

... Now You Don't

By WILLIAM R. CLARK
Deputy Agricultural Commissioner
Weed and Vertebrate Pest Control
Visalia, Calif.



... with oil and Vapam or paraquat and Vapam.



... the same story.

Fortunately, Alligatorweed's small, white, sepaled flowers produce no viable seeds in the United States. Several hundred thousand acres have been taken over in the southern states with millions of dollars spent on research and controls.

Joint Eradication Effort

When the urgency of needed action was determined in 1966, the California Department of Agriculture (Weed and Vertebrate Pest Control), and the Tulare County Agricultural Commissioner's Office launched a concentrated effort to eradicate Alligatorweed within its new boundaries.

Surveys of more than 300 miles of waterways disclosed 72.6 acres (29 miles) of infested channels and a small amount creeping into irrigated cropland. In 1966 the first Eradication Agreement was formulated to conduct field trials and find a solution. Cooperation was very good from the beginning. Vince Schweers, Tulare County Farm Adviser, who first discovered the weed in Tulare County, and Bob Dunbar, Tulare County Agricultural Commissioner's Office, conducted trials with materials known to show promise in the southern states.

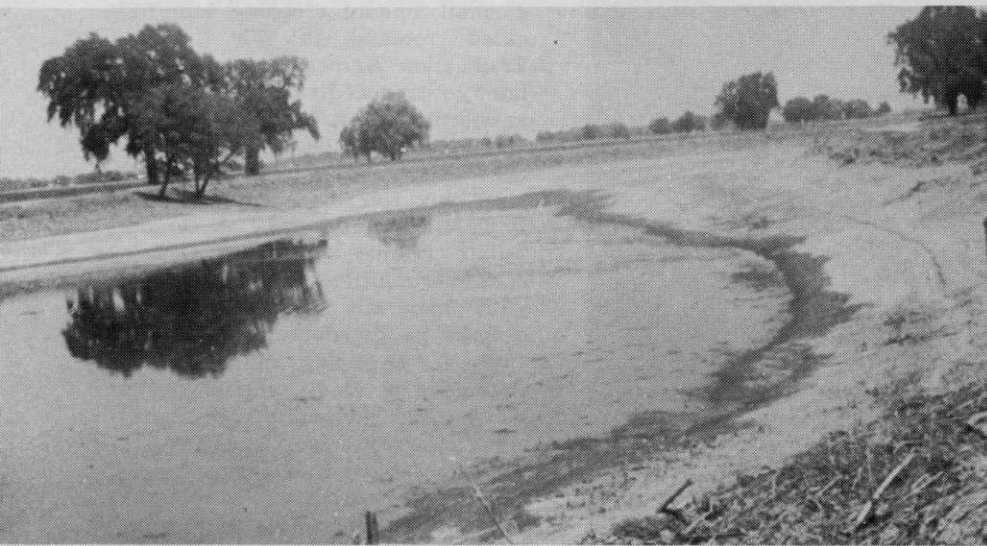
W. B. McHenry, University of California at Davis, started greenhouse evaluations with many herbicides. Murray Pryor and Les Hawthorn, California Department of Agriculture, and many other competent weed specialists also began eager test plotting.

The ditch companies, a water conservation district, ranchers, irrigation districts, and the cities of Visalia and Porterville built access roads, shifted water schedules and anything else needed to further enhance testing. Technical and field assistance was given by various chemical company representatives. T. C. Fuller, California Department of Agriculture staff botanist, contributed his time and knowledge.

Large-Scale Field Testing

More than 350 field test plots with various chemicals and combinations thereof have been applied. The soil sterilants were all investigated with sodium-chlorate at 1,200 pounds per acre showing the best results. Diuron at more than 100 pounds per acre resulted in yellowing of Alligatorweed. Most translocative materials were tried, amitrole, and dicamba looking fair.

Tarping with black polyethylene for 92 days reaching temperatures of 160 degrees only gave chlorotic whitening with recovery after re-



Crews spray a pond on the Miller and Mueller ranch near Visalia. Areas were staked in 200 sq. ft. plots to help assure rate application. Result: clean pond.

removal of the plastic. Growth regulators and fertilizers were looked into. Fumigants were encouraging. Methyl bromide under tarps worked well where there was no water in the root zones. Carbon bisulfide injections proved too hazardous because of flammability, and, like methyl bromide, proved too time consuming and ineffective on large scale operations.

Many adjuvants were tried in combinations and singly.

Successful Combination Found

The need for materials that would be safe to use in and on the waterways was always foremost in mind. Finally, Vapam or VPM and paraquat were used in combination as a foliar drench. Spray rates were one quart vapam, one pint paraquat, and eight ounces surfactant in 25 gallons of water per 100 square feet. This combination showed excellent results within a very short period

of time, the Vapam affecting root zones and paraquat the foliar portion. All agencies involved decided to begin eradication operations with this combination of materials, yet keep up investigations to improve the project. A deviation from label authorization was obtained for the use of the formulation.

In November 1967, county, state, and irrigation district spray crews began treatment in the three Porterville area waterways and three Visalia systems along with a pond on the Miller and Mueller Ranch in the Visalia area.

