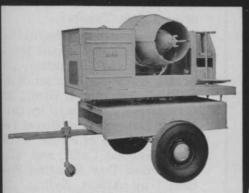
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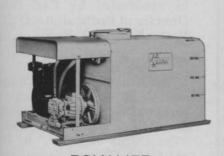
302 ROTOMIST "Big Daddy" of the mist-type sprayers. 40" fan, 60,000 c.f.m. air volume. Tackles the biggest, toughest jobs.



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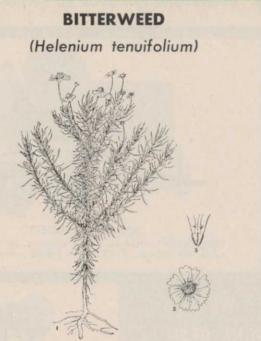
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Know Your Species



Bitterweed, found from Virginia to Kansas and southward to Florida and Texas, has spread as far north as Michigan and Massachusetts. An annual that reproduces by seeds, bitterweed is also known as yellow dog fennel and bitter sneezeweed, or simply, sneezeweed.

This plant grows in wastelands, in yards, along roadsides, and around buildings. In some areas, it is a common pasture plant and may cause livestock poisoning if grazed in the late summer and early fall when plants are in bloom. Bitterweed may also produce milk with a bitter flavor if grazed by cows.

The smooth, erect bitterweed stem grows from a short, branching taproot to a height of 4 to 30 inches, with many branches in the upper part (1). Numerous narrow, smooth leaves grow alternately from the stem and branches. Leaves are closely crowded.

Flower heads (2) are about $\frac{3}{4}$ inch in diameter. Several yellow ray flowers with 3-toothed tips surround a dome of yellow disk flowers.

Reddish-brown seeds (3) are wedge-shaped and hairy on the edges. Seeds have bristled scales at the top.

Good control of bitterweed usually results from the application of 1 pound of 2,4-D amine per acre before the weeds are 1 inch high. Older weeds in their bloom stage may require 2 or 3 applications, or use of 2 pounds of 2,4-D amine per acre, for control. Good control of young weeds may also be obtained from 2,4,5-T, MCPA, or silvex applied at the rate of 1 pound per acre.

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)



Dr. Lewis C. Chadwick, Columbus, Ohio, executive director of International Shade Tree Conference.

also planned for commercial arborists on Tuesday.

The municipal arboriculture program, arranged by the Municipal Arborists Committee, Carl Schiff, chairman, has scheduled talks on "Municipal Street and Shade Tree Problems," by Brian Fewer, Supervisor of Street Tree Planting, Dept. of Public Works, San Francisco, Calif.; and "High Production Tree Planting Practices," by Albert Ayling, City Forester, Warren, Mich. Municipal arborists have also set panel discussions on "Tree Evaluation," and "The Labor Situation: What Can Be Done About It," to be moderated by Carl Schiff, Director of Horticulture, Dept. of Parks, New York, N. Y.

Arborists to Hear Panel

The Utility Arborists Committee, C. E. Lee, chairman, has arranged a program of panels and talks, which will include "The Utility Arborist," by Harold Cody, General Superintendent, Distribution Div., Cleveland Electric Illuminating Co., Cleveland, Ohio. Municipal and utility arborists will get together for a dinner program, also planned for Tuesday.

Exhibits, a tour of the Holden Arboretum, and commercial equipment demonstrations are to highlight the ISTC program for Wednesday, Aug. 31.

A full slate of educational sessions is again set for Thursday, Sept. 1. Talks are to include:



Clarke W. Davis, executive secretary of National Arborist Assn., which will meet with ISTC.

"Biotic Approach to Insect Control," by John W. Peacock, shade tree entomologist, U. S. Forest Service, Delaware, Ohio; "Selected Trees for Street, Lawn, and Industrial Landscapes," by Roy Nordine, the Morton Arboretum, Lisle, Ill.; and "Personnel Management," to be analyzed by Hackett C. Wilson, Wilson Tree Co., Shelby, N. C. Educational sessions will close with F. L. Parr, Parr & Hanson Co., Hicksville, Long Island, N. Y., speaking on "Arboriculture: What's Ahead?"

Plan Entertainment for All

Final day of the '66 convention, Friday, Sept. 2, offers a post-convention tour for delegates to interesting shade tree sites in and around Cleveland. So that the meet will interest the entire family, a separate ladies' program, and a teenage and youth program have been arranged to include sightseeing and entertainment. Convention activities culminate with the annual banquet, set for 7:30 p.m. on Thursday.

