

Revised Tolerance Booklet Published by Rohm & Haas

A 74-page revised edition of a booklet entitled "Tolerances and Uses for Rohm & Haas Agricultural Chemicals" was recently published by Rohm & Haas Co., Philadelphia. The firm is a large volume supplier of fungicides, herbicides, pesticides, miticides, and spreader-stickers.

The booklet, 8½ x 11 inches in size, provides detailed information on the use of all chemicals produced by Rohm & Haas. Directions for the use of these chemicals, their registration numbers, precautionary statements and active ingredient contents are presented.

Quick-reference tables provide the compatibilities of Rohm & Haas chemicals with those commonly used, and clearances of pesticides as applied to fruits, grasses, and ornamentals. It alphabetically cross-indexes all crops and the disease, insect, or mite species of each with the pesticide recommended for their control.

Readers may obtain a copy of the booklet, "Tolerances and Uses for Rohm & Haas Agricultural Chemicals (AG-102c)," by writing to A&SC Dept., Rohm & Haas Co., Philadelphia, Pa. 19105.

Fertilizing Appalachians by Airplane Believed Practical

Spreading fertilizer by airplane over the steep hills of Appalachia has practical and economical possibilities. In these areas where ground application is difficult or impossible, aerial application may save many small farms now doomed to failure, according to recent studies by Paul J. Stangel, University of Wisconsin (Madison) soils scientist.

Stangel reports that about 3,000,000 acres of cropland are fertilized by air every year in the United States. About 90% of this acreage is in the rice fields of Texas, Louisiana, Arkansas, and California. The area of greatest potential, Stangel thinks, is in the steep hills of the Appalachians. Pilot studies on 5,000 acres show good results, and another 3 to 5 million acres

of steep land in that area could be fertilized by air.

Keeping costs to a minimum presents the greatest challenge. Aerial application requires expensive equipment and trained personnel. Large volume and efficiency can solve this.

The West Virginia study showed that only high-analysis fertilizer should be used and that other cost-reducing factors would be required, such as close proximity of landing strips to fertilizing areas, quick and efficient loading of chemicals, and fields that are large, rectangu-

lar, and located close to each other.

Poor climatic conditions discount spring aerial application. Flying conditions in the fall are generally good, however. Helicopters could be used to complete the program under adverse weather conditions.

With all conditions favorable an airplane can spread fertilizer at a cost of about one dollar per acre per hundred pounds. Stangel's studies were done cooperatively with the Tennessee Valley Authority and West Virginia University.

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of
fine turf



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THIURAM M (Thiram-Mercury)
MERCURAM (Thiram-PMC)
SURFACTANT:
958 WETTING AGENT

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SUPER CRAB-E-RAD (Liquid) AMA
SUPER CRAB-E-RAD + 2 (Liquid)
AMA + 2,4-D
SUPER CRAB-E-RAD (Calar)
NEW CRAB-E-RAD 70 and 120
(Liquid) SMA
- for Dallisgrass control
DAL-E-RAD 100 (Powder) DSMA
SUPER DAL-E-RAD (Liquid) AMA
SUPER DAL-E-RAD + 2 (Liquid)
AMA + 2,4-D
NEW DAL-E-RAD 70 and 120
(Liquid) SMA
SUPER DAL-E-RAD (Calar)

Distributor Inquiries Invited



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Snow, mud, or swampland are no obstacles to the Snowmobile-Fitchburg Chipper unit, which can be used year-round over all terrain conditions and in any kind of weather, Fitchburg Engineering Corp. says. The chipper converts wood up to 7 inches in diameter into chips and blows them out of the chute. Complete details may be obtained from the company in Fitchburg, Mass. The carrier vehicle, called the Muskeg Carrier, is manufactured by Bomardier Snowmobile Ltd. of Canada.

U. of Cal., Riverside, Sets Nursery, Landscape Tree, Turf Meet, Feb. 3-5

An extensive 3-day program has been devised for the Nursery, Landscape Tree, and Turf Conference, scheduled for Feb. 3-5, at the University of California, Riverside.

The first day is devoted to topics of interest to nurserymen, including talks on root rots and nematodes.

The second is directed to arborists and tree servicemen. Included in the program are the following subjects: sidewalk damage, municipal nurseries, freeway landscaping; and contract work with public agencies. Symposiums will exchange information on control of plant growth, and on the safe use of pesticides.

Chairman of the Landscape Tree Day is Roy Wells, Superintendent of Parks and Street Trees, Culver City.

Turf Day will find applicators and greensmen receiving the latest information on "New Irrigation and Aerification Methods," by Wayne Morgan, Agricultural Extension Service, Los Angeles County; and "Recognizing Your Turf Problem," by John Madison, Associate Professor, Department of Landscape Horticulture, U. of Calif., Davis. A talk by

Victor Youngner, Associate Professor, Department of Agricultural Sciences, U. of Calif., Los Angeles, deals with "New Frontiers for Dichondra."