Commercial pest control operators were contracted to treat (under project supervision) the Miller and Mueller Ranch. This consisted of a 500-gallon nurse rig and two 500-gallon spray rigs with seven men. Areas were staked off into 100 square foot plots and rigs calibrated to spend five minutes per plot.

In heavily infested areas a mat

of foliage nearly two feet deep was encountered, penetration was slow and difficult. This prevented, in some cases, incomplete contact with all foliar portions of the plant and new plants formed from the nodes. Burning the top growth a few days after treatment reduced regrowth tremendously by destroying the nodes previously not harmed. Overall results were unbelievably successful.

Frost damages all foliar portions of Alligatorweed except the nodes. Tests conducted at the Bureau of Plant Pathology greenhouse at Ivanhoe showed new plant growth in four days from apparently frost-killed nodes. Paraquat and Vapam were applied at temperatures ranging from 30 degrees to 90 degrees effectively, although volatility and loss of gas was increased at higher temperatures. Optimum results are achieved from 65-75 degrees.

In 1968 the use of high emulsion-type weed oil was perfected as a substitute for paraquat. This resulted in even greater penetration of foliage and a substantial reduction in cost. The rate of materials was now one gallon weed oil, one quart Vapam, two ounces surfactant in 25 gallons water applied on 100 square feet.

Quarantine Regulation Obtained

The hazard of new infestations was reduced by obtaining from the Bureau of Plant Quarantine an "Alligatorweed Eradication Area" regulation. (Section 3960, Title 3, California Administrative Code). This regulation proclaimed the entire County of Tulare an area of eradication, making it possible to regulate movement of soil or other articles which may be exposed to or infested with Alligatorweed; also to conduct visual inspections and make repeated treatments on properties, water channels, and other places or things for Alligatorweed.

The vapam-oil spray plus burning gives control nearing 95%. The remaining regrowth is being retreated by spraying and in areas where penetration is difficult (steep banks and soil types), "pot holing" is employed. This is done by digging a basin, or loosening the soil around individual plants and filling with spray mixture. In some areas five pounds per acre diuron is added to the mix to control annual weeds, making it easier to find any regrowth.

The biggest problem at present is waiting for dry channels, as all treating has to be done when ditches are dried up.

Gypsy Moth Tree Damage Trebled Over Past Year

Gypsy moth defoliation of trees in northeastern woodlands totaled 260,000 acres this year, more than triple last year's defoliated acreage, reports the U. S. Department of Agriculture.

Officials of USDA's Agricultural Research Service are openly pessimistic about the possibility of keeping gypsy moths restricted to the presently infested areas in the northeast. Plant pest control officials explain that heavy gypsy moth populations are building up, and that the moths are spreading much more rapidly as a result. If allowed to spread into the commercial hardwood forests of the Allegheny, Appalachian, and Ozark Mountain regions, the moths could cause tremendous economic damage, officials warn.

Gypsy moth damage this year is concentrated in southeastern New York, including especially hard-hit Long Island, northern New Jersey,

southeastern Connecticut, and some scattered areas in Pennsylvania, according to plant pest officials.

In their caterpillar form, gypsy moths strip the leaves from forest, shade, and fruit trees, as well as ornamental shrubs. By defoliating forests, they increase fire and erosion hazards, adversely affect stream flow, reduce land and recreational values, and destroy wildlife habitats. Officials point out that a single defoliation has been known to kill white pine, spruce, and hemlock; two defoliations have been known to kill hardwoods.

Gypsy moths were imported into the United States in 1869 by a Medford, Mass., naturalist. Some escaped and eventually spread throughout New York, New Jersey, and Pennsylvania. Recently, male moths have been found deep into Delaware. Gypsy moth defoliation of trees has fluctuated over the years, but reached a high of almost 1½ million acres in 1953.

D. R. Shepherd, director of the ARS Plant Pest Control Division, said that the problem of gypsy moth

spread is compounded by persons unknowingly giving these pests a ride into new areas. He pointed out that gypsy moths can be spread long distances rapidly by the movement of timber and timber products, quarry products, nursery products, and by trailers and camping equipment.

The problem of campers giving gypsy moths a free ride was highlighted recently when a plant pest control inspector discovered gypsy moth egg masses at a number of camp sites in Connecticut. A trace-back of trailers that had left the camp sites after the start of the moths' egg laying season revealed that some of the trailers had carried gypsy moth egg masses as far away as Minnesota, Wisconsin, Virginia, Texas, and Florida. Plant pest inspectors destroyed the egg masses.

Shepherd said that this problem and others can be lessened if campers or visitors of gypsy moth infested areas check with a county agent or plant pest inspector to make sure they have complied with quarantine regulations designed to prevent the long distance spread of gypsy moths.

Industry People On the Move



The Davey Tree Expert Company, Kent, Ohio, has created and filled two new posts. T. A. Baer has been named general sales manager of tree care services, and T. L. Booth has been appointed general sales manager of utility services.

Baer will head all territorial sales activities in residential, institutional and government tree care service. Booth has charge of line clearance, chemical brush control, right-of-way maintenance and other utility services.