John Michalko, Shade Tree Commissioner of Cleveland, is general chairman of the '66 gathering, which is expected to attract more than 1,000 treemen to "The Forest City." William P. Lanphear, III, vice president and treasurer, Forest City Tree Protection Co., Cleveland, is cochairman. Executive director of the International Shade Tree Conference is Dr. Lewis C. Chadwick of Columbus, Ohio.

New Turfgrass Guide Available from Penn. State

An attractively prepared 32page booklet on turfgrasses is now available from Pennsylvania State University.

Called "Turfgrass Guide for Lawns, Recreation Areas, and Roadsides," the publication describes 22 grasses and includes explanations of seed labeling requirements and mixture recommendations.

Special turfgrass problems

such as weed, insect, disease, moss, and algae control, are all discussed in the guide.

Other areas covered are soil testing, turf establishment and management, and turf renovation. Drawings of 24 common lawn weeds are on the booklet's rear cover.

Copies are available from Pennsylvania State University, Cooperative Extension Service, College of Agriculture, University Park, Pa. 16802.



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Invert Emulsion Use In Aquatic Weed Control Reported at Hyacinth Control Meeting

Use of invert emulsion formulations in aquatic weed control was a highlight topic at the sixth annual Hyacinth Control Society meeting, June 19-22, at Ramada Inn, Lakeland, Fla.

Dr. Lyle Weldon, of the Agriculture Research Service, U. S. Dept. of Agriculture, Ft. Lauderdale, Fla., related findings on use of invert emulsions to the gathering of aquatic weed controllers.

Delegates also heard a report on use and effectiveness of dichlobenil (Thompson-Hayward's Casoron). Manager of research and market development for the T-H Southeast region, James L. Taylor, presented data on the new aquatic herbicide.

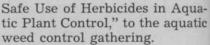
A special feature at the meeting was the program directed by Zeb Grant, HCS president. He showed aquatic weed control people a prize-winning film produced for Central and Southern Florida Flood Control District, entitled "Marisa And The Mermaid." The film depicts the District's battle against aquatic weeds in its 15,000 square mile area.

Other papers presented at the event related the importance of training for safe use of herbicides in aquatic plant control, and gave progress reports on current water weed control programs.

They included: "Practical Suggestions for A Large Scale Aquatic Weed Control Operation," by William E. Wunderlich, U. S. Army Corps of Engineers, New Orleans Dist. chief of aquatic growth control; "The Panama Canal Company's Aquatic Weed Control Program," by Julian S. Hearne, chief of the Dredge Div., Panama Canal Co.; and "A Survey of Herbicidal Application Methods in Southeastern U. S.," by John W. Woods, chief of the Fisheries Div., Georgia Game and Fresh Water Fish Commission.

Another top-interest paper presented during the 4-day session offered delegates an opportunity to look at the projected Army Corps of Engineers water weed control program.

"Future of The Aquatic Weed Control Program of The Army Corps of Engineers," was the title of a paper given by Harold R. Blakey, office of the Chief of Engineers, Washington, D. C. Charles Zeigler, Chief of Aquatic Plant Control Section, Operations Div., Corps of Engineers, Jacksonville, Fla., presented a paper titled "Training for the



A proceedings of the entire meeting will be available from the Hyacinth Control Society, Inc., P.O. Box 1731, Tampa, Fla. 33601.

N. Mex. CAs Must Be Licensed, Versatile

A custom applicator in New Mexico is often expected to be a pilot, tractor driver, pest identifier, pesticide selection expert, equipment calibrator, safety engineer, public relations man, bookkeeper, bill collector, and friend.

New Mexico law requires an applicator to apply for a permit, file a surety bond guaranteeing he will answer for damages, and take a written examination. He is tested on regulations, safety, calibration, dosage determination, and recognition and treatment of pesticide poisoning. He is required to keep detailed records on each contract, including date, time, method of application, pesticide used, dosage, name and address of contracting party, owner, and location of area treated.

Gerald Nielsen, chief, plant industry division, State Department of Agriculture, New Mexico State University, University Park, N. Mex., says the New Mexico Pesticide Applicator's Law protects both customer and applicator from inexperienced applicators.

