *Oedogonium*.

(2) White waterlilies were controlled by 2,4-D and 2,4,5-T at 15 lb./acre.

(3) Endothal plus silvex at 2 ppm controlled *Potamogetons*.

(4) Combinations of 2,4,5-T and amitrol, and 2,4,5-T and dalapon, were effective in the control of ditchbank plants, the VPI report concluded.

New Turf Herbicides Bow

In sessions on control of unwanted weeds in turf, several papers, mostly hinging on experimental testing with established and new compounds, were presented.

At the Connecticut Agricultural Experiment Station in Windsor, associate plant pathologist J. F. Ahrens tested the following preemergence crabgrass killers: Dacthal (Diamond Alkali); Zytren (Dow); Bandane (Velsicol); trifluralin with diphenatril (Eli Lilly); Benefin (Eli Lilly); Betasan (Stauffer); Azak (Hercules); Tok (Rohm &

(Continued on page 36)

In the Hudson Valley, Trees Stop Growing.



Poughkeepsie, New York: 2,000 trees in the mid-Hudson Valley cities of Poughkeepsie, Kingston, and Newburgh were sprayed with MH-30T* this summer in an extensive test conducted by the Central Hudson Gas & Electric Company. This test proved the effectiveness of MH-30T in controlling the regrowth of trees next to electric lines.

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down but branches get sturdier and keep on producing leaves.

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Broad Program, Florida Sunshine, Beckon Nation's Arborists to Meeting Feb. 14-16

A program of informative subjects to be presented by field specialists and industry representatives has been prepared for delegates to the 1965 winter meeting of the National Arborist Association, assembling Feb. 14-16 near St. Petersburg, Fla. Headquarters for this annual event is the Guy Lombardo Port O-Call Inn, Tierra Verde.

Initial business functions will be held Sunday with a meeting of the association board and finance committee. The rest of the day will be dedicated to an informal get-together as delegates arrive.

The program for the discussion periods of the next two days includes the following topics:

"Shade Tree Insect Research on New Approaches to Control," by Russell R. Whitten, chief, Division of Forest Insects, U. S. Forest Service, Central States Forest Experiment Station, Columbus, Ohio.

"A Diversified Tree and Landscape Service," will be presented by Edwin and Jane Smith, of Smith Tree and Landscape Service, Lansing, Mich.

"Safety, an Everyday Problem for the Tree Company," is the

subject offered by a representative of the Blume System Tree Experts, Houston, Texas.

Something new in equipment is explained in the talk, "A New Tree Mover," by Carl E. Boat, of Vermeer Mfg. Co., Pella, Iowa.

"Report on Association Advertising," by John Duling, Duling Tree Expert Co., Muncie, Ind., and "Trees and Gardens of Foreign Lands," by Lenore and Henry Vaughn Eames, Stockton, N. J., are other topics to be presented to the delegation. Maple tree disease problems and effects

of drought, and what the utility company expects of the contractor are also on the agenda.

A panel discussion focused upon "Costs and Pricing of Tree Operations," is composed of the following: "Tree Moving and Planting," William Rae, Frost & Higgins Co., Arlington, Mass.; "Pruning and Fertilizing," Edwin E. Irish, Chas. F. Irish Co., Detroit, Mich.; "Spraying, Cabling and Rodding," William P. Lanphear III, Forest City Tree Protection Co., Cleveland, Ohio.

Winston E. Parker, Moorestown, N. J., president of the association, says that owners and managers of all tree service companies are welcome to attend the meeting.

Midwest Regional Turf Conference To Assemble at Purdue, March 1-3

An extensive program for turf managers in every field, including golf courses, sod nursery producers, and general landscape and lawn maintenance, has been keyed to "space-age thinking" for the Midwest Regional Turf Conference scheduled by Purdue University, Lafayette, Ind., March 1-3.

To amplify the conference theme, "Space for Growing Turf," the following seven talks are slated: "Space and Turf Growth—An Introduction," by F. V. Grau; "The Particles of Soil—Clay," J. L. White; "The Space Between Particles," H. O. Kohnke; "The Size of the World Today," E. L. Butz; "Infiltration and Soil Surfaces," J. V. Manner; "Moisture Storage and Delivery," D. Wiersma, and "Turf—The Integrator of Space and Water," J. R. Watson.

Bluegrass Interest High

"Bluegrass Research Progress," a talk by C. Berry, will give up-to-date information about this highly popular species. Looking to the future, John Long will present his topic "Bluegrasses—Today and Tomorrow," to give those present a perspective of what is in store in the years ahead.

To those associated with golf courses, discussions on development of bluegrass on fairways, protection from competition, from damage and from drought will be presented by several specialists.

Sod nurserymen will also hear a bluegrass topic directed to them: "Bluegrasses — Varietal Performance," by J. Long. Another talk by B. Warren will cover good seed or vegetative varieties.

Turfmanagers can compare their experiences with those who will present talks based on experience with unwatered areas, manually watered areas, and automatic operations.

Advance Registration Urged

For the last four years, attendance at the Midwest Regional Turf Conference has averaged over 600. Officials request advance registration, but those who are uncertain whether they will be able to attend can register the morning of March 1.

Complete information, a copy of the program, and registration, may be obtained by writing to W. H. Daniel, Department of Agronomy, Purdue University, Lafayette, Indiana.

Southern Turfgrass Conference Meets Feb. 22-23

"Better Turf Through Better Maintenance," will be the theme of the 1965 Southern Turfgrass Conference meeting in the Hotel Peabody, Memphis, Tenn., Feb. 22-23.

Discussion programs are designed to provide the best information on all phases of better turf maintenance. Ten noted speakers will present the most recent developments in turf maintenance and related functions. A question and answer period will follow each talk.

A banquet, entertainment and other activities are included in the conference program.