

was grass gain over the Dicotyledonous (broadleaf) plants.

The ecological encouragement of grass at the expense of broadleaf species (mostly regarded as weeds) is nothing new. McLeod's thesis at the University of Massachusetts some years ago showed similar changes in components as well as increase in total plant population, as a result of fertilization. In pasture and roadside maintenance it is well recognized that nitrogen favors the grass over the legumes. Other tests, such as those by Juska at Beltsville, demonstrate similar ecological management of lawn populations, including lesser incidence of weeds at high mowing as compared to low. But it is always dramatic to witness marked turf change from so simple a procedure as a single application of fertilizer. If one feeding can make the changes noted in the chart in one year, think what regular feeding (and bolster seeding with quality lawnseed) should be able to accomplish! There is no simpler and less expensive a technique for lawns.

American Sod Producers Launch Drive For Members

Sod growers are being asked to join their new national association group. Organized as the American Sod Producers Association this past summer at East Lansing, Mich., officers and board elected by the charter group have established rates for dues and classes for memberships. They are now soliciting memberships among growers and allied industries.

At a recent meeting at Chicago, the Board of Trustees directed George B. Hammond, Paint Valley Bluegrass Farms, Columbus, O., who is serving as acting secretary-treasurer, to contact growers and industry personnel.

Trustees agreed to continue grower membership dues at \$50 per year. Growers are eligible for Class A memberships. Material and equipment supplier dues were set at \$50 per year for Class B memberships. The \$50 rate will also apply for any company desiring to have more than one

executive participate in ASPA activities. Honor memberships will be accorded others, such as research people, who contribute to the industry.

First annual meeting for the Association will be held at San Francisco, Feb. 18-23. The group will meet in conjunction with the Golf Course Superintendents Association, as they have done in past years prior to formal organization of the grower association on a national basis. Dr. Elwyn Deal, University of Maryland agronomist, will be in charge of the special sod program which is set for Wednesday, Feb. 21, 1968.

When the group was formally organized July 11 as an association, Ben O. Warren, Warren's Turf Nursery, Palos Park, Ill., was elected president. Others elected at that time were: Robert Daymon, Emerald Valley Turf Nurseries, Howell, Mich., vice-president; Louis DeLea, Louis DeLea & Sons, East Northport, Long Island, N. Y., treasurer; Richard Horner, Horner Sod Farms, Wind Lake, Wis., secre-

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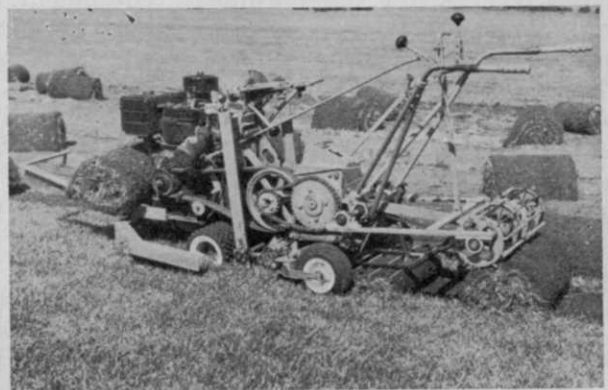
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tary; and Tobias Grether, Cal-Turf, Inc., Camarillo, Calif., J. E. Ousley, Sr., Ousley Sod Company, Pompano Beach, Fla., and Wiley Miner, Princeton Turf Farms, Inc., Cranbury, N. J. were elected as additional members of the 7-man board.

Following the formal organization July 11, the Association staged a national field day with demonstrations by practically all major producers of sod harvesting equipment on the following day. The field day was held at the Emerald Valley Turf Nurseries farm during the morning, with Robert Daymon serving as host, and at the Halmich Sod Nursery with Bill Johnson as host for the afternoon session. Both Daymon and Johnson serve as presidents of their respective farms. Wayne County, Mich., County Extension Agent Donald D. Juchartz helped the group by previously arranging with producers to have their equipment on hand.

Hammond, who has worked closely with the group since prior to its inception, is handling queries and receiving memberships. He can be reached at 71 E. State St., Columbus, O.

Use Care In Chemical Storage

Pesticides need to be stored in a separate building and marked accordingly. That's the thinking of John Lofgren, University of Minnesota entomologist. When such a building is not available, Lofgren suggests a securely locked area away from other storage.

Major Turfgrass Event At Cleveland, Dec. 11-13

Cleveland, O., will be the site of one of the major turfgrass conferences and shows to be staged in 1967. The Ohio Turfgrass Foundation is hosting the event which will be headquartered at the Sheraton-Cleveland Hotel, Dec. 11-13.

