Weed-free turf

Dacthal effectively kills weeds and undesirable grasses in the ground before they sprout. Won't damage ornamentals and shrubs. Best weed control yet for golf-course and fairways, parks, rights-of-way, etc. Keep your turf weed-free with Dacthal applied professionally for best results. Diamond Chemicals, Diamond Alkali Company, 300 Union Commerce Building, Cleveland, Ohio 44115.
**STINGING NETTLE**  
*(Urtica dioica)*

Stinging nettle, sometimes called slender nettle or tall nettle, is a perennial reproducing by seeds and underground rootstocks. It originated in Europe and is now widespread in southern Canada and the North Central states of this country. Sometimes it may be found in the eastern United States.

It grows in damp, rich soil along roadsides, neglected yards, municipal parks, and near streams. Stinging nettle may cause welts and inflammation if touched by the skin. Bristly hairs (1) on the stems and leaves cause irritation.

Stems (5) are slightly branched near the top and may reach a height of 7 feet. The stems are round, slender, and rigid.

Leaves (4), 3 to 6 inches long, are dark green and opposite each other on the stem. They are 1/2 to 3 inches wide and have deeply serrated (saw-toothed) margins toward the tip. Leaves are sometimes rounded at the base.

Greenish flowers (6), without petals, are produced in clusters in the leaf axil, where leaves join the stem. Male (staminate) and female (pistillate) flowers are borne separately on the same plant. Only one yellow to grayish-tan seed (2) is produced by each female flower. Seeds are egg shaped, slightly rough, and about 1/32 inch (1 mm.) long.

Branched roots penetrate several feet deep. New plants are borne from joints of shallow rootstocks (3) which grow laterally from the crown.

Plants with similar common names in the genus *Solanum* are horse nettle (*S. carolinense*), and white horse nettle (*S. elaeagnifolium*); they have thorns on the leaves and stems, too. However, these species do not cause irritation like stinging nettle.

Control of stinging nettle by 2,4-D is good. Use 2/3 pound of a low volatile ester or 1 pound of 2,4-D amine per acre. Spot treatments are successful, but repeated applications may be necessary to kill all plants in patches of this weed. Follow directions on the herbicide label closely.

**Herban Gets USDA Label Clearance**

Herban, a selective herbicide produced by Hercules Inc., has just received label clearance from the U. S. Department of Agriculture for preemergence weed control in commercial culture of many standard nursery plants.

The clearance is for Herban’s use on ornamental shrubs, trees and perennial flowers such as Ajuga, Shasta daisy, chrysanthemums, Stonecrop, Creeping Thyme, periwinkle, English ivy, day lily, Japanese Andromeda, Japanese holly, *Osmanthus delavayi*, juniper, arborvitae, Euonymus, Burfordi holly, Ligustrum, *Magnolia*, Nandina, Pyracantha, *Camellia japonica*, *Camellia sasanqua*, and *Spiraea*. Spray application to foliage is not recommended for less tolerant species such as pine seedlings, Noxwood, *Hibiscus*, and rhododendron. Any plants not listed on the Herban label cannot be safely planted in areas treated with the chemical until five months later.

Weeds controlled by Herban in commercial nurseries include annual weeds and grasses such as barnyardgrass, goosegrass, brachiarial, annual chickweed, Colorado grass (*Harraha grass*), cocklebur, crabgrass, Florida pusley, foxtail, henbit, lambs-quarters, morningglory, panicum (summer and fall), pigweed, and purslane. Deep-germinating morningglory and cocklebur control requires good rainfall to move the herbicide to plant roots. Herban does not control perennial weeds such as trumpetvine, nutgrass, and johnsongrass.

A wettable powder, Herban can be either broadcast or applied as a band over the row. It can also be used on newly planted liners as soon as the soil settles. Recommended rates are 4 to 6 pounds per acre (broadcast). Rain or sprinkler irrigation is needed for proper root absorption.