The program is directed by the university's Agricultural Extension Service and the Department of Landscape Horticulture. Co-operating in this educational venture are the California Association of Nurserymen; International Shade Tree Conference, Western Chapter; Street Tree Seminar; and the Southern California Turfgrass Council.

Education exhibits and university publications will be available. Conference chairman is William B. Davis, extension ornamental horticulturist, University of California, Riverside.

Rutgers Sets Jan. Turf Courses

Turf management topics will headline a 3-day program sponsored by the College of Agriculture, Rutgers University, January 18-22.

Courses on lawn, utility and athletic field turf will be conducted Jan. 18-20. Courses centering on golf and fine turf are scheduled for Jan. 20-22. Staff

members of the college, specialists from the turf field and other organizations will participate in giving the most recent developments in turf culture.

Enrollment is limited to 325 persons. Applications for registration will be accepted in the order received. For information on these courses, write to Dr. Westervelt Griffin, Assistant Dean, College of Agriculture, Rutgers—The State University, New Brunswick, N. J.

Vinyloy Has Tubing Brochure

A 4-page brochure containing complete information on Vinyloy hose and tubing was recently published by Vinyloy Hose & Tubing Co., Inc. Said to be lightweight and flexible, the hose is nonflammable and will not rot.

It is further reported that the hose resists abuse, is nonporous and resists acids, caustics, solvents, chemicals, and petroleum products. It is stocked in continuous lengths up to 300 feet.

A copy of the brochure is available to interested readers who write the company at 8821 Kenwood Rd., Cincinnati, Ohio 45242.

Preventive Care Will Reduce Storm Damage to Shade Trees

Prolonged drought during the late summer and fall, resulting in abnormally dry soil conditions, is a common cause of winter injury to ornamental evergreens. Throughout the winter, moisture is given off into the atmosphere through the leaves and needles of evergreens. This must be replaced by water drawn from the soil. If the soil is low in water content, the foliage and twigs of the plants dry out and die.

To help prevent this type of winter injury, water evergreens regularly and thoroughly during the drought and as late as ground conditions permit. A thick mulch of wood chips, straw, or similar material over the root area will retard evaporation of soil moisture. Burlap screens can be erected to protect upright evergreens from the

drying effects of winter sun and prevailing winds.

Most shade tree injuries are caused by severe storms, with damage ranging from a few broken branches to irreparable mutilation of entire trees. Much of this damage can be prevented, or reduced in severity, through protective measures advocated by the National Arborist Assn.

Examine trees for major branches growing so nearly parallel that the angle at the crotch is narrowly V-shaped. Such crotches are weak and splitting is likely to occur during wind, sleet, or snow storms. To prevent this damage one or more sections of tree screw rod should be installed at the crotch, and the branches strengthened by placement of a system of cables in the upper part of the tree.

Check shade trees for unduly long, pendulous branches; these are likely to be broken as they whip in winds of gale force. By judicious pruning these branches may be headed back without marring the beauty of the tree.

Gehl Introduces New Mowers

A 12-foot and two 6-foot rotary mowers, said to be ideal for the turfman or highway maintenance crew, have been introduced by Gehl Bros. Mfg. Co. All three feature heavy-duty, free-swinging knives of heat-treated alloy steel, and hydraulic controls, the company says.

The 6-foot models are designed as either pull-type or with three-point hitch pickup, and are equipped with two rotary blades. The 12-foot model, equipped with four blades, is available as a hydraulic model only, and has a cutting height of 1 to 14 inches. It also features a hitch in the rear which makes possible additional pulling of rollers, fertilizer spreaders, seeders, etc., it is reported.

The PTO drive features a shear pin arrangement to safely handle all shock loads. The 6-foot models can be equipped with manual lift ratchet jack.

Complete details are available from Gehl Bros. Mfg. Co., West Bend, Wis.

17th Annual California Weed Conference

Is Scheduled for Fresno, Jan. 19-21

Specialists representing university, industry, state and federal agencies, and professional associations, will participate in a broad educational program for the 17th Annual California Weed Conference, in Fresno, Calif., Jan. 19-21, at the Hacienda Motel.

No less than 28 subjects are

Electric Starting Added to Mott Hammer Knife Mower

A 12-volt electric starting unit has been developed by the Mott Corp., and is available as optional equipment on the 1965 model 32" hammer knife mower. The unit consists of an electric starter, generator, and battery.

Mott's mower features free-swinging blades which fold back in the face of obstruction and automatically return to cutting position when clear. This mechanism reduces tendency to throw struck objects, the company says.

The machine can be used as a renovator with addition of the proper attachment. A riding sulky, choice of wheel setups, and guards are additional optional items. It is self-propelled, has two forward speeds, and reverse. Complete details are available from the company at 500-R Shawmut Ave., La Grange, Ill.