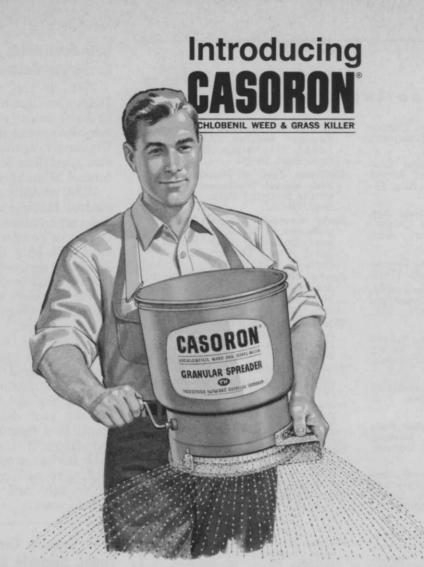


Overseeding bermuda turf with cool season grasses is explained by W. R. Thompson, Jr., at the Mississippi Turfgrass Conference, Mississippi State University, June 6-7. About 125 representatives from Mississippi and adjoining states toured research plots and saw new equipment demonstrated. Conference program focused on lowering turf maintenance costs with modern equipment and good management techniques. June 7 weed control sessions emphasized care in the use of herbicides to avoid damage to desirable turf. Fertilization was also discussed. Dr. R. E. Schmidt of Virginia Polytechnic Institute advised that, to avoid winter injury, bermudagrass should not be fertilized heavily with nitrogen in the fall. Conference proceedings may be obtained for \$2.00 by writing W. R. Thompson, Jr., Drawer AC, Mississippi State University, State College, Mississippi.

Utah U. Gets USDA Grant

A \$69,591 grant to Utah State University at Logan, has been awarded by the U. S. Department of Agriculture for basic research on structural modification of plants by herbicides.

Information developed in this study should help to improve weed control methods, says USDA, whose Agricultural Research Service will sponsor the 4-year research study. Dr. J. LaMar Anderson, plant physiologist of Utah State University's plant science department, is to direct the project.



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Meeting Dates

- Midwest Turf Field Days, Purdue University, West Lafayette, Ind., Aug. 8-9.
- International Horticultural Congress, University of Maryland, College Park, Aug. 15-20.
- Penn State Turfgrass Field Day, Pennsylvania State University, University Park, Aug. 17-18.
- Ohio Nurserymen's Assn., Summer Meeting, Dayton, Aug. 17-19.
- New England Nurserymen's Assn., Summer Meeting, Boulevard Nurseries, Newport, R.I., Aug. 18.
- Wisconsin Arborists Assn., Summer Meeting, Tyrolean Town House Motel, Milwaukee, Aug. 18-19.
- Wisconsin Park and Recreation Assn., Summer Meeting, Fish Creek, Aug. 18–19.
- American Phytopathological Society, 58th Annual Meeting, Denver Hilton Hotel, Denver, Colo., Aug. 20-24.
- Texas Assn. of Nurserymen, Annual Convention, Nursery and Garden Supply Show, Dallas Memorial Auditorium, Dallas, Aug. 21-24.
- American Society of Agronomy, Crop Science Society of America, Soil Science Society of America, Joint Annual Meeting, Oklahoma State University, Stillwater, Aug. 21-26.
- Hawaiian Turtgrass Management Conference, University of Hawaii, Honolulu, Aug. 25-26.
- Penna. Grassland Council, Materiels Handling Field Day, John Rodgers (Plum Bottom) Farm, Belleville, Aug. 26.
- International Shade Tree Conference, 42nd Annual Convention, Sheraton-Cleveland Hotel, Cleveland, Ohio, Aug. 28-Sept. 2.
- Alabama-N. W. Florida Turfgrass Assn. Annual Meeting, Auburn University, Auburn, Ala., Sept. 8-9.
- Illinois Turfgrass Field Day, University of Illinois, Urbana, Sept. 9.
- Tennessee Nurserymen's Assn., Kentucky Nurserymen's Assn., Joint Convention, Mountain View Hotel, Gatlinburg, Tenn., Sept. 11-13.
- Mississippi Turfgrass Assn., Annual Fall Meeting, Jackson Country Club, Jackson, Sept. 13.
- Northern Michigan Turfgrass Conference, Traverse City Country Club, Traverse City, Sept. 13.