For more information about availability of Herban write to Hercules Inc., Hercules Tower, Wilmington, Del. 19899.
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Wisconsin Turfmen Hear How Hardiness, Potash Content Affect Wintering Grasses

Metabolic changes determine a plant's ability to withstand temperature extremes and are the key to grass and plant wintering abilities, University of Wisconsin Agronomist, Dr. Dale Smith, told delegates at the recent Wisconsin Turfgrass Conference.

Nearly 200 persons attended the conference, conducted at Wisconsin Center for Adult Education, Madison, Wis. Also included in the two-day schedule was a presentation on soil potassium needs by Robert E. Wagner, Eastern Director, American Potash Institute, and a comparison of turfgrass qualities by Dr. Robert W. Schery, Director of The Lawn Institute, Marysville, Ohio.

Hardiness Ability Vital

With the effects of harsh winter weather on grass being a prime consideration in Wisconsin, Dr. Smith's explanation of the plant's natural changes in preparation for cold became the focal point of interest at the conference. But as the agronomist pointed out, winter kill and injury are problems not only in northern areas, but wherever temperatures drop below freezing for prolonged periods.

"Ability of plants to harden through metabolic changes which occur in protoplasm of the cells during autumn is a vital factor in the plant's ability to withstand winter weather," he explained.

Development of frost hardiness is influenced by many factors. Day length and temperature appear to be major climatic requirements; hardiness develops most rapidly under shortening days and decreasing temperature, Smith told the conference.

"Warm temperatures accompanied by abundant soil moisture, both conditions that favor growth, will retard development of hardiness even if days are short," he pointed out. "Day length probably triggers hardening in plants, and temperature determines the level of hardiness."

Cover Saves Northern Turf

Explaining that fluctuating temperatures in moderate climates can cause even more plant damage than cold north-state winters, Smith said that snow and soil give natural protection. "Leaving stubble to catch and hold snow is an important management practice in the North," he noted.

"Winter injury is primarily the result of 3 factors: low temperature, smothering, and desiccation," Smith said. Injury most frequently results from exposure to temperatures below freezing, which cause ice crystals to form in plant tissues. The plant's ability to tolerate this ice in its tissue is known as frost hardiness. Loss of frost hardiness can occur as the result of unseasonal warm periods, which cause the plant to use up carbohydrate reserves.

Ice Smothers Plants

Although snow cover protects vegetation, icy, nonporous cover can smother a plant to death, Smith acknowledged. Another type of plant injury comes from excessive loss of water by plant tissue or desiccation. This occurs commonly with plants that keep their leaves over winter. Moisture is lost from leaf surfaces and roots are unable to replace the moisture when the soil is frozen.

Late Cut Affects Hardiness

Dr. Smith warned turf managers that grass should never be cut during its hardening period in the autumn. Legumes, he said, are affected even more than grasses. His comments at the conference indicate that attempts to increase frost resistance by chemical spraying as yet have not been successful. The Wisconsin agronomist agreed with API speaker, Robert E. Wagner, that soil fertility is important to grass wintering ability. He noted that both nitro-
gen and potassium seem to have direct influence on hardiness.

K-N Help Grass Survive Cold

"Winter survival of grasses appears to be favored by a high potassium ratio in the soil, which increases soluble carbohydrate reserves in the grass roots," Wagner explained. He added that potassium is also important in reducing high temperature injury to grasses.

In an extensive discussion on turf species comparisons at the conference, Lawn Institute speaker Dr. Schery narrowed the field of suitable grass species for Wisconsin to Kentucky bluegrasses, fine fescues, and the bentgrasses.

"A very satisfactory, all-purpose blend for Wisconsin might combine two or three bluegrasses with a modicum of fine fescues, depending on the amount of shade and soil quality," Schery advises. He stressed that Merion Kentucky bluegrass is still considered the best bluegrass commercially available for well-maintained lawns.

Schery concluded his section of the program by reminding turfmen that seed selection must be made in consideration of local environmental variations which can call for seed mixtures for optimum results.

Agra Enters Herbicide Field

A new line of herbicides, including weedkillers, brush killers, and plant hormones are now available, with entry of Agra Industries Ltd., into the herbicide field.