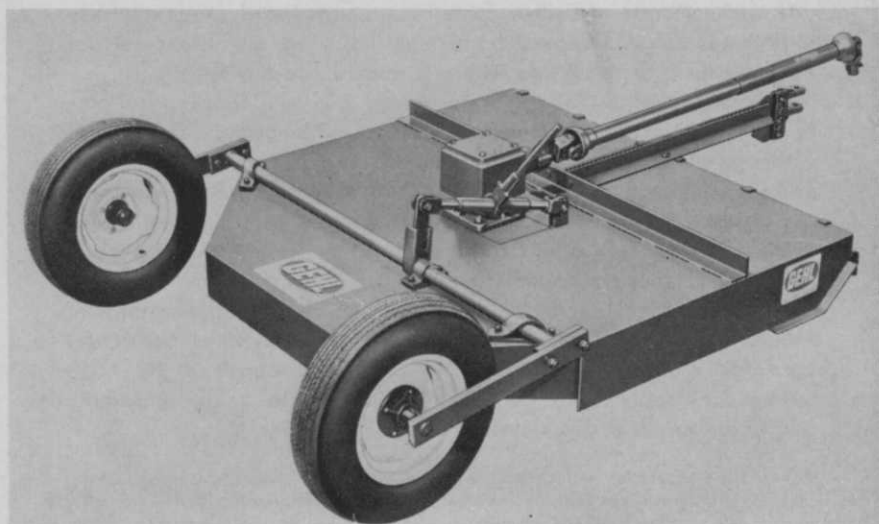
included in the 3-day program. Range of the material to be offered includes new weed control findings as they apply to many agricultural enterprises, as well as industry sites, rights-of-way, and others.

Some of the subjects to be presented are "A Review of Basic Equipment and Application Techniques in Weed Control," by Walter Lovely, U. S. Department of Agriculture, Ames, Iowa. For those whose interests lean toward roadside and special weed control equipment, a talk by Jack Butler, University of Illinois, will be offered.

Other topics are "Application of Herbicides by Aircraft," Wesley E. Yates; "Brush Control," by Oliver Leonard; and "Surfactant Effects on Weed Control," by D. E. Bayer. All three men are associated with the University of California, Davis.

James E. Dewlin, president of the conference has coined the slogan, "You cannot afford to miss the best in the West," for this meeting. Dewlin is associated with Amchem Products, Inc.

An equipment show including flame and soil incorporation equipment has been arranged for the conference. More details are available from Dr. Bayer at the University of California, Davis.



This new heavy-duty mower manufactured by Gehl Bros. Mfg. Co., is equipped with heat-treated alloy steel blades 1/2 inch thick and 3 inches wide.

GREEN FOXTAIL (*Setaria viridis*)



Green foxtail (above left, 5) is an annual grass and is variously known as pigeongrass, wild millet, green bottlegrass, and bristlegrass. Green foxtail grows in clumps to a height of 1 1/2 to 3 feet and reproduces by seed produced in the fuzzy seed head. Green foxtail is common throughout North America.

Stems of green foxtail grow erect. Many stems and seed heads are produced on a single plant. Leaves are dark green and without hairs. Margins of leaves have rough edges. Leaves are never more than 6 inches long and are usually 1/4 to 1/2 inch wide. They are produced alternately on the stem. The leaf sheath surrounds the stem down to the point where the next leaf unfolds.

Seeds (6) are compressed in a cylindrical greenish head atop the main stem. The spikelike panicle is 1 to 3 inches long. Each seed (spikelet) on the head has several (1 to 3) bristles arising from the base of the spikelet which gives the seed head the appearance of a "bottlebrush."

Seeds are oval, 1/16 inch long, flattened, faintly wrinkled on one side and rounded on the other.

Roots are densely fibrous, shallow, and are not extensive.

Three other foxtail species should be briefly distinguished from green foxtail. Yellow foxtail, *Setaria lutescens* (above right, 1) has more bristles per spikelet (5 or more). Spikelets are tawny or yellowish. Heads of yellow foxtail are shorter and seeds are 1 1/2 to 2 times larger. Leaves have long hairs on the upper surface near the base of the blade where it attaches to the sheath.

Giant foxtail, *S. faberii*, is commonly 2 1/2 to 3 feet tall but may reach a height of 7 feet if supported by other plants. Upper leaf surfaces are covered with short hairs. The seed heads, normally nodding, range between 5 to 7 inches, may reach 8 inches long.

Bristly foxtail, *S. verticillata*, grows about 4 feet high, and each spikelet has but one bristle. This single bristle is downward barbed so that it catches on animals and clothing.

Foxtails can be controlled by preemergence applications of trifluralin, DMPA (Zytron), DCPA (Dacthal), and other herbicides used for crabgrass control. Control is also obtained by post-emergence applications of TCA (trichloroacetic acid), endothall, and dalapon. TCA gives a short-term soil sterility.

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)

Record Turnout Forecast for GCSAA Conference, Feb. 7-12

"The Greatest Show on Turf" promises to be greater than ever when the 36th International Turf-Grass Conference and Show, sponsored by the Golf Course Superintendents Association of America, convenes in Cleveland, Ohio, February 7-12. Headquarters for the event is the Sheraton-Cleveland Hotel.