- Northwest Nurserymen's Indian Summer Session, Salishan Lodge, Gleneden Beach, Ore., Sept. 16-18.
- California Assn. of Nurserymen, 56th Annual Convention, Yosemite National Park, Calif., Sept. 20-22.
- Rocky Mountain Regional Turfgrass Assn., 12th Annual Equipment Exposition, City Park, 23rd Ave., Denver, Colo., Sept. 21.
- Pacific Northwest Spraymen's Assn. Spray-O-Rama, Thunderbird Motel, Portland, Oregon, Sept. 23-24.
- Oklahoma Nurserymen's Assn., Annual Convention, Western Hills Lodge, Wagoner, Sept. 26-27.
- Arizona Nurserymen's Assn., Annual Convention, Nogales, Sept. 26-27.
- Missouri Valley Turfgrass Assn., Annual Meeting, University of Missouri, Columbia, Sept. 28-29.
- Ohio 25th Short Course on Roadside Development, Departments of State Bldg., Columbus, Oct. 3-7.
- University of Florida 14th Annual Turfgrass Management Conference, Ramada Inn, Gainesville, Oct. 4-6.
- National Recreation and Park Assn. Congress, Washington-Hilton Hotel, Washington, D.C., Oct. 9-13.
- National Conference on State Parks, 46th Annual Meeting, Kentucky Dam Village State Park, Ky., Oct. 16-21.
- National Weed Committee of Canada, Eastern Section, Research Station, Canada Agriculture, Kentville, Nova Scotia, Nov. 1-3.
- Horticultural Spraymen's Assn. of Florida, Annual Convention, Pier 66 Hotel, Fort Lauderdale, Nov. 3-5.
- New Jersey Federation of Shade Tree Commissions, Annual Meeting, Haddon Hall Hotel, Atlantic City, Nov. 13-15.
- Nebraska Association of Nurserymen, Annual Convention, Cornhusker Hotel, Lincoln, Nov. 14-15.
- National Weed Committee of Canada, Western Section, Research Station, Canada Agriculture, Brandon, Manitoba, Nov. 29-Dec. 1.
- Illinois Turfgrass Conference, University of Illinois, Urbana, Dec. 1-2.
- Minnesota Nurserymen's Assn., 40th Annual Convention, Curtis Hotel, Minneapolis, Dec. 5-6.
- North Central Weed Control Conference, Broadview Hotel, Wichita, Kans., Dec. 5-7.

OSU Says DMA, AMA for Crabgrass Control

Two to six applications of DMA, disodium methyl arsenate, or AMA, amine methyl arsenate, are recommended by Ohio State University agricultural extension specialists for postemergent control of crabgrass.

DMA or AMA are also said to control foxtail, barnyard grass, and certain other annual grasses. Liquid or powder forms may be used, but only crabgrass areas should be sprayed, not the whole lawn. If soil is dry and temperatures are high, water the lawn thoroughly about two days before treatment.

During dry summers, crabgrass is more apt to be a problem on watered lawns than on unwatered lawns. Thoroughly wetting the soil will encourage healthy root development and result in a good stand of grass, but frequent light sprinkling only invites weeds and makes turf more susceptible to injury by drought and heat, the specialists warn.

Tree Topping Can Cause Fungi, Bacteria Decay

Remove trees from crowded stands instead of topping all the trees, Kansas State University extension landscape architect Jim Nighswonger recommends.

Unless special care is taken with topping, branches do not heal, and wood-rotting diseases frequently spread throughout the tree. Open wounds left by topping are avenues for entry of decay fungi and bacteria Nighswonger explains. Another unhealthy result of tree topping is growth of weak sprouts below topped stubs. They grow and gain in diameter and weight until they can be easily torn from the tree by wind.

When pruning is necessary, Nighswonger suggests that limbs should be cut as close as possible to the main branch or trunk. Flush pruning cuts are ideal, and will heal over quicker.

He reminds that protective tree paint should be applied to any pruning wound over 1½ inches in diameter.

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Maryland Turf Expert Advises Overseeding Now

Best time to overseed thin or bare spots, or to seed new lawn areas, is in late August or early September, according to turfgrass specialist, Dr. Elwyn Deal, of the Department of Agronomy, University of Maryland.

Under most Maryland conditions, Dr. Deal says, seeding a mixture of two or more grasses is better than using a single variety. The University lists the most widely adapted mixture in Maryland as 40% Kentucky bluegrass, 40% Merion bluegrass, and 20% creeping red fescue.

If a quick cover is necessary, Dr. Deal suggests 5% redtop or ryegrass may be added to the mixture, but he warns that mixtures containing more than 5% should be avoided. Tall fescue can be used in play areas and in other areas where heavy use makes a coarse-textured grass acceptable.

Further information is available in Maryland Extension Bulletin 171, "Lawn Care in Maryland;" Agronomy Mimeo #2, "Lawn Grass Seed Buying Guide;" and Extension Leaflet #38, "Lawn Management Guide." Address inquiries for copies of these bulletins to Cooperative Extension Service, University of Maryland, College of Agriculture, College Park, Md.