Announcing the entry, company president Robert D. Sharp said the Agra line now includes a wide range of 2,4-D and 2,4,5-T herbicides produced by Thompson Chemicals Corp., St. Louis, Mo., and Los Angeles, Calif. Agra products to control annual, perennial, and general weeds and woody plants are to be sold under the Thompson Chemicals label.

For available literature write to Agra Industries Ltd., 355 Lexington Ave., New York, N. Y.
Ft. Lauderdale HSAF Convention, Nov. 2-5,

To Cover New Laws, Trends, Methods, Equipment

New laws and regulations affecting spraymen are subjects of an idea exchange to be lead by John Mulrennan, Florida Board of Health, and Dempsey Sapp, Florida Pest Control Commissioner—just one of the topics set for the Horticultural Spraymen’s Association of Florida Annual Convention, Nov. 2-5, at Pier 66 Motel in Ft. Lauderdale, Fla.

Starting the action-packed four-day program will be a Board of Directors dinner meeting 7 p.m. Wednesday, Nov. 2.

After Thursday morning registration, the convention talks open with welcoming remarks to the afternoon session by Larry Nipp, HSAF president, and Craig Anderson of The Professional Sprayers, Inc., Ft. Lauderdale. Speakers and topics they will cover in the afternoon include Dr. Gene Nutter and Ralph Jones: “New Trends in Our Industry,” and John Mulrennan with Dempsey Sapp set to discuss “New Laws and Regulations.” A poolside get-together and a Hole-in-One Golf Tournament, hosted by Sid Kirkpatrick, will top off the day’s activities.

Friday’s schedule offers an informative series of lawn care discussions during the morning session. Speeches programmed include “Available Lawn Grasses; Their Characteristics and Problems,” by lawn expert Ralph White, Jr., general manager, Ousley sod Co.; “Renovation, Aerializing, Verti-cutting of Lawns,” by Lew Watson, Associate County Agent, Broward County, Fla.; and “Lawn Maintenance Equipment, and its Practical Uses,” by Art Griffes, Ft. Lauderdale.

Weeds, fungus, and fertilizer forum discussions by Florida plant experts, Drs. Burt, Cabler, Edwardo, Border, Kerr, and Freeman will offer delegates new information Friday afternoon. After the forum a business meeting is scheduled and officer elections will take place.

The convention banquet is set for 8 p.m. Friday evening.

An equipment demonstration will be another feature of this year’s HSAF meeting.

Eastern United States will be the central topic at the convention’s business meeting Saturday morning, Nov. 5.

Convention registration fee is $10, which includes the banquet. For reservations and more information write to Larry Nipp, American Power Spraying, 3675 S. W. 1st St., Ft. Lauderdale, Fla.

Dormant Hormone Research Continues

How can dormancy be speeded in plants? Withholding water and fertilizer helps bring about dormancy, but what could be a more effective method is now being developed, the U. S. Department of Agriculture reports.

Researchers have isolated and structurally identified a natural chemical in plants that makes them “grow-old” faster, or speeds leaf drop and other dormant functions, the USDA points out. This natural hormone-like chemical promotes dropping of leaves, flowers, and fruit in a process called abscission. Because of this role, the chemical has been named abscisin II by scientists of USDA’s Agricultural Research Service and the University of California.

Working to isolate abscisin II, researchers crystallized 1/316th of an ounce of the hormone from about 500 lbs. of cotton bolls, 4 to 7 days old. They then determined the structure of the compound by elemental analysis and by comparing it with known chemical compounds through mass magnetic-resonance comparisons. Currently researchers are attempting to synthesize the hormone.

Three major groups of plant hormones are now recognized: Auxins, gibberellins, and kinins. Abscisin II may be one of a fourth group of hormones that promote or accelerate abscission. The three known plant hormone groups are currently synthesized and are widely used in agriculture. Auxins, for example, kill weeds and promote rooting of cuttings. Gibberellins accelerate growth and flowering of trees and shrubs, and kinins are used to keep produce fresh.

AAN ’65 Plant Patent Directory Now Available

The only publication in existence which annually summarizes information on new plant patents has again been updated by the American Association of Nurserymen and is now available.