Baer, who joined the company in 1940, was appointed foreman in 1946 and general foreman of the St. Louis-Southern Illinois territory in 1951. In 1957 he became sales representative in the Louisville area, and transferred to company headquarters as assistant sales manager in 1966.

Booth joined the company in 1941, and was appointed foreman soon after attending the Davey Institute of Tree Service in 1948. In 1965, he was promoted to special assistant in the sales department of the home office.

* * *

Amchem Products, Inc., Ambler, Pa., has named Rodney M. Reeser sales representative, according to M. B. Turner, vice-president and general manager. Reeser, a member of the American Hereford Association, formerly was a branch manager trainee for Monsanto Company. He studied agriculture at Southern Illinois University.

Greenlife Products Company, West Point, Va., maker of pine bark base mulches, soil conditioners and fertilizers, has elected Edward F. Kelley president.

Kelley, an Amherst College graduate, holds a master's degree in business administration from Harvard. He joined Chesapeake Corp., Greenlife's parent company, as marketing research manager in 1960. When Greenlife started production in 1962, he was named its general manager, and has recently served as its vice-president.

* * *

Turf-Vac, Long Beach, Calif., announces the appointments of W. H. "Bill" Nolt as eastern district manager, and Henry White as manager of manufacturing.

Nolt will have charge of distributor development in Turf-Vac's eastern district, and will operate from the company's Worthington, Ohio, offices. Prior to joining Turf-Vac, he was associated with Rickel, Inc., of Kansas City, Mo., in the sale of agricultural equipment.

In his new position, White will direct manufacturing operations from the company's Long Beach headquarters. Before coming to Turf-Vac, White served as manager of production control with the American Pipe and Construction Company.

* * *

Morton Chemical Company, a subsidiary of Morton International, Inc., announces the addition of James C. Vlazny as research chemist at the company's Woodstock, Ill., laboratories.

Vlazny, who holds a doctorate degree from the University of Wisconsin, will specialize in research on organic chemicals with particular emphasis on compounds with pesticidal activity.

Before joining Morton Chemical, Vlazny was an assistant professor of chemistry at Virginia Military Institute.



Princeton Turf of KC

How Do You Run A Sod Farm In the City?

Like a Business

SOD PRODUCERS who know him well have good-naturedly accused William M. Latta of trying to run a sod farm at 90 miles an hour. They know his background as a charter pilot and crop duster and know also that his partner, Dean Scholes, is a pilot.

Customers and visitors might be easily convinced as well, upon noting that practically every piece of machinery rolls on airplane tires.

Perhaps the only relevance to sod farming of the 90 mph anecdote is that it is expressive of how fast Latta-Scholes, Inc., updates its operating techniques. Certainly it is indicative of how quick Bill Latta learned the business of growing cultivated turf.

Just a little more than five years ago, one of Latta's charter passengers had mentioned ownership of a sod farm. Latta's reply had been: "What's a sod farm?"

Among the factors that make Latta-Scholes, Inc., unique is the fact that both owners were successful businessmen before they were sod growers. Therefore, at the very beginning, they approached the growing of sod as a business as opposed

to "traditional farming" in which the product was different.

Location helps relate it to city business rather than country farming. Princeton Turf of Kansas City, as the business is more commonly known, is a sod farm that's within a city within cities.

That description is not a duplication error. Princeton Turf is situated along the banks of the Missouri River within the city limits of Riverside, Mo., which is surrounded by Kansas City, Mo., Kansas City, Kan., and Parkville, Mo. As the crow flies, it is fewer than three miles to the heart of this U. S. megalopolis of more than 1.2 million people.

In addition to the whole range of daily reminders that it is urban located, in a few years an interstate highway will slice off about 90 acres of the 600-acre farm.

Strict Business Principles

Dean Scholes pays particular attention to the business side of the operation. Cost-accounting is carried to a refined degree and reacted to religiously.

"We prepare a net worth and op-

erating statement every 30 days," said Scholes. "We analyze acres sold to acres cut, projecting our cost per acre when we sell 100% of it, 75%, or 50%."

Precise cost-accounting enables Princeton Turf to establish a uniform and consistent pricing policy. Customers in effect can set their unit price by their volume of purchases.

A cent per square yard discount is allowed as purchases reach a certain volume. The first penny comes at 3,000 square yards. Additional penny discounts come at 12,000, 25,000, 50,000, 75,000, 100,000 and 200,000.

"A customer's purchases in square yards during one year then determine his base price for the coming year," said Scholes.

"What we're trying to do is set up the farm and run it on sound business principles."

A Decade Earlier

Latta and Scholes probably would have listened with disbelief if they had been told a decade ago that in 1969 they would be selling Kentucky blue, Merion, Fylking, Windsor blue-



Dean Scholes and William Latta



grass and fescue mix, K-31 tall fescue, Penncross bent, Cohansey C-7, Meyer zoysia, Midway and Tifgreen bermudagrass.

Kansas Scholes would have been involved in feed milling machinery business, after the alfalfa dehydrating business, after serving as a pilot in the Air Transport Command during World War II.