A total of 143 booths will display products by commercial firms. In addition to these, institutional exhibitors will occupy space to promote their services.

While the conference and show are primarily for golf course superintendents, others involved in the care and maintenance of turf may attend upon payment of the normal registration fee.

Malcolm E. McLaren, superintendent of the Oakwood Country Club in Cleveland, and John J. Spodnik, superintendent of the Westfield Country Club courses, LeRoy, Ohio, are co-chairmen for the conference and show. McLaren is a past president of GCSAA and Spodnik is currently serving as a national director.

Host for this year's conference and show is the Northern Ohio GCSA, Don Figurella, president.

Chipman Builds New Plant

A new CMPP acid plant, now under construction in Portland, Oregon, will increase the spectrum of hormone weedkillers manufactured by Chipman Chemical Co., Inc. The plant is expected to be in full operation early this year.

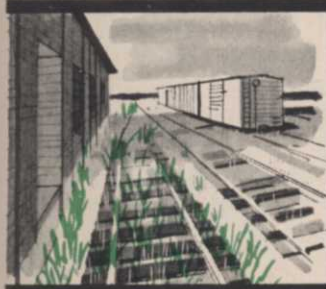
According to W. H. Moyer, president, the new facility is an addition to the Portland production complex where 2,4-D, MCPA, and 2,4-DB acids are produced. CMPP acid (2-(2-methyl-4 chlorophenoxy) propionic acid) is a hormone-type weedkiller especially useful for weed control in turf, it is reported.

Chipman Chemical Co. headquarters is in Burlingame, Calif.

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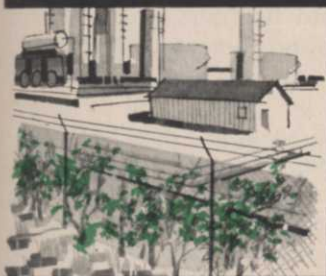
THE PROBLEM:
Hard-to-kill perennials
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THE ANSWER:
Efficient, long-term control of
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THE ANSWER:
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weed killers provides effective,
low-cost control of weeds and
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THE PROBLEM:
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THE ANSWER:
Easier control of noxious weeds
than ever before with TRYBEN®
200 weed killer. Also
controls some woody plants.



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Undesirable growth of
brush on plant sites,
roadsides, drainage
ditches, rights-of-ways.

THE ANSWER:
Economical control of brush with
non-volatile, AMMATE® X
or with DYBAR® fenuron weed
and brush killer.



Only a few examples of the type of situations that mean opportunity for you are shown above. Product descriptions are necessarily brief, too—each of these Du Pont herbicides effectively control many other kinds of weeds or brush. For complete information mail the coupon to Du Pont today.

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New Turf Herbicides, Sessions for Applicators

On Varied Oregon Weed Program in Salem Nov. 5-6

"Good selective weed control should be an integral part of any turf management program," Norman Goetze, Extension Specialist, Corvallis, Oregon, asserted in his talk, "Weeds and Turf," at the Oregon Weed Conference, November 5-6. "Cultural management alone leaves much to be desired just as weed control alone does," he added.

The Oregon Weed Conference drew delegates from all Northwest states to the Marion Motor Hotel in Salem for the 13th annual 2-day get-together.

Specialist Goetze went on to list some of the newer turf chemicals and told how to use them to take advantage of selectivity factors. Some of these factors are: weed species, age, grass vigor, atmospheric conditions, soil composition, and moisture.

"Weeds must be treated in the proper growth stage, and turf should be adequately prepared," Goetze continued. He explained that knotweed is extremely susceptible to 2,4-D when it is young and emerging, but virtually resistant at flowering time.

"One day before treating young knotweed with 2,4-D, wet turf thoroughly. For most effective use of broadleaved killers, wind velocity should be low, preferred temperature is below 70 degrees, and the higher the humidity the better," Goetze explained.

The specialist from Oregon State University told the delegates that selectivity of soil-applied herbicides comes from the different rates at which young weed seedlings absorb the chemicals. Young weeds near the surface absorb massive doses of herbicide. Mature deeper grass roots absorb none.

Preemergence crabgrass materials are soil applied. "Applications to crabgrass-infested areas are most effective if made in late spring. For preemergence annual bluegrass control, apply herbicide in early fall," Goetze prescribed.

Goetze recommended dicamba (Banvel D) at 1/2 to 1 lb. per acre for control of 2,4-D-resistant broadleaves such as chickweed, red sorrel, English daisy, and clover. "This material is more hazardous around shrubs and ornamental trees than phenoxy compounds (2,4-D etc.). Applicators should avoid putting dicamba where it may be absorbed by woody plant roots," he continued.

To control speedwell, Goetze suggested 1 lb. of endothall per acre as the present recommendation. Endothall usually requires two applications. Speedwell is not controlled by 2,4-D or dicamba.

Tests show that annual bluegrass, a serious turf weed, can germinate any time of the year,

Goetze related. Western Oregon's temperature range permits year around germinating, but germination rate is fastest in the fall.