More than 80 manufacturers, formulators and distributors have purchased booth space. They are exhibiting all types of equipment and supplies. Scheduled for showing are spray equipment, mowers, fairway equipment, blowers, irrigation equipment, fertilizers, seeds, chemicals, sod and aerification equipment. Harry Murray, Jr., Warren's Turf Nursery, and president of the host group, reports that all equipment along with the program will be headquartered at the Sheraton-Cleveland Hotel.

On the program are industry and research personnel from throughout the nation. Handling assignments on irrigation and plant-water relationships will be Dr. James B. Beard, Michigan State University, East Lansing, Mich., Dr. James R. Watson, Toro Manufacturing Corporation, Minneapolis, Minn., Robert Rupar, Rainy Sprinkler Sales, Peoria, Ill., and Walter J. Wilkie, March Irrigation Co., Muskegon, Mich.

A general turfgrass session including data on rhizome formation in bluegrass, cutting labor costs in turf management, reducing care of ornamentals, and training for turfgrass students will be handled by Dr. Lowell

Moser, agronomist at the Ohio State University, Columbus, O., Tom Mascaro, president of the Pennsylvania Turfgrass Foundation and Westpoint Products Corp., Westpoint, Pa., and Fred K. Buscher, Ohio Extension Service, Medina, O.

Soil fertility and turfgrass fertilization sessions of the program will feature Bill Lyons, Lyons Den Golf Course, Canal Fulton, O., Dr. Eliot C. Roberts, University of Florida, Gainesville, Fla., and Dr. Donald J. Hoff, agronomist, O.S.U., Columbus, O.

Turfgrass pest assignments will be handled by Dr. Houston B. Couch, Virginia Polytechnic Institute, Blacksburg, Va., Dr. Edward W. Stroube, O.S.U. weed control specialist, Columbus, O., and Dr. William H. Daniel, Purdue University, Lafayette, Ind.

Dr. Robert Miller, executive-secretary of the host group, reports that plenty of hotel space is available in Cleveland and at the headquarters hotel. However, he does urge out-of-state guests to make arrangements directly with the Sheraton-Cleveland Hotel, Public Square, Cleveland, O., if they plan to stay at headquarters. Upwards of 1000 persons are expected to attend.

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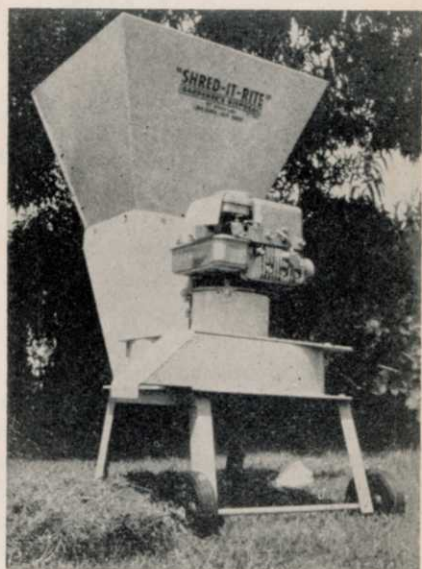
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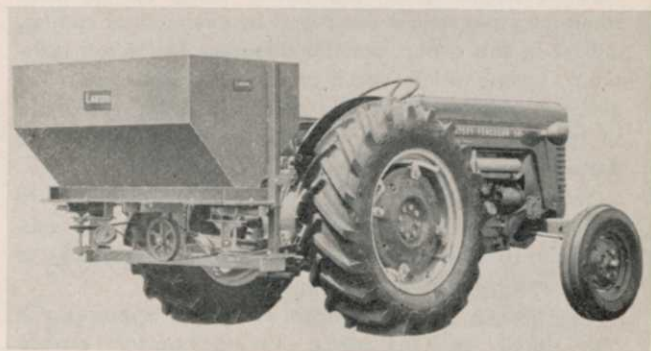
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BLACK LOCUST

(*Robinia pseudoacacia*)



Drawing from: Manual of the Trees of North America, by Charles S. Sargent, Dover Publications, Inc. Reprinted through permission of the publisher.

Prepared by J. H. Kirch, forester and horticulturist serving as Marketing Manager, Industrial Chemicals, for Amchem Products, Inc.