In a couple of years, he would go to work for Princeton Turf, Cranbury, N. J., direct the first seeding of a farm at Centerville, Md., and in March of 1964 do the same in Kansas City. He and Bill Latta then purchased on Jan. 1, 1968, the Kansas City farm and one at Eagle Pass, Tex. The purchase agreement included retaining the Princeton Turf brand name.

Nebraskan Latta, a decade ago, was wrapped up in a highly successful charter flying service, Cessna dealership and equipment repair, and a crop dusting service. Operations were at Hastings and Grand Island. At one time he owned 13 airplanes.

He had learned to fly while attending college at Hastings. His aircraft business evolved out of a flying school he operated after World

War II. As far as he knows, he's the only individual the Air Force contracted with to teach ground school. All other contracts were with educational institutions.

Asking about a sod farm initiated the abrupt change in his career. What facilitated the change was being lucky, he said, of finding buyers "at the right price" of his various flying enterprises. He sold part in 1964 and the rest by 1968. In addition to his partnership in Latta-Scholes, he has an interest in Grassland Farms, Inc., at Hastings and a nursery at Scottsdale, Ariz.

Competition to Increase

Latta seems to have the knack of recognizing the birth of a new industry and of measuring its eventual growth. He was the second resident crop duster in Nebraska. He believes the turf industry "is about where aviation was when I got into it."

"Few people realize how large and important an industry it is," he said. "They don't realize, either, how much can be invested in growing sod. All they see is grass growing by itself."

Latta believes a "shake out" in

Almost all 600 acres of Princeton Turf of Kansas City is visible above. It's Missouri River bottomland within the city limits of Riverside, a KC suburb.

the industry will come eventually as the business of growing sod becomes more professional. The capital required to continue to mechanize and automate will be a strong factor.

It is easy to invest from \$600 to \$800 per acre in equipment, he said. Irrigation costs alone can run as high as \$400. In addition, there's premium land to pay for and expensive labor to hire. Princeton Turf of KC has a work force of 30.

Latta and Scholes figure to avoid being shaken out of the industry by strictly adhering to business principles and by learning to raise cultivated turf as scientifically as possible.

Farm Fertilizer-Mapped

"Our fertilizer program begins with a soil analysis," said Latta.

The total farm has been mapped and subdivided into four-acre increments. Seven soil samples were taken from each grid and a com-

Wade Stith of West Point Products Corp., and Latta inspect a field of Fylking bluegrass.



Princeton Turf of KC harvests sod with Ryan cutting and rolling equipment. An elevator loads bigger trucks.





Latta and Stith check the growth difference of grass planted conventionally (small clumps in rows) and grass planted with the use of the West Point Aerifier (pointing with left hand). His right hand rests on a strip left from the previous

posite determined as the basis for fertilization.

"All scientific data had indicated we didn't need potash and phosphorus. Then we asked the grass."

The asking comes in the form of plot experimentation with different rates and combinations of plant nutrients. "And we always accidentally on purpose miss a spot with our fertilizer to serve as a check."

"We're beginning to take plant tissue samples, hoping to learn quicker why one grass section looks better than another."

As standard procedure, nitrogen is applied three times in the fall and twice in the spring; herbiciding is done once in the fall and once in spring.

Final quality control is achieved with daily "grass patrols," said Latta, in which we "play doctor, operating with a curative philosophy. A total preventive program would be too expensive."

Five-Year Field History

This laboratory-precise technique of fertilizing is just a small, though important, example of the overall Latta-Scholes scientific approach.

A complete history of the 13 primary fields has been compiled since 1964. Everything that is done to the land is recorded. A clipboard for each field hangs in the office with date notations for such things as mowing, rainfall, crustbusting, fer-



harvest. The close-up picture shows the growth advantage that the grass achieved in growing out of the holes created by the Aerifier's spoon-like blades.

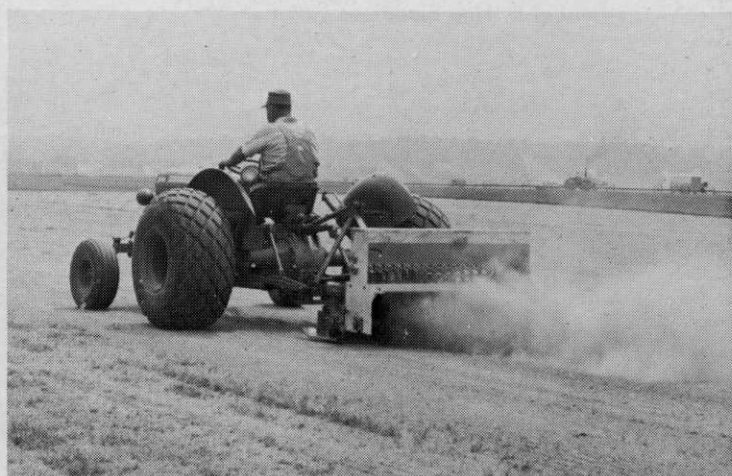
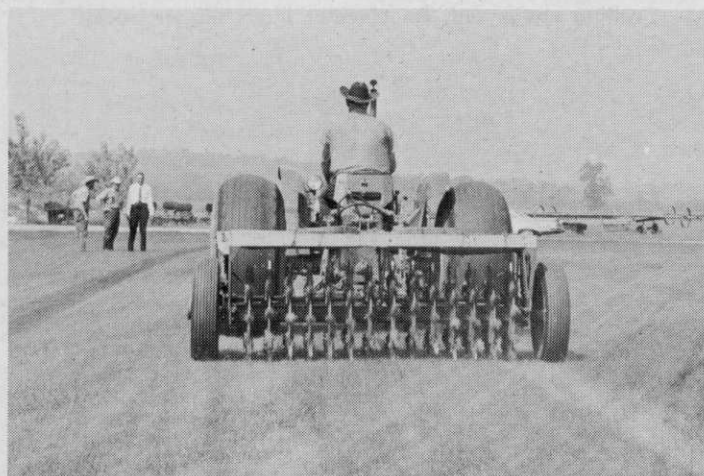


