



# ***THE SOUTH FLORIDA GREEN***

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The Official Bulletin of the South Florida Golf Course Superintendents Association

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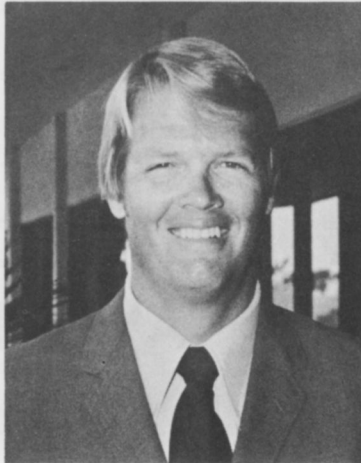
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ON OUR COVER

Mayacoo Lakes Golf Course is located in West Palm Beach and is rated among the finest anywhere. Jack Nicklaus course record of 70 attests to its championship caliber. See related story on page 13.



## President's Message



The day it snowed in Miami! We never thought we would ever see it, but it did happen. The degree of damage to the golf courses in our area varied with location and standards of maintenance. Where budgets were adequate to fertilize well, turfgrasses came through in good shape. Those that had the foresight to overseed became heroes overnight. By and large however, the grasses on most courses came through the cold weather with very little loss of turf.

Other vegetation, such as shrubs, bushes, and trees suffered. Brown was the color and many plants were badly hurt. No one assessed the total damage, but we can be certain that the sum total will be a significant amount.

We have all learned the lesson from Mother Nature. It can happen here. Golf Course Superintendents and Greens Chairmen together must reevaluate the priorities of the golfing member. Next year more attention is going to be given to preparation for winter play.

If overseeding is decided upon, then budgets must be increased accordingly. Turf quality must be kept at a higher standard to withstand any whim of nature.

This past winter's experience impressed upon all of us the fact that in times of emergency we need each other. These are the times we lean on each other. We trade ideas, we compare and suggest. As a result, we can better weather these times. And, of course, the net result is that the golfer will have a fine game.

*Tom Burton*

# BLACK THURSDAY... January 20, 1977

By LOU OXNEVAD

January 20, 1977, as we all know, broke all previous records for a cold period in South Florida. Some areas recorded 18°, a sustained 20° for 13 hours with a wind chill factor of 12° to 15° lower, and for some Floridians their first glimpse of snow. Then there were some Golf Course Superintendents who had icicles hanging from the palm trees and ice on their bermuda greens. We all remember that the cold lasted three more days. Monday found all golf courses, especially shrubs and most trees, looking like they had been burnt with a blow torch.

We all hope this type of cold weather stays out of South Florida, but if it does not, I think we will all have to make some changes in our maintenance practices. Having spent many years in North Carolina as a Superintendent, this type of cold weather brought back to mind some of the things we did to combat the early cold waves.

At Riviera Country Club, Wednesday, January 19, 1977, we sprayed all the fairways and greens with a wetting agent and Tecmangam. Thursday morning at 7:15 we watered all greens and tees for 40 minutes each. At 10:00 a.m. we started putting out Milorganite at the rate of 30 pounds per 1000 sq. ft. One other product for this purpose would be activated charcoal in a fine granular form. If not in granular form use a wettable paver. Be sure you have the right type of spray equipment since wettable charcoal is exceptionally abrasive. Besides these procedures if your greens fertility rate was high enough you could apply Gibberellic Acid to the greens.

The main reason for applying these dark materials to the greens and even tees is to help raise the soil temperature. We found that we could raise the soil temperature 4° to 5° in the 1/2" to 1" of soil. Most of the temperatures given to us in the paper or on the news are based on readings 4 to 5 foot above ground. It is interesting to put a soil temperature meter one inch into the soil and one on the greens surface, then listen to the 7:00 a.m. weather report and record the differences.

With this cold winter past us and maybe more to come, we all have to show "Old Man Winter" a little more respect. By keeping our fertility rates up, raising the height of cut, using a wetting agent to keep the frost off the greens, and keeping a close eye out for disease, we should be able to make it through to spring. The long range forecast is for a possible 3 more years of cold winters. If so, we should start looking ahead for possible ways to go into winter with more vigorous grass. One way this can be done is by applying extra potash, sulphur and magnesium in the early fall and one through the winter. There are probably a lot of other things that can be done. So don't wait until the last minute, winter will be here again before you know it.



RESULT OF OLD MAN WINTER'S VISIT

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# The Fertilizer Tag ... Some Changes Have Been Made

By G. H. SNYDER

Consumer protection. We hear so much about it these days. Do you know what is one of the oldest consumer protection laws written in the State of Florida? It is the Fertilizer Guarantee Law, which dates back to the turn of the century and has been amended several times since. A few changes took effect January 1, 1977. You should know about them.