Black locust, sometimes known as common locust, yellow locust or white locust is a medium-sized tree usually 30 to 45 feet in height with a diameter of 1 to 1 1/2 feet. The genus *Robinia* comprises about 20 species of trees and shrubs native only to North America.

Originally, the range of black locust was from Central Pennsylvania south to Georgia and west to Iowa and Kansas. Now, due to wide-spread planting and naturalization, the species is found in most of the states east of the Rocky Mountains. Black locust is found on moist fertile soil especially on rich bottomlands, but it is also present on rocky and sterile mountain slopes. It is very common on abandoned strip mine soil and is a valued species for spoil bank planting.

To the right-of-way manager, it is a member of the "root suckering" group of trees, so named because of their ability to sprout prolifically along lateral roots when the main stem is destroyed by chemical or cutting. Others in this group are the allanthurus (*Ailanthus altissima*), sumac (*Rhus* spp.), persimmon (*Diospyras virginiana*) and sassafras (*Sassafras albidum*). No group of species has been more troublesome to control on the rights-of-way east of the Mississippi River.

The black locust is readily distinguished by its 8 to 14 inch pinnately compound leaves with 7 to 19 subopposite or alternate leaflets which are usually 1 1/2 to 2 inches long and 1/2 to 3/4 inches wide.

The flowers resemble those of a pea, appearing in May, usually after the leaves. They are perfect, cream-white, about one inch across and very fragrant. The flowers are borne on slender stalks about 1/2 inch long and are arranged in loose drooping racemes 4 to 5 inches long.

Whether a plant species is desirable or undesirable often depends on the situation in which it occurs. This is true of all the trees to be discussed in this series of articles on identification. For example, maple (*Acer rubrum*) is a useful ornamental in landscape plantings because of its early red flowers, pleasing growth habit, and spectacular autumn foliage coloring. It is a nuisance on the right-of-way because of its resistance to chemical treatment. Similar comments could be made about the other species to be described. They have ornamental, and economic value, but not on a utility right-of-way which must be kept clear of tall vegetation. Strong resistance to treatment makes it especially important that a few "problem" species be clearly recognized when they are encountered in clearance work. Otherwise there may be needless disappointment, and waste of time and material through inappropriate treatment. J. H. Kirch.

Late in the summer the 2 to 4 inch long fruit pods of black locust appear and often persist far into the winter. They usually contain 4 to 8 small dark brown mottled seeds.

Black locust is sometimes confused with honey locust (*Gleditsia triacanthos*), but the branched thorns 2 to 4 inches long along the bark and twigs and the slightly serrate margin of the leaf easily distinguish the honey locust.

In general, amine foliage sprays of 2,4-D plus 2,4,5-T at 2 pounds of each per 100 gallons of water have been more effective than low volatile esters applied at similar rates. This is probably because the sensitive leaflets are not as quickly destroyed by the amine sprays and some translocation can occur. Interestingly enough, low volume aerial sprays using invert emulsions of 2,4-D/2,4,5-T have given better control in many cases than high volume ground sprays. This, again, may be due to the fact that the leaflets remain alive several days longer from aerial sprays than ground applications.

Picloram, dicamba, 2,3,6-TBA and amitrole applied as foliage sprays have given excellent root kill of locust. Recently, combinations of picloram and 2,4-D, dicamba or 2,3,6-TBA and 2,4-D plus 2,4,5-T, or amitrole added to the water phase of water-in-oil invert emulsions applied from the air have given good control of locust and other root suckering species growing in association with it.

Pellets of picloram and fenuron have been good for spot treating of this species.

Classifieds

When answering ads where box number only is given, please address as follows: Box number, c/o Weeds Trees and Turf, 1900 Euclid Avenue, Cleveland, Ohio 44115.

Rates: "Position Wanted" 5c per word, minimum \$2.00. All other classifications, 10c per word, minimum \$2.00. All classified ads must be received by Publisher the 10th of the month preceding publication date and be accompanied by cash or money order covering full payment.

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Dow Range Tour

(from page 7)

tested in numerous types of applications and nationwide (for one test see "Right-of-Way Brush Control," page 16, WEEDS TREES AND TURF, June, 1967). Excellent control of broadleaved weeds was provided when using 2 quarts of Tordon 101 mixture in 10 or more gallons of total spray volume per acre, applied with Norbak as a particulating agent to prevent spray drift. Two applications at half this rate also showed effectiveness. The Tordon 101 mixture gave better control than 2,4-D of certain troublesome species such as Canada thistle, clovers, wild carrot and milkweed. A spray volume study showed equal weed control results from use of 10, 15, 20 or 25 gallons per acre. The 5-gallon rate was less effective.