tilizing, seeding, disking, tool-barring, harrowing, leveling, rolling, irrigating, spraying, and so on.

"If we happen to do something right, we can look back and tell what it was," explained Latta.

A deep-well irrigation system provides 1,600 gal./min. at 60 psi. Valves are installed every 180 feet. Sprinkler diameter is 80 feet, including a 10-ft. overlap.

The answer to how Latta arrived at the equipment cost per acre becomes apparent as he lists major items of equipment: seven tractors, the largest of which is a Minneapolis-Moline G-1000, an Everson land leveler, Ryan sod-cutting and sod rolling equipment, a deep chisel,



To minimize compaction, Latta and Scholes have mounted field equipment on airplane tires . . .

field cultivator, spring-tooth harrow, two 11-gang and one 7-gang Jacobsen pull type mowers, one 7-gang Jacobsen self-propelled mower, one 7-gang Roseman pull-type mower, a Rogers sweeper and disk seeder, and a Viking seeder.

Trying Different Feeding Approach

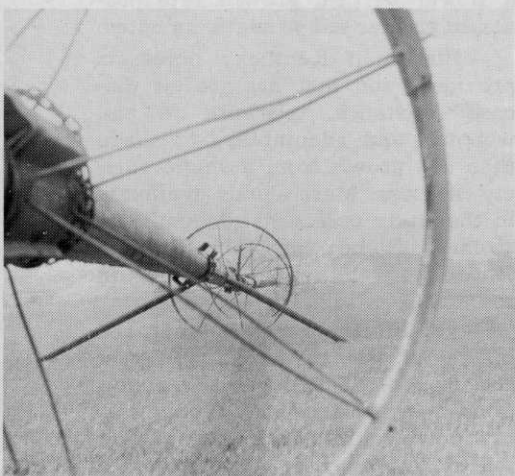
Latta and Scholes have experimented with a minimum-tillage approach to seeding using a West Point Aerifier. As soon as sod is removed, the Aerifier is pulled across the field a number of times creating hook-shaped holes. The field is then seeded. In six months' time grass planted by this method is well ahead of fields planted in the compacted rows by conventional seeders.

"It looks like this method may save time and trips over the field between harvests," Latta observed.

The Aerifier also has been used over turf just before harvesting. The puncturing seems to increase the sod's water holding capacity and quickens water absorption.

Latta has found that new techniques for growing sod can come about in unusual ways. A few years ago, he hired some school boys to plant zoysia plugs. Left unsupervised for a time, they decided to throw the plugs at each other rather than plant them.

Latta's disgust at their performance melted away as he noted that nearly every plug landed right side up for growing on the ground. His next step was to replace the boys with a manure spreader as the method for throwing the plugs. But their mischievous act led to a successful method of establishing a zoysia nursery. Latta has since changed and improved his method for establishing zoysia sod, and experiences in this endeavor will be the subject of an article in a coming issue.



... with a few exceptions.



Dr. Joseph M. Duich, left, Pennsylvania State University, receives the certificate that indicates he is now an honorary member of the Merion Bluegrass Association. The presenters are Dr. Fred Grau, only other living person so honored, and Margaret Herbst, director of information for the Merion Bluegrass Association.

Dr. Duich, who wrote his doctorate on Merion, has been active in breeder nursery research since his graduate student days. He helped develop Pennpar Creeping Bent and Pennstar Kentucky Bluegrass. At Penn State, he is in charge of the largest student teaching program in turfgrass, which has trained 250 golf superintendents.

Dr. Duich received the recognition at the Beltsville Field Day, an appropriate site because the original B-27 bluegrass was brought to Beltsville for trial.

NW Turfgrass Association Announces 1970 Officers

Tom Keel was elected president of the Northwest Turfgrass Association at its recent 23rd annual conference. He is director of Douglas County Park Dept., Roseburg, Ore.

Other new officers elected at the conference, held in Hayden Lake, Idaho, are: Vice-president, Doug Weddle of Tumwater Valley Golf Course, Olympia, Wash.; treasurer, Dick Haskell of Jackson Park Municipal Golf Course, Seattle, Wash.; and executive secretary, Dr. Roy L. Goss of the Puyallup, Wash., Research Center.

The Association's new board of directors includes John Harrison of Idaho; Dick Malpass and Al Blair of Oregon; Art Elliott, Glenn Proctor, Dick Schmidt, Weddle and Haskell of Washington, and Dick Mitchell of British Columbia.