Mallinckrodt Turf Guide Out

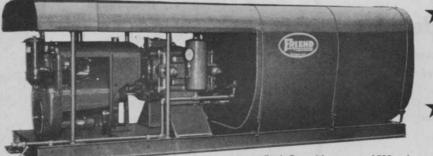
Control of 17 major turf diseases is discussed in the 48-page "Turf Pest Management Handbook," now available to turf managers upon request from Turf Products, Mallinckrodt Chemical Works, Box 5439, St. Louis, Mo. 63160.

With 20 color illustrations and updated turf disease and fungus identification keys, the booklet is said to have been prepared by leading turf authorities for guidance on many aspects of turf management.

Ohio Plans 25th Roadside Short Course, Oct. 3-7

Contractors and other professionals interested in roadside landscape design, construction, and maintenance are invited to attend the 25th annual Short Course on Roadside Development, Oct. 3-7. Sponsored by the Ohio Department of Highways and Ohio State University's Department of Landscape Architecture, the short course includes two days of meetings to be held at the Departments of State Building, in Columbus, Ohio. Contract seeding, promoting turf growth, and use of ureaform in the highway program are among subjects to be covered. Equipment displays and demonstrations are highlights of a two-day field trip also planned. Additional information on the short course can be obtained from Wilbur J. Garmhausen, Chief Landscape Architect, Ohio Department of Highways, Columbus, O. 43215.





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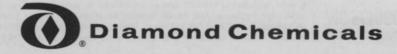


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Deep Growth, Herbicides Help Tree Root Control

Shade trees with shallow roots in lawn areas often cause aggravating problems in turf maintenance. Grass growth may be unsatisfactory because of competition for water and nutrients, sprouts may come up in the lawn, and the tree's roots may develop so close to the surface that they cause ridges in the lawn.

Tree roots tend to grow wherever soil conditions are most favorable; if lawns are kept sprinkled and fertilized, but the lower soil levels neglected, conditions are created that promote surface development of tree roots.

To encourage deeper root penetration the National Arborist Association suggests that fertilizer, and water as needed, be applied in the normal root zone some 15 to 20 inches below the soil surface.

Herbicidal chemicals may be used to advantage. The common weedkiller 2,4-D, may be sprayed on the foliage of the sprouts, or 2,4,5-T, a brush-killing compound, may be applied to the leaves and stems. Used at the proper rates, as given on the container label, these materials will not injure grass, but will kill the sprouts and usually a section of the roots.

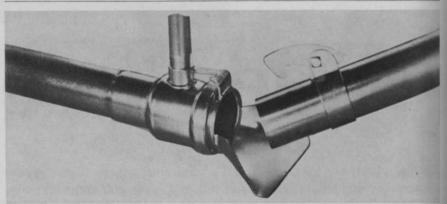
If the tree stands near the border of a lawn, a trench may be dug 10 to 12 inches deep and a barrier placed to prevent roots entering the turf area. The barrier may consist of several layers of asphalt roofing paper placed upright, or sheet aluminum may be used. Such barriers are long lasting and generally quite effective.

Rohm & Haas Booklet Describes Turf Diseases

A new 16-page booklet on turfgrass diseases is available from Rohm and Haas Co., developer of the dithiocarbamate fungicide, Fore. With full-color photos of typical disease symptoms, the publication describes 10 major turf diseases the company says can be controlled by Fore.

Titled "Fore in the Control of Turf Grass Diseases," it gives a preventative spray program for control of Helminthosporium melting out, Rhizoctonia brown patch, dollar spot, Pythium blight, Fusarium patch, Fusarium blight, red thread, copper spot, slime molds, rusts, and algae. Fore, said not to be injurious to grasses, has been tested by numerous experiment stations and golf courses in the eastern, central, and southern areas of the U. S. Fore as a control of certain ornamental diseases is also recommended.

For copies of the publication, AG-232, write the Agricultural and Sanitary Chemicals Dept., Rohm and Haas Co., Independence Mall West, Philadelphia, Pa., 19105.



Press-in steel couplers and fittings make it easy for turfmen to hook up a portable sprinkling system or temporary water transport line, according to John Bean. These fittings are available for use with 2" to 6" aluminum tubing. Features are said to include a bell-shaped coupler for greater angularity, tapered section on fittings to prevent cocking, one-piece construction of riser valves for economy, and sweep forming of elbows to reduce friction losses. Interested readers should request catalog W-362 when writing to the John Bean Division, FMC Corp., for complete details. Address Shur-Rane Dept., Box 9490, Lansing, Mich. 48909.