On the tour, use of Tordon on gorse, a troublesome weed plant which was introduced to this country as a domestic ornament and then escaped into the wild, proved to be very effective. Tordon at high dosages will prevent vegetation growth for up to three years. However, at lesser dosages the gorse and other undesirable broadleaved weeds are killed and native grasses come back during the first year. Tordon, for reasons as yet unexplainable, actually stimulates growth of grass in treated areas. Lew Corbin of Dow, located at Midland, Michigan, and sales manager for agricultural and industrial bioproducts, reports that researchers have some theories which as yet they have not established as fact, at least for publication. Nevertheless, in this Oregon area roadside field test, and in other areas, grass cover was noticeably stimulated after Tordon treatment.

The attack on the problem of drift has been successful with development of Norbak. Dow has used a company-developed demonstration rig which applies specified amounts of Tordon 101 with Norbak to roadsides. A particulated spray of the mixture is applied from 2 separately controlled nozzles of the application rig. Off center nozzles are controlled by the applicator on the

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truck and can be targeted to very precise limits. Tests begun in 1964 are continuing.

Working closely with Dow has been the Bonneville Power Administration. On the tour, Fred Gross, right-of-way maintenance superintendent located at Portland, Oregon, discussed the value of chemicals to BPA. A few years back, Gross said, BPA was spending \$300 to \$500 per acre for mechanical brush control. Budget for the 56,000 acres of land beneath BPA's 10,000 miles of lines was almost one-half million dollars. Today, with chemicals, BPA is spending only \$35 to \$40 per acre yearly for control. Gross indicated that this would be the pattern of BPA for some time to come, especially in light of the fact that underground transmission lines are 8 to 10 times more costly. Further, Gross said, new technical advances are needed before lines can be placed underground on a practical basis.

Jack Warren of Dow stressed the need for safety, economy and approval for chemicals prior to marketing them. Special problems such as eliminating brown-out and still maintaining brush control need to be solved. Thus, a company in marketing a product must develop an entire system, including chemical, particulating agent, and the equipment to place it on target. In this latter case, Dow has developed an adjustable in-flight swath system for use on helicopters.

For December:

Annual Directory Issue

And Suppliers Guide

Insect Report

WTT's compilation of insect problems occurring in turfgrasses, trees, and ornamentals throughout the country.

Turf Insects

AN ARMORED SCALE

(*Odonaspis ruthae*)

Florida: All stages light to severe on Bermuda grass on golf courses at Clearwater and Largo, Pinellas County; controls needed.

RHODES-GRASS SCALE

(*Antonina graminis*)

Florida: All stages light to severe on St. Augustine grass, Bermuda grass, and crabgrass on golf courses at Clearwater and Largo, Pinellas County; controls needed.

A JAPANESE WEEVIL

(*Calomycterus setarius*)

Pennsylvania: Severely damaged 10 acres of crownvetch seedlings in Centre County; first record of economic damage in State.

Insects of Ornamentals

AZALEA CATERPILLAR

(*Datana major*)

Alabama: Larvae heavy on azaleas at homes in Escambia and Hale Counties; some shrubs partially defoliated.

ROSE LEAFHOPPER

(*Edwardsiana rosae*)

Colorado: Damaged 25 percent of rose foliage in Montrose County.

FLORIDA RED SCALE

(*Chrysomphalus aonidum*)

Florida: Severe on 120 coontie plants (*Zamia floridana*) in nursery at Tampa, Hillsborough County.

HEMISPHERICAL SCALE

(*Saissetia coffeae*)

Florida: Infested 120 coontie plants (*Zamia floridana*) in nursery at Tampa, Hillsborough County.

A THRIPS

(*Monilothrips kempii*)

California: Damage severe to ferns in store in Guerneville, Sonoma County.

Tree Insects

APHIDS

New Jersey: *Prociphilus imbricator* infesting Monmouth County beech; heavy on lower branches. *Lachnus salignus* common on willows in central counties. **Maryland:** *L. Salignus* heavy on weeping willows in Allegany and Prince Georges Counties. **Arkansas:** *Drepanaphis acerifoliae* active, up to 50 per leaf on maple in Fayetteville area, Washington Coun-

ty. **Utah:** *Periphylus lyropictus* increasing in Logan, Cache County.

ELM LEAF BEETLE

(*Pyrrhalta luteola*)

Oregon: Damage to elms more serious than in previous years, especially in eastern area. **Oklahoma:** Damage moderate to heavy on elms in Major and Woodward Counties. **Maryland:** Heavy on American elm at Harman, Anne Arundel County.