Membership in the Association is composed of some 400 park and recreation administrators, golf course, industry, and school personnel from Washington, Oregon, Idaho, Montana, and British Columbia. The Association sponsors research centers at Washington State University, Puyallup, and Oregon State University, Corvallis.

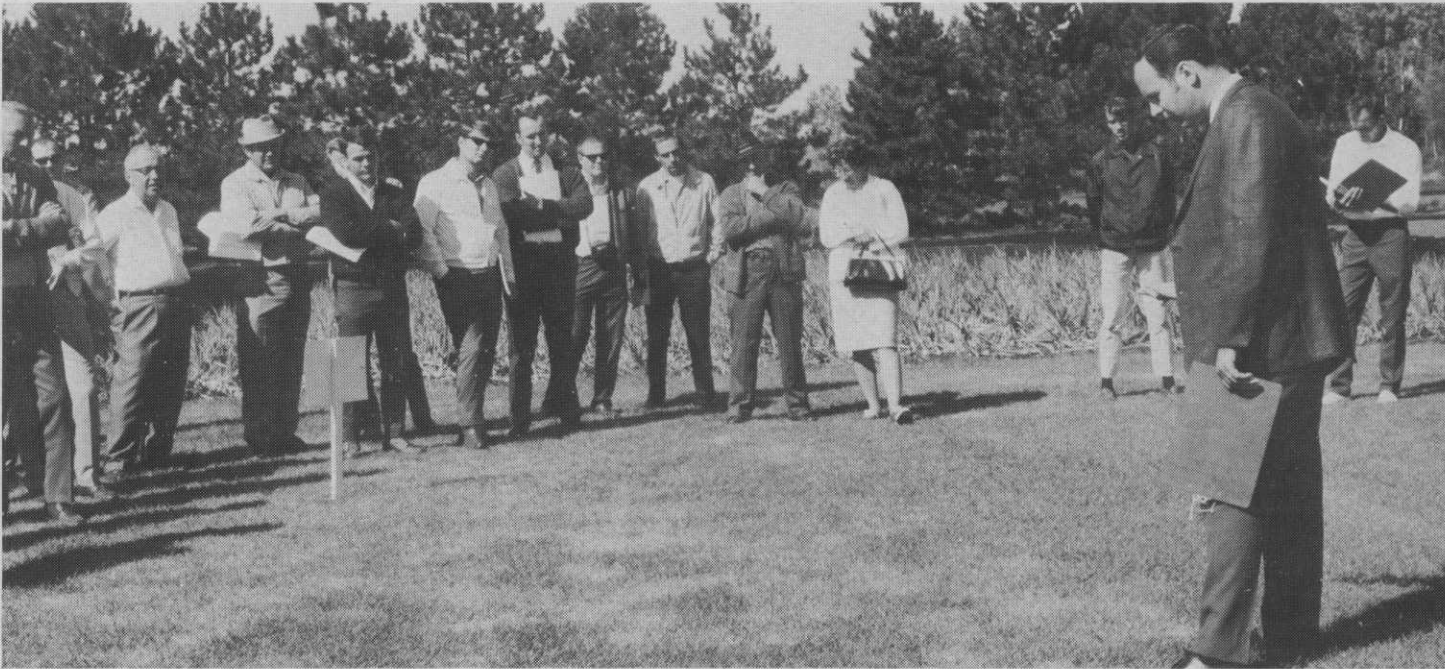
The 24th annual conference will be held at Salishan Lodge, Ore.

AMERICAN SOD PRODUCERS ASSOCIATION invites your participation

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For More Details Circle (104) on Reply Card



Fusarium blight, a serious disease of turfgrasses, plagued Michigan lawns this year. Joseph Vargus, MSU turf pathologist, comments on the condition of a plot at MSU's first sod producers' field day.

Michigan State Reports On First Sod Field Day

Michigan State University's first Sod Production Research Field Day attracted producers from five states and Canada to the MSU Muck Experimental Farm near Laingsburg, Sept. 10.

Scientists reported on recent research conducted on all phases of cultural practices involved in commercial sod production. These were

some of the findings reported:

— Merion Kentucky bluegrass cut each week at a height of 2.5 inches had greater sod strength than the same grass cut closer or more frequently.

Sod strength was determined by the amount of force needed to tear the sod. A special experimental apparatus has been developed by

Michigan State University scientists to measure this force.

John Kaufmann and Robert Shearman, MSU turfgrass researchers, reported that an average of 161 pounds was needed to tear sod that had been cut at a height of 2.5 inches once a week.

— The turfgrass varieties with the greatest sod strength in MSU tests were Nuggett, Pennstar, Fylking and Merion — all Kentucky bluegrasses. Jamestown and Pennlawn were the strongest red fescues.

Dr. James Beard, MSU turfgrass researcher, found significant differences in sod strengths among the 22 bluegrass varieties and three red fescue varieties he compared. Varieties having a low growth habit and a slower vertical growth rate possessed greater sod strength, he noted.

— Blends of Kentucky bluegrass provide a sod that has greater disease resistance, tolerance to bad weather, and adaptability to shade than sod grown from a single variety of grass. Most blends evaluated in the study possessed adequate sod strength. Blends containing Fylking tended to rank slightly higher in sod strength, said Dr. Beard.

David Martin reported that red fescue is the preferred turfgrass species for use under shady conditions, but the Kentucky bluegrasses produced a stronger, higher quality sod more easily. He found that red fescue mixtures containing as little as 10% Merion Kentucky bluegrass

Soil mixtures and water infiltration rates on putting greens were explained by Ray Kunzee, MSU soil scientist.





A sod strength-testing device, developed at MSU, is examined by Dr. James Beard, MSU turfgrass researcher.

had adequate sod strength but were of poorer quality. Red fescue mixtures containing 20% to 30% Merion gave good sod strength for handling and had acceptable quality.

— Merion bluegrass sod growth on organic soil under Michigan conditions should receive about 30 pounds of nitrogen per acre or less in the summer and no more than 60 pounds at any other time of the year to maintain sod strength.

MSU soil scientist Paul Rieke recommended applying 90 to 100 pounds per acre per year of nitrogen on organic soils growing Merion, 60 to 100 pounds for common Kentucky bluegrasses and 40 to 75 pounds for fescues. The wide range allows for variations in the age and condition of the grass, and the soil, drainage and irrigation conditions.

— *Fusarium blight* is becoming a widespread problem on Michigan lawns, and no chemical is yet available to correct the problem.

Dr. Joseph Vargas, of MSU's Department of Botany and Plant Pathology, said ever since the disease first appeared in Michigan about six years ago, the number of home lawns affected and the severity of the disease has steadily increased. The disease occurs during hot, dry weather when the lawn is under stress from drought. The disease can cause widespread losses in sod fields, and Vargas is looking for ways to correct this potentially serious problem.

— Sod heating, which can cause

severe damage to sod during shipment, can be reduced by cutting close and removing the clippings.

MSU turfgrass specialist John King said close cutting prior to harvest reduced the temperature build-up and respiration rate of the sod.

He also showed that high nitrogen rates applied five days before harvest were detrimental to the sod. The respiration rate and death of the grass were significantly increased.

— Harvesting sod takes some topsoil from the land, but not as much as some producers might think.

Dr. Robert Lucas, MSU soil specialist, said only about one-half inch of topsoil was removed when each sod crop was harvested from the Muck Experimental Farm. Topsoil depth at the farm ranges from 3 to 25 feet.

A typical organic sod piece is 1 square yard, weighs 33 pounds, contains 22 pounds of water, 6.6 pounds of soil, 3.8 pounds of roots and rhizomes and 0.4 pounds of dry grass.

King Ranch Grants \$5,000 For Lawngrass Research

Texas A&M research on a lawn-grass killer known as St. Augustine Decline has received a \$5,000 boost from King Ranch, Inc. of Kingsville, Texas.

King Ranch, Inc., provided the grant for fundamental and applied research on St. Augustine Decline and for developing adaptable resistant varieties, which will ultimately be distributed to growers of St. Augustine grass.

Dr. R. W. Toler, associate plant science professor at Texas A&M, is project leader for SAD research, as well as for all cereal and grass virus studies. Norman L. McCoy, Extension plant pathologist, is working with Toler and will complete his Ph.D. dissertation from SAD investigations.

Homeowners from Orange to Brownsville and as far north as Ft. Worth will benefit from this research since St. Augustine Decline has been found throughout that area. About 96% of lawns in the Coastal Bend area of Texas are seeded to St. Augustine grass, Toler reported.

Since discovery of St. Augustine Decline, Texas A&M has named the disease, identified it as a virus, and worked toward development of plant resistance. Possible resistant varieties are now being tested, Toler added.

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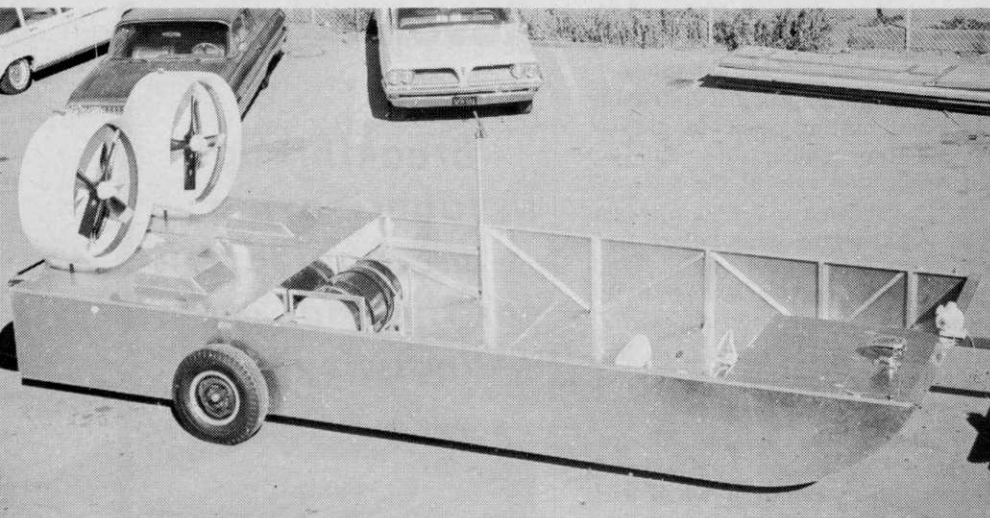
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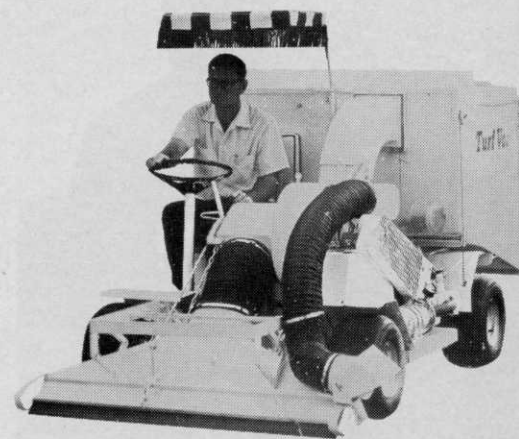
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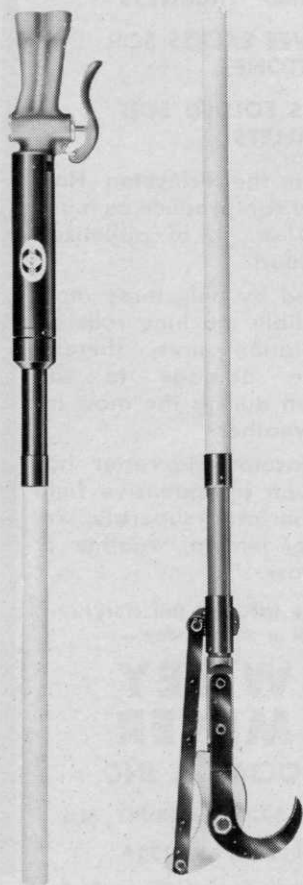


Aquanautics, Inc., Sunnyvale, Calif., announces its Swamp Cat, claimed to be the first twin-engined air boat built for commercial use with both forward and reverse rotation propellers and retractable wheels for trailering over land. The vehicle can carry a payload of nearly two tons at speeds in excess of 20 knots, even in water less than 6 inches deep, manufacturer maintains. Its overall length is 25 feet with a 9-ft. beam. Made of aluminum, the Swamp Cat is powered by two Ford 289 engines which are cooled by special radiators built into the jet-air ducts. Price is \$13,000. For more details, circle (701) on reply card.

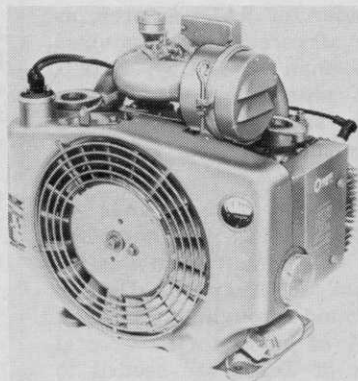


Turf-Vac Corporation, Long Beach, Calif., has designed a new model self-propelled sweeper. Called the Model 70, the unit features a sweeper-width of 54", and front loading (wheels behind scoop). Manufacturer claims it has excellent side-hill stability due to the low profile and four-wheel suspension, and fast unloading without leaving the driver's seat. An 18-hp. engine provides a vacuum system which operates entirely without mechanical pick-up devices. It can be used on both turf and paved surfaces, under both wet and dry conditions. Available with a blower unit for curb cleaning, windrowing, and hand-held intake hose for debris removal from hard-to-reach areas, the unit comes in five models — 4, 4½, 5 and 8-ft. widths, tractor-drawn (including P.T.O.), and self-propelled. Accessories include 12-volt electric starting and battery, engine hour meter, oversize muffler, hydraulic filter condition gauge, and locking gas-cap. For more details, circle (702) on reply card.

New Products



Ackley Manufacturing Company, Clackamas, Ore., introduces a hydraulically powered industrial tree pruner. With a cutting capacity of 2" plus, the unit provides full hydraulic power for both the cutting and retracting strokes in both open or closed center. The unit is available with aluminum or epoxy-resin handle, the latter having an insulation rating of 125,000 volts per foot. The power unit is compatible to all existing hydraulic systems, and will operate from 4 to 10 gpm, or from 1000 to 2000 psi. For more details, circle (705) on reply card.



Onan Division of Studebaker Corporation, Minneapolis, Minn., adds a lightweight cast iron and aluminum engine, the Model "NH," to its product line. The 25 hp., 3600 rpm-rated unit is designed to operate any equipment requiring maximum output. The heavy-duty, air-cooled gasoline engine is a two-cylinder-opposed, 60-cu. in., 4-stroke "L" head model. It features a flat torque curve in the lower rpm range; the highest torque occurring at 2200 rpm. The standard, manual-start model, complete with cooling system and air-cleaner, weighs 120 lbs. It is 20¼" wide, 14¾" long and 18-13/16" high. With optional electric starter and alternator, the weight becomes 135 lbs. and the height 20¾". For more details, circle (706) on reply card.