Announcing the availability, AAN president Martin W. Ursey points out that the 1965 Supplement to the Plant Patent Directory, not only gives patent information, but also shows the common name assigned to each new introduction.


Rugged grass hook is hand forged and shaped by eye from a single bar of steel. Blade is 1 1/4 inches wide and has an 11 1/2 inch cutting edge. For more information write to Witherby Products Div., John H. Graham & Co., Inc., 105 Duane St., New York, N. Y. 10008.
Check on Pests Before Using New Land for Nursery Stock

Nurserymen should check with their state and federal plant pest control officials before they set nursery stock out in new land areas, warns Greg Rohwer of the U. S. Department of Agriculture’s Plant Pest Control Division.

Should the land be infested with serious plant pests, nurserymen may have trouble moving nursery stock because of quarantine regulations designed to stop the spread of plant pests.

Failure to take proper precautions before planting nursery stock on land infested with a serious pest like the white-fringed beetle or European chafer could delay stock movement from this land for as long as a year, or more, until adequate control of these insects had been accomplished.

Rohwer goes on to say that there is no effective treatment procedure for some plant pests such as soybean cyst nematode, burrowing nematode, or the golden nematode, which would not damage nursery stock already planted.

It is recommended nurserymen contact state or federal plant pest control officials to learn whether or not land proposed for production is part of a quarantine area, and if it is actually infested with a soil-inhabiting pest. In either case, a certificate is required to move plants outside the quarantine area.

If land is infested, a quarantine official will provide information on what is required to move plants with a minimum of time and effort. This may include instructions to pre-treat the land with chemicals to kill the pests or to take other precautionary measures.

Pest control officials will also advise nurserymen on how to keep from spreading the infestation to other areas. The problem can also be multiplied by moving contaminated machinery from infested to noninfested land.

"Even if the nurseryman has to take a particular field out of cultivation, he’ll be ahead of the game knowing this before he plants," Rohwer concludes.

All-Weather Use Possible With "Big-A" Spreader

Big Goodyear Terra-Tires that "literally float over a field," even though rain might have softened the footing, are said to make the "Big-A" fertilizer spreader introduced by Rickel, Inc., an applicator for use under varied conditions.

The vehicle has a 60-foot sprayer swath and is self-propelled by a heavy-duty, industrial gasoline engine. Increasing fertilizing capacities more than

400% above conventional methods, it treats 60 acres an hour, Rickel claims. It can be adapted to spread liquid and dry fertilizing materials, lime, insecticides, and herbicides.

Serious erosion problems caused by narrow tires in soft soil are eliminated with balloon-size tires, the firm says.

Optional equipment on the vehicle includes a dry spreader box and a liquid tank, both of which are interchangeable and have large capacities. A metal cab is also available.

Field speed of the unit is 20 mph, and on roads it is capable of speeds up to 30 mph.

For complete details on the "Big-A" write, Rickel, Inc., Manufacturing Div., 1065 Board of Trade Bldg., 127 West 10th St., Kansas City, Mo.

Spike Disc design lawn and green aerator made by Harris Fabricating Co. has 8 10-inch discs to provide 16-inch width.

Handy Turf Aerator Devised

With spiking width of 16 inches, the recently introduced Harris lawn aerator is light (weighs 35 lbs.), maneuverable, and suited for lawn care where space is restricted. High carbon steel hardened and tempered discs, and all welded steel construction, give the spike aerator maximum strength and sod cutting characteristics. For further specifications on the Harris aerator, write, Harris Fabricating Co., 105 Duane St., New York, N.Y. 10008.
Bolens Debuts GK, Versatile “Snaky” Tractor
For Contract Mowing, Grounds Keeping Jobs

Contract applicators faced with mowing in and around closely spaced trees and bushes will want to investigate the new GK tractor introduced last month by Bolens.