"Betasan is presently recommended for annual bluegrass control; it has a long residual and is not affected by variances in soil types," the extension expert explained. In tests, the only damage noted occurred when turf plots were subjected to prolonged flooding. This damage is unexplained.

Operators Talk Tools and PR

Commercial applicators had their turn on the program to explain to the nonindustry experts in attendance what their problems are.

One problem is a dearth of information on equipment use and maintenance. Earle Parker, Jr., Chem Spray Co., Dayton, Oregon, told listeners the problems of a ground commercial operator.

Parker feels that equipment should be constructed so it can be used to apply several different chemicals subsequently. With a single rig to apply his three most popular chemicals, Parker could save changeover time; his cost factor would be spread.

"We need better protective material for tank interiors," Parker continued. Chemicals vary in corrosiveness, but some



An Industry Symposium at the Oregon conference presented technical details of new chemicals from suppliers. Left to right are representatives: Richard Fossie (Amchem Products, Inc.); Kent Beckman (Upjohn Co.); Dewey Sheperd (Morton Chemical Co.); Donald Burgoyne (E.I. duPont de Nemours and Co.); Charles Storker (Elanco Products Co.); C. H. Palmer (Reichhold Chemicals, Inc.); and Clay Shelton (Stauffer Chemical Co.).

spray tank manufacturers apparently do not consider chemical corrosion when they make a tank.

"I need spray equipment that will withstand the rigors of continuous application," the commercial operator asserted. "To do a better job, I need ways to measure customer areas quickly and accurately. Specifications to govern pump speed, nozzle flow, and pressure variations would be helpful also."

Another operator concerned with residential jobs said that his problems are mainly homeowner attitudes about his service. Charles Seibold, Major Spray Service, Portland, Oregon, listed his three prime experiences.

"1. Homeowner asks for a crabgrass control estimate and has a chickweed infestation instead.

"2. Customer expects one-shot control of both broadleaf and grassy weeds.

"3. And, of course, the customer wants the results at the wrong time of the year, when his problem is at its worst. Our present chemical tools may or may not do the job on mature infestations.

"Solutions to these headaches will come when we are able to educate the public to our industry, the services we render, and the limitations of our services," Seibold predicted. "We have to keep on our toes and tactfully never accept a homeowner's diagnosis because it is seldom the basic answer."

Suppliers Describe Products

A feature of the Oregon Weed Conference called the Industry Symposium gave suppliers a chance to describe new chemicals and uses that applicators may take advantage of. The following discusses those which feature nonagricultural vegetation maintenance registrations.

"Grass seed growers in Oregon can use the recently registered Paraquat to control undesirable grasses and weeds when they establish new fields for commercial grass seed production," T. H. Schultz, the California Chemical

Company, Ortho Division, representative in Portland, told the Conference.

According to Schultz, nonvolatile Paraquat kills weeds by contact and local systemic action. Further, it is inactivated by soil contact and seed may be planted immediately after Paraquat application.

L. E. Warren, Dow Chemical Company agent from Davis, California, described Tordon herbicide. Tordon is designed for woody plant control on rights-of-way. Also, both water-sprayable and granular forms will control perennial broadleaf weeds, he said.

Warren told how Tordon works. "The herbicide is absorbed by both plant leaves and roots. It's translocated to plant growth points. Action is exhibited by cupped leaves, rolled leaf margins, and twisted new shoots. Tordon symptoms are slow to appear despite quick movement inside plants, but it is quite residual in the soil, lasting from a few months to over a year."

Treflan is a preemergence herbicide, which, according to Charles H. Starker, Elanco Products Company, Portland, provides residual weed control against annual grasses and broadleaved weeds. Treflan kills them as they germinate; it is not effective on mature plants.

Treflan is chemically called trifluralin. Starker said Treflan is useful for weed control in lining out ornamental nursery stock. "The chemical must be incorporated into the soil, but once in the soil, it is adsorbed by soil particles and is resistant to leaching," the Elanco rep stated. Single-season control is provided because microbial soil organisms eventually break Treflan down.

Geigy Agricultural Chemicals' Portland man, Vern Neilson, described Prometryne 80 W, recently registered in Oregon only for preplant weed control on bluegrass seed farms. Neilson said Prometryne 80 W controls such grassy weeds as cheatgrass and rattail fescue. This herbicide is designed for use after harvest and burning of old crop residues.

Neilson advised users to apply it after the first post-harvest irrigation when weeds begin to sprout. The company then prescribes tillage for proper herbicide penetration into the soil.

Wide-Spectrum Chemicals Aired

D. L. Shepherd, Los Altos, Calif., agent for Morton Chemical Company, explained the mode of action of Mecopex, Morton's potassium salt formulation of MCPP.

"Mecopex, as such, is a weak herbicide," Shepherd began. "Once absorbed through leaves and translocated to roots, enzymes convert the MCPP to MCPA, an effective herbicide. Since grasses cannot make this conversion to MCPA, they are not generally harmed."