YELLOW-NECKED CATERPILLAR

(*Datana ministra*)

California: Larvae, probably this species, heavy on cottonwood trees at Hornbrook, Siskiyou County.

EUROPEAN PINE SHOOT MOTH

(*Rhyacionia buoliana*)

Oregon: On pines at Hermiston, McNary, and Umatilla in Umatilla County for new county record; last infestation in State in May.

SYCAMORE TUSSOCK MOTH

(*Halisodota harrisii*)

Oklahoma: Heavy on Payne County sycamores.

A TORTRICID MOTH

(*Archips rosana*)

New Hampshire: Common on Japanese flowering quince June 15 at Exeter, Rockingham County, for new State record.

ORANGE-STRIPED OAKWORM

(*Anisota senatoria*)

New Jersey: Heavy along State Highway 72 from junction of State Highway 539 to Fawn Lakes area in Ocean County.

A CONIFER SAWFLY

(*Zadiprion* sp.)

California: Defoliating pinyon pine in Crystal Lake area and on Sugar Pine Trail of Angeles National Forest.

INTRODUCED PINE SAWFLY

(*Diprion similis*)

New Hampshire: Larvae very abundant statewide on white pine; damage extensive on ornamental planting.

OYSTERSHELL SCALE

(*Lepidosaphes ulmi*)

California: Heavy; damaging maple trees at Mt. Hann, Lake County.

MIMOSA WEBWORM

(*Homadaula albizziae*)

Oklahoma: Defoliated 100 percent of mimosa trees at Wagoner, Wagoner County.

PINE WEBWORM

(*Tetralopha robustella*)

New Hampshire: Damaging young white pine plantings at Redstone, Carroll County.

Compiled from information furnished by the U. S. Department of Agriculture, university staffs, and WTT readers. Turf and tree specialists are urged to send reports of insect problems noted in their areas to: Insect Reports, WEEDS TREES AND TURF, 1900 Euclid Ave., Cleveland, Ohio 44115.

Trimnings

Well Fed Sea Cows. Sea cows are being used for a canal weed clearing field test by the Southern Florida Flood Control District. Five captured cows (manatees) have been fenced in a section of a weedy canal and their intake is being checked. This may well prove to be a workable project. But we hope chemical companies continue their research and those activities concerned with clearing new chemical compounds for aquatic weed control. We don't know much about sea cow numbers but we can't visualize them as being too much of a threat to the aquatic weed population.

* * *

Miracle Tree? A warning to Minnesota homeowners to ignore direct mail promotions for a "miracle" tree known as *Robinia pseudo-acacia* has been sounded by Extension Horticulturist Mrs. Jane McKinnon at the University of Minnesota. She reports it is actually the black locust known for decades in the state and used mostly in erosion control and for fence posts.

* * *

DED Moving South. Dutch elm disease is moving south according to the Arkansas State Plant Board. Survey crews this year found infected trees in 3 locations, south of previously infected areas, at Marianna, Marvell, and Fort Smith. However, DED did not take the jump predicted in previously infected areas. Based on infections in earlier years, the Plant Board expected 100 infected trees in the twin cities of Little Rock and North Little Rock. Good news is that only 4 trees were lost in '67.

* * *

Turf Business Even Big For Texans. A Texas A&M University research and education program is aimed at helping the current "big business" of turfgrass maintenance in the state. Maintenance costs of the industry are now estimated at \$211 million yearly. The University's new 3-point program consists of research, student instruction, and adult education in turfgrass.

* * *

Alaska Bound Sod. Sod can't be purchased in Alaska, so Walter O. Kraft ordered sod for the front lawn of his new home at Kodiak, Alaska, from Seattle. The 6000 square feet needed was shipped on a sea going vessel and kept cooled to 33°F for the 5-day trip.

* * *

Sod Harvester Is Perfected. Princeton Turf Farms sod harvester is in production. Harvesting capacity is about 10,000 feet per hour, utilizing 3 men. Practical maximum for 10-hour day is closer to 7000 feet per hour because of physical capacity of men to handle sod and pallets. Pallets carry 1500 to 4000 pounds of sod, depending on moisture conditions of the sod being harvested. In a visit to Princeton's plant last month we saw 10 harvesters under construction. Lynn Johnson, Princeton engineer, estimates present shop crew can turn out 10 machines in about 2 months.



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3. Repeat Readership

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