Members of the trade press, hosted at a preview unveiling by golf champion Arnold Palmer, saw the GK 18-hp. frame-steering tractor fingertip maneuvered, serpentine-like, around ornamentals at the Milwaukee (Wis.) Country Club. Center-pivoted with power steering, a 2-cylinder Wisconsin engine power plant in the rear and up-front seating made the unit about as easy to handle as a sturdy motor scooter. Weighing 1,530 lbs., without attachments, it is the largest tractor in the Bolens line.

The new front-wheel drive unit has a 3-speed transmission coupled with a high/low range selector to provide 6 speeds forward from ¾ to 10 mph. A direct-drive takeoff shaft powers attachments which can be quickly locked in and secured with hitch pins.

Both front- and rear-mounted attachments are available, including the new front-end, flexible, 4-blade, 72-inch rotary mower with retractable wing sections. Bolens says this can cut 7.28 acres per hour at top speed and 1.46 acres per hour at 2 mph. With the two 15” retractable extension wings, that are easily lifted and automatically disengaged, the GK mower will cut a wide 72” swath or smaller 57” or 42” swaths. It will also turn and trim in a small 24” inside cutting radius. The hinged wings make the GK into a 6’ mower that follows and hugs the ground contour through a strong downpressure spring which can be disengaged for lighter mowing. Blades of each section overlap to prevent streaking, and there are adjustments to 5 mowing heights from 1½” to 5”.

A built-in shock absorber protects gears boxes in case the user hits ground obstructions.

Presently available attachments, in addition to the rotary mower, include a snowplow-grader blade, a snowester with cab, and dump cart. Other accessories to be added soon include a thatcher, sickle, broom, vacuum, and loader.

The GK tractor can be fitted with soft, specially developed Goodyear Terra-Grip tires to travel lightly on turf, said to leave only “pigeon tracks” that soon disappear.

In addition to power steering, the Bolens GK has, as standard equipment, a hydraulic lift system, electric starting, and an 8-gal. fuel tank.

For more information and price of the GK, write Don L. Boldt, Industrial Products Mgr., Bolens Div., FMC Corp., Port Washington, Wis. 53074.

Corrosion-Resistant Seal Added to Universal Pump

A special Viton-stainless seal, resistant to erosive or corrosive actions of a wide variety of chemical combinations is claimed to give the new Aquamaster F-2 by Universal Motor Co., a longer useful life.

Another feature adding to the durability of the new spray pump is its complete outside epoxy finish to protect engine, base, and pump from most chemical combinations.

Field tests conducted during 1965 showed no evidence of seal deterioration or shaft wear after lengthy exposure to all available liquid fertilizer combinations, the company reports.

The improved model retains basic overall design features of the standard unit. Weight is 64 lbs. and 1½- and 2-inch models provide capacities to 7200 GPH and will handle solid articles of ½-inch diameter.

New data sheets covering models powered by Clinton, Lauson, and Briggs & Stratton engines are available. Write Universal Motor Co., 1552 Harrison St., Oshkosh, Wis.
ISTC Cleveland Meet to Have Full Family Program, Too

While more than 1,000 tree-men gather in Cleveland, Ohio, for the 42nd International Shade Tree Conference, Aug. 28-Sept. 2, for a technically oriented program, there will be a full schedule of events for the children and wives that come along for what has grown to be a truly family affair.

Ladies will be treated to a boat cruise, garden party, instruction in flower arranging, an entertaining talk on grooming for charm, a visit to Cleveland's famous cultural garden center, time for shopping, plus joining the men for the Sunday hospitality hour and reception, attendance at a Cleveland Indians ballgame, and the grand banquet.

Children will be chaperoned and kept on the go with a whirlwind of activities that include a trip up the Cuyahoga River, a visit to Cedar Point on the lake—Disneyland of the Midwest—outdoor picnics, a tour of the fascinating Cleveland Museum of Natural History and Planetarium, and jukebox get togethers with coke refreshments.

Headquarters for the conference, that is to include over 50 exhibits of new equipment and more than a dozen educational booths, is the Cleveland Sheraton Hotel.

Convention slogan for the 6-day meeting is "Beautify With Trees." Details of the program are expected to be announced next month, including how delegates can win a $3,000 chipper.