Shepherd explained that Mecopex has a narrow spectrum of action which selectively controls formerly hard-to-kill species like clover, chickweed, knotweed, ground sorrel, narrow-leaf plantain, and spotted spurge, among others.

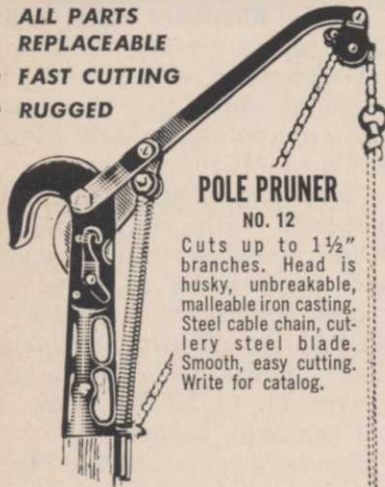
To overcome this narrow selectivity, Shepherd revealed that Morton plans to market early in 1965 a special combination of MCPP and 2,4-D to give control of common broadleaf weeds, too.

Portland's Pittsburgh Plate Glass Company office sent W. Ed Albeke to the Conference in Salem to tell about his company's new registration on PPG's carbamate herbicide, IPC. Researchers have combined IPC with 2,4-D and designed it to control both grassy and broadleaf weeds in fall-prepared specialty grass seedbeds. Albeke said application of this combination to seedbeds in late November will kill fall- and winter-germinating weeds. Specialty seeds are planted early in spring. Albeke indicated that IPC plus 2,4-D is especially useful the first year of specialty seed field planting. "Phenoxy-carbamate combinations show promise for weed control around ornamentals, among other uses," he added.

Clay Shelton introduced Betasan, Stauffer Chemical Company's new selective turf crabgrass and annual bluegrass control herbicide. Shelton repre-

Professional Tree Pruners

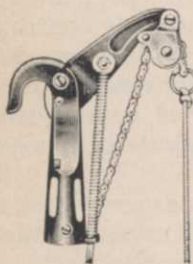
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sents Stauffer's Portland office.

Betasan is applied at 12½ lbs. per acre. Established lawn grasses, including broadleaved dichondra, are tolerant of Betasan at rates as high as 30 to 50 pounds per acre, Shelton disclosed. Betasan is said to have a 5-month residual effect. Some ornamentals, listed on the label, are also tolerant to Betasan.

"Betasan is not a very toxic material. Oral and dermal toxicities are low; it is not regarded as a poisonous substance under current USDA regulations," Shelton stated.

Casoron, Thompson-Hayward's recently discovered herbicide, was described for the annual Conference by James H. Hughes of T-H's Kansas City office.

Among many new registrations, Casoron may be used to control perennial, annual broadleaved, and grassy weeds in nursery stock (ornamental and fruit). Other recent approvals include weed control around nonbearing fruit trees, in shelterbelts, and forest plantings. Hughes says that Casoron will control "tough" weeds such as horsetail, nutgrass, sorrel, and quackgrass.

Representatives N. H. Shorey, V. W. Woestemeyer, and R. F. Crawford of the U. S. Borax and Chemical Corp. office in Portland introduced three herbicides for nonselective weed control.

Monobor-Chlorate Granular D is a combination product containing sodium metaborate, sodium chlorate, and diuron. It is designed to be applied dry for full season control of "tough" non-crop weeds, the representatives stated. This formulation has sufficient water solubility to be applied in a spray solution also. Monobor-Chlorate Granular D combines rapid initial action and stand reduction with residual activity, the Borax agents claim.

A second Borax product presented was Borocil, a combination of borate compounds and bromacil. This granular formulation is said to be useful for nonselective perennial grass control on noncrop land.

A nonselective emulsifiable
(Continued on page 34)

Meeting Dates



New York State Arborists Assn. Winter Meeting, Statler Hotel, Ithaca, Jan. 17-19.

Kentucky Nurserymen's Assn. Meeting, Kentucky Hotel, Louisville, Jan. 17-20.

Oregon Association of Nurserymen, 32nd Annual Meeting, Marion Motor Hotel, Salem, Jan. 19-21.

17th Annual California Weed Conference, Hacienda Motel, Fresno, Jan. 19-21.

Southern Weed Conference, Annual Meeting, Hotel Adolphus, Dallas, Tex., Jan. 19-21.

Associated Landscape Contractors of America, Annual Convention, International Inn, Tampa, Fla., Jan. 20-23.

Kansas Arborists Assn. Annual Dinner and Meeting, Warehouse Hotel, Manhattan, Jan. 21.

Kansas State Shade Tree Conference, Umberger Hall, K.S.U., Manhattan, Jan. 21-22.

New Jersey Association of Nurserymen, Annual Winter Meeting, Princeton Inn, Princeton, Jan. 21-22.

Washington State Nurserymen's Assn. Winter Meeting, Hilton Inn, Seattle, Jan. 25-26.

Ohio Nurserymen's Assn. Annual Meeting, Columbus Plaza, Columbus, Jan. 25-28.