The fertilizer tag is printed on or affixed to every container of fertilizer sold in Florida. It lists the plant nutrients in the fertilizer, tells how much of each is present, and gives the source of the nutrients. It also provides some detailed information on the forms of nitrogen present, information that is particularly valuable to golf superintendents.

A portion of a typical fertilizer tag is shown in Fig. 1. Lines 1, 7 and 8 show the Available Primary Plant Nutrients. These values are almost always printed elsewhere on the container and are often used in the advertising. They are the familiar 6-6-6, 10-10-10, 12-4-8, etc. that everyone has seen. They remain unchanged. They state, of course, the amount of nitrogen (N), phosphorous (P, expressed as  $P_2O_5$ , also called phosphoric acid) and potassium (K, expressed as  $K_2O$ , also called potash), as a percent of the total quantity of fertilizer. So a 12-4-8 fertilizer contains 12% N, 4%  $P_2O_5$  (actually only 1.7% P) and 8 % $K_2O$  (actually only 6.6% K). Regardless of whether the fertilizer is a dry or liquid material, if it has these numbers, it contains 12 lb. N, 4 lb.  $P_2O_5$  and 8 lb.  $K_2O$  per 100 lb. of fertilizer.

Available nitrogen can exist in a number of forms, and the form affects the way that turf responds to it and the way that it should be used. So it is important for a golf superintendent to understand this information. Lines 2, 3, 4, and 6 list the nitrate N ( $NO_3-N$ ), ammoniacal nitrogen ( $NH_4-N$ ), water soluble organic nitrogen and water insoluble nitrogen, respectively. Of these four, only the water insoluble nitrogen is of the "slow-release" type. Do you realize that under pre-1977 Florida law, the word organic may have been used to mislead you? In some states the word organic is reserved for slow-release nitrogen. So in these states, if a fertilizer is advertised as 50% organic, you can assume that one half of the nitrogen is slow-release nitrogen. But in Florida, a fertilizer can legally be advertised as 50% organic, or even 100% organic, and contain absolutely no slow-release nitrogen. It can all be water soluble (usually urea). The information you need to determine the amount of slow-release and readily available nitrogen present is printed on the tag (lines 4 and 6). For example, if the fertilizer is a 10-10-10, and is billed as 50% organic, and line 4 shows that it contains 5% water soluble organic nitrogen, you know that none of the organic nitrogen is of the slow-release type. The certain way to find out if you are getting slow-release nitrogen is to check line 6, i.e., Water Insoluble Nitrogen. If a 6-6-6 fertilizer is advertised as 100% organic, and lines 4 and 6 are 4% and 2% respectively, you know that the fertilizer is 2/3 readily available nitrogen and 1/3 slow-release.

So it has been possible for you to be deceived by the word organic, which is often prominently printed on the container and in the advertising. You had to examine the tag to know what you were being sold.

The revised law seeks to overcome this. But it only adds to the confusion. It now states: "When the term "organic" is utilized in the label, labeling, or advertisement of any commercial fertilizer, it shall be qualified as either "synthetic organic" or "natural organic" with the percentage of each specified. This shall not apply to the guaranteed analysis."

The problem is that one might now discriminate against synthetic organic nitrogen or at least interpret the phrase to only mean water soluble nitrogen. But several good water insoluble nitrogen sources, such as UF and IBDU, are also synthetic organic nitrogens. The answer to this problem is the same as it was before the law was changed. When wanting slow-release nitrogen, simply and absolutely ignore the word organic. Instead, look at line 6 of the tag and see how much

Figure 1

## GUARANTEED ANALYSIS

		Line**
Total Nitrogen .....	10.00%*	1
Nitrate Nitrogen .....	1.0%*	2
Ammoniacal Nitrogen .....	1.0%	3
Water Soluble Organic Nitrogen .....	5.0%	4
***And/or Urea Nitrogen .....	5.0%	5
Water Insoluble Nitrogen .....	3.0%	6
Available Phosphoric Acid as $P_2O_5$ .....	10.00%	7
Soluble Potash as $K_2O$ .....	10.00%	8
Chlorine not more than .....	3.00%	9
Derived from: Tankage, Ammonium Nitrate, Urea, Superphosphate, Sulfate of Potash and Sulfate of Potash-Magnesia.		10 11 12
Statement of Secondary Plant Nutrients:		13
Total Magnesium as Mg, not less than	2.00%	14
Water Sol. Mag. as Mg, not less than	2.00%	15
Copper as Cu, not less than .....	0.50%	16
Manganese as Mn, not less than .....	1.00%	17
Derived from: Sulfate of Potash-Magnesia, Copper Sulfate, Manganese Sulfate.		18 19

\*Values in this column are for illustration only and will vary with the particular fertilizer.

\*\*The line numbers do not appear on the tag. They are inserted here for reference in the text.

\*\*\*Optional with registrant.

Fig. 1. Sample Guaranteed Analysis information shown on a typical fertilizer tag.

## THE FERTILIZER TAG . . . (continued)

water insoluble nitrogen is present. This is the slow-release form. Of course, both readily available and slow-release nitrogen are "good" forms of nitrogen for turf. The big difference is in how they are used. Readily available nitrogen (i.e., water soluble nitrogen) should be used in light, but frequent applications. Slow-release nitrogen (i.e., water insoluble nitrogen) can be applied less often, but in higher amounts. It is the more expensive type.

The nitrogen portion of the tag also gives you some other information that might be useful. Line 3 shows how much ammoniacal nitrogen is present. This form of nitrogen creates soil acidity. When dealing with chronically high pH soils, such as are often found in south Florida, you may wish to have as much of this form of nitrogen as possible. In acid soils, of course, you may want to avoid this form.

The remainder of the tag deals with the Secondary Plant Nutrients. This portion of the tag has been changed. Whereas previously each of these nutrients was expressed as the oxide (i.e., CaO, MgO, CuO, B<sub>2</sub>O<sub>3</sub>, etc.), the nutrients are now expressed as the element (i.e., Ca, Mg, Cu, B, etc.). This is much more realistic, since the nutrients were seldom present as the oxide anyway. But it will require some changes in your thinking. For example, a fertilizer that contained 2% Fe<sub>2</sub>O<sub>3</sub> will now show 1.4% Fe, but will still contain exactly the same amount of iron (Fe). If you continue to specify, for example, "two units of iron and one of manganese" you will be getting, and paying extra for, 43% more iron and 29% more manganese. Do you really need it? The factors you need to convert between the elemental and oxide forms of expression are presented in Table 1.

The primary nutrients P and K are still expressed as the oxides (P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O), but the fertilizer never contains the oxides of these materials. These designations should be changed too. But there is a lot of resistance to this since it would require a change in the buying habits of fertilizer customers. The traditional 10-10-10 would be designated as 10-4.4-8.3, which is, in fact, how much N-P-K it contains. Someday this change will occur, but for now the more sensible designation of the nutrients as elements, rather than as oxides, will only be used for the Secondary Plant Nutrients.

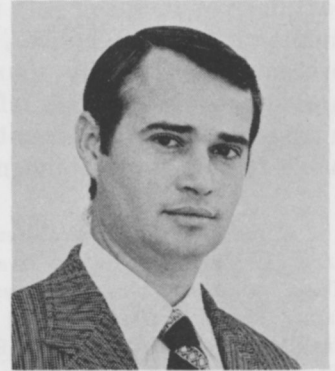
Table 1.

### Conversion Factors for Secondary Plant Nutrients

A (Oxide Form)	B (Elemental Form)	To Convert	
		A to B	B to A
		Multiply By	
B <sub>2</sub> O <sub>3</sub>	B	0.31	3.22
CaO	Ca	0.71	1.40
CuO	Cu	0.80	1.25
Fe <sub>2</sub> O <sub>3</sub>	Fe	0.70	1.43
MgO	Mg	0.60	1.66
MnO	Mn	0.77	1.29
MoO <sub>3</sub>	Mo	0.67	1.50
ZnO	Zn	0.80	1.24

The tag also contains other useful information, such as a list of the raw materials used to make the fertilizer. A very comprehensive discussion of the information shown on the tag is presented in Bulletin 177B "Know your fertilizers and lime," By Dr. Gaylord Volk. It is available free from County Cooperative Agricultural Extension Offices, or by writing the University of Florida, IFAS, Agricultural Extension Service, Gainesville, Fla. 32611. Using the information found in this Bulletin, and the recent changes in the law which have been outlined here, you can obtain a good understanding of the information available to you as a fertilizer buyer. The Florida Fertilizer Guarantee Law is a good one and it provides a wealth of information for you to consider in buying fertilizer. Learn what this information means, and use it when buying and using fertilizer.

GEORGE H. SNYDER is Associate Professor of Soil Chemistry, University of Florida, IFAS, Agricultural Research and Education Center, P.O. Drawer A, Belle Glade, Florida 33430.



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## SURVEY OF SOUTH FLORIDA GOLF COURSE OPERATIONS

A survey, sponsored by the S.F.G.C.S.A., has been sent to every golf course superintendent on the Southeast Coast of Florida. It is hoped that every superintendent will cooperate in this survey so we can come up with a range and analysis of golf course maintenance costs in South Florida.

It is very important that all superintendents return the survey as soon as possible, as the results will be printed in the July issue of the South Florida Green.

### FEBRUARY MEETING



Mr. David Mitchell

Fairchild Tropical Gardens was the setting for the February meeting of the S.F.G.C.S.A. Mr. David Mitchell, curator