Plant Pathologist Warns of Leaf, Stem, or Root Diseases

Serious disease problems can arise in ground-cover plants such as Myrtle, vinca, and Pachysandra unless proper maintenance programs are followed all through the season, warns R. E. Partyka, Ohio State University Extension plant pathologist.

Myrtle is attacked by two diseases: leaf-spot disease and Rhizoctonia stem-rot. Stem-rot can be severe to the plant. Pachysandra is troubled by a Volutella leaf-blight and Rhizoctonia stem-rot. Both diseases can cause considerable damage. Vinca or periwinkle are often attacked by a Phomopsis canker and dieback, Rhizoctonia root- and stem-rot, and several leaf-spotting fungi. Root- and stem-rot diseases can be identified by a general wilting and dying of the plants. Examination of stems and roots shows dead tissue on diseased plants.

Partyka recommends removal of over-crowded plants, and dead leaves and plants as the first control step. Then he suggests, soil should be drenched with Terraclor 75 W solution, using 1 tablespoon per gallon of water. This will control Rhizoctonia stem- and root-rots. He says 2 applications at 3-week intervals will often suffice, but additional applications may be necessary.

Control of leaf spots and Phomopsis die-back can be effected by spraying ready-made, fixed copper solution, 3 times at 2-week intervals, starting when new growth begins in the spring, advises the plant disease specialist. Fixed-copper (50% active) should be used at the rate of 2 tablespoons per gal. of water. Application should cover leaves and stems completely.
Sod Industry Mechanizations Debut at Rutgers, June 20-22

Three days of sod growing talks, equipment demonstrations, and field shows, including a sod problem clinic and a research tour, are scheduled at the Rutgers University, College of Agriculture and Environmental Science campus, New Brunswick, N. J., June 20-22. The program is sponsored by Rutgers in cooperation with the Cultivated Sod Association of New Jersey, Inc.

Arrangements for the events are under direction of Dr. Henry W. Indyk, Extension Specialist in Turfgrass Management, and CSANJ secretary.

Lawn and turfgrass products will be shown Monday, June 20. The newest and latest in all types of equipment for turf work and various products presently available for growing and maintaining attractive lawns and turfgrass areas will be exhibited.

Live exhibits of turfgrasses, weeds, insects and diseases are to be displayed. In addition, a clinic, staffed by a group of specialists, will stand ready to diagnose problems and answer questions.

The Turfgrass Research Field Day, usually conducted during August, will be held on June 21. Guided tours of the turfgrass research plots will be conducted periodically by the turfgrass research staff.

Turf Research Tour, June 22

Visitors will have opportunities to observe and discuss turfgrass research being conducted at Rutgers Wednesday morning, June 22. The tour of campus facilities is part of the all-day and evening Sod Producers Field Day. Particular emphasis will be placed on new turfgrass varieties in the breeding and selection program which constitutes a large segment of the research program at Rutgers.

Afternoon activities are to show mechanization advances in the production, cutting, and handling of sod. Featured will be field demonstrations of a land leveler, stone picker, soil fumigation, seeders, aerial and ground application of fertilizer, gang mowers, sod cutters, mechanical sod roller, palletization, and boom loaders. Plans include public demonstrations for the first time of the new and improved model of a self-propelled, hydraulically operated sod cutter, roller, palletizer combination developed by Princeton Turf Farms. Field demonstrations will be conducted on one

Lineup shows landscape experts who attended the University of Iowa Conference on Community Development for Parks and Recreation in Iowa City. Conference talks, March 18-19, covered grounds operations from landscaping to management. Pictured left to right are, Howard Orr, landscape architect, U. S. Forest Service; Miss Virginia Lee Cunningham, assistant executive director, Heart of the Hawkeye Council Campfire Girls; Dr. Orren Beaty, special assistant to Stewart Udall, Secretary of the Interior; Mrs. Verna Rensvold, midwest representative, National Recreation and Parks Association; Miss Geneva Allen, recreational therapist, Iowa Methodist Hospital, and William Griffith, regional manager, Deere and Co. Over 100 recreation personnel attended the Conference.