Oregon State University Ornamentals Short Course, Corvallis, Feb. 1-3.

New England Nurserymen's Assn. Annual Meeting, Hotel Kenmore, Boston, Mass., Feb. 2-4.

International Shade Tree Conference, Midwest Chapter, Annual Convention, Pick-Congress Hotel, Chicago, Feb. 3-5.

35th International Turf-Grass Conference and Show, Sheraton-Cleveland Hotel, Cleveland, O., Feb. 7-12.

Michigan Association of Nurserymen, Annual Meeting, Pantlind Hotel, Grand Rapids, Feb. 9-11.

Aquatic Weed Control Society Annual Meeting, LaSalle Hotel, Chicago, Ill., Feb. 11-12.

National Arborists Association Winter Meeting, Guy Lombardo's Port-O-Call Inn, Tierra Verde, Florida, Feb. 14-16.

International Shade Tree Conference, Canadian Chapter, 16th Annual Meeting, Chateau Frontenac Hotel, Quebec City, Feb. 18-19.

International Shade Tree Conference, Southern Chapter, Meeting, Francis Scott Key Hotel, Frederick, Md., Feb. 21-23.

Turf Industry Second Largest in State, Colo. Turfmen Hear at 11th Conference

More than 100 turf specialists, attending the 11th annual Rocky Mountain Regional Turfgrass Conference, Oct. 5-7, heard Arthur G. Rydstrom predict that Colorado's booming turf industry will soon become the state's primary agricultural business. The three-day turf seminar met at the University of Colorado's Fort Collins campus.

"Turfgrass contributes an estimated \$300,000,000 annually to the state's economy," Rydstrom said, and added that if this estimate is accurate it places the turf industry second only to Colorado's cattle industry. This figure is based on a report by a Denver newspaper.

"Turfgrass is more important to more people in Colorado than any other cultivated plant," Rydstrom continued. All people are concerned with turfgrass, not only around their homes, but in public parks, grounds about large buildings, athletic fields, highway rights-of-way, golf courses, and other recreational areas."

Rydstrom, an Englewood investment consultant, presented figures based on a recent survey indicating that there are 150,000 acres of turfgrass in Colorado, not including campuses, school

grounds, or athletic fields. He further gave dollar-volume data based on 1963 turfgrass income in various segments of the industry.

Statewide Council Urged

To hasten the advance of the turf industry in Colorado, Charles M. Drage, Colorado State University extension horticulturist, remarked that the state and the turfgrass industry could mutually benefit with the establishment of a statewide horticultural council.

Drage went on to say that a horticultural council could coordinate the efforts of the many regional and specialized groups to produce more effective results. Such results would include a greater awareness of ornamental horticulture in the state, enhancing natural beauty and making Colorado a better place to live in.

"There are several thousand members in various horticultural organizations across the state," Drage said. "The problem is getting these people together with professional horticulturists and suppliers to act as a coordinated group."

Cooperative action, such as a statewide organization, Drage believes, would offer opportunity



From the large display of equipment and supplies demonstrated at the 11th annual Rocky Mountain Regional Turfgrass Conference, this lawn mower drew attention because it employs a unique vacuum operating principle. The rotary mower has no wheels, propels itself by "floating" one-quarter inch above the surface. Jerry Nelson, CSU junior in landscape design, demonstrates.

to carry out numerous programs and to project horticulture at school-level and in libraries, sponsor horticultural and garden clinics, and add effective support to legislation designed to improve horticultural standards.

Bentgrass Control Offered

Gene Chamberlain, CSU plant physiologist, explained that an ammonium hydroxide solution, containing 24% ammonia, has shown the most promise for control of bentgrass in lawns. The solution is made by saturating tap water with commercial anhydrous ammonia.

The treatment must be used with caution, Chamberlain warned, since the fumes drift easily and will burn the green growing parts of all plants. Treating in the fall, and reseeding the bluegrass seven days later, have proven most successful in CSU tests.

George Beach, CSU horticulturist, said the perfect bluegrass has yet to be developed. New varieties have advantages but often are less resistant to insects and diseases. Choice of a lawn grass should be determined on the basis of how the turf is to be used, the area and climatic conditions, the appearance desired, and the amount of care it will



A \$1,000 check to finance a turfgrass research study on the problem of winter dry-grass injury to grass, was presented by Ted Rupel (right) to A. M. Binkley (left), head of the horticulture department at Colorado State University. Willard Lighty (center), graduate horticulture student at CSU, will do the actual research work. Rupel is golf superintendent at Cherry Hills Country Club, Denver; the money is a donation by the Rocky Mountain Regional Turfgrass Association which held its annual meeting at CSU in October.

be given. There are 1,100 native and introduced grass species in the U.S., Beach concluded.

Calling for more planning to handle the growing population and the resulting demands on turfgrass in the years ahead, Frank C. Stewart, of Hampden Memorial Estates, Denver, warned "The world is going to fall in on us in the form of population—an unplanned-for population. We need more basic research and study on turf," Stewart continued. "We'll need information on turf diseases which will be greater problems as metropolitan areas grow."

"If our population is doubled by 1980, we must prepare to care for larger areas of turf at lower unit costs and with the utmost water conservation, Stewart added. He concluded by urging the West to plan for additional parks and green belts in the city and increased development of private campgrounds in the mountains.

Morrison Steel's Roly-House Can Solve Storage Problem

An all-steel building said to provide safe storage for chemicals, fuels, equipment, and for other uses, is announced by Morrison Steel Products, Inc.

The prefabricated building can be quickly assembled with screw driver and pliers, Morrison says. All holes are predrilled and cadmium hardware is provided. The unit may be set up on the ground, but best results and protection

are attained if setup is made on a concrete slab floor.

Further details are available from Morrison Steel Products, Inc., by writing to P.O. Box 549, Buffalo, N. Y. 14240.

Mallinckrodt Has New Dead Spot and Crabgrass Controls

A new preventive control of spring dead spot in bermudagrass and a selective preemergence herbicide for crabgrass control is now available from Mallinckrodt Chemical Works. The products are named Spring-Bak and Pre-San, respectively.

Spring-Bak, a turf chemical for the prevention of spring dead spot, does its preventive work in the root-crown zones of the grass and is specially formulated to contain wetting and soil-penetrating agents. It is applied as a heavy spray after the chemical has been mixed with water.

Mallinckrodt reports that its new preemergence herbicide for crabgrass control is labeled for use with fine turf. Pre-San is also effective in control of goosegrass, poa annua, watergrass, lambsquarters, redroot, pigweed, shepherd's purse, and deadnettle for an entire season.

Pre-San, a liquid formulation, can be applied with standard spray equipment, the company says.

For complete details on these new products, interested readers may write to Industrial Chemicals Div., Mallinckrodt Chemical Works, St. Louis 47, Mo.

WTT Mailbox

Editorial Wins Nod

May I compliment you on your September editorial "Poor Judgment." This is a theme that needs to be repeated regularly.

Dr. Joseph E. Howland

Editor of *Lawn Care*
Scotts
New Canaan, Conn.

Liked Shade Tree Article

I want to take this opportunity to tell you how much we appreciated your August issue of *Weeds Trees and Turf* in which you feature shade tree problems.

We were particularly interested in the article on noninfectious tree diseases by Dr. Richard Campana.

We are looking forward to Part II of this series.

A. R. Kurtz

Chief, Division of Plant Industry
State Dept. of Agriculture
Madison, Wis.

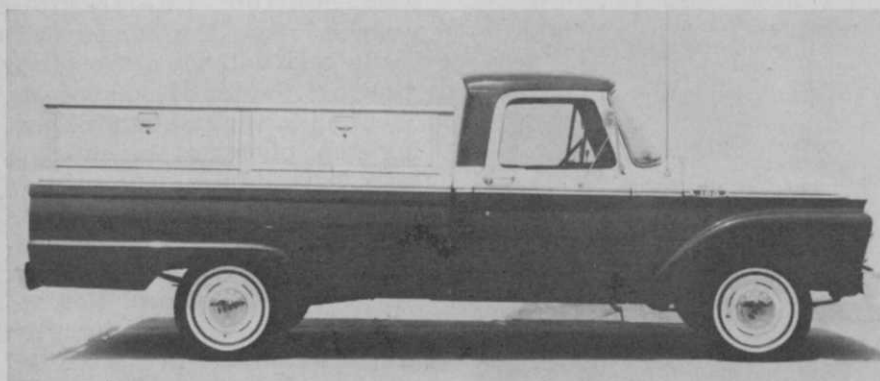
Part II will appear early in 1965.—Ed.

Reprints Appreciated

Your reprints from the October, November, and December, 1963, issues on the "Biology and Identification of Aquatic Weeds," their control and information on equipment, techniques, etc., are most appreciated. Three of the four copies were mailed to our district offices for their reference. I have retained one for my field notebook. It will prove, I'm sure, to be a valuable source of information, for in Southern California water availability is usually critical.

Joseph P. Dion

Deputy Agricultural Commissioner
Dept. of Agriculture
San Diego, Calif.



Mount 'em yourself tool boxes, in sizes to fit all 1/2- to 1 1/2-ton pickup or flat-bed trucks is the newest product from the Body Division, Morrison Steel Products, Inc., Buffalo, N. Y. Pre-drilled mounting brackets are provided. Rustproofed, the tool boxes are painted with a baked-on automotive paint to complement truck color. Key-locked, double-shelled doors have tamper-proof hinges to form level workshelf. Slam-catch handles are a standard feature. Free literature and prices are available by writing to Collins Associates, Inc., National Sales Representatives, 3318 Glenmore Ave., Cincinnati 11, Ohio.

Weeds Trees and Turf welcomes expressions of opinions from its readers. Send ideas and comments briefly as possible to Charles D. Webb, Editor, *Weeds Trees and Turf*, 1900 Euclid Ave., Cleveland, Ohio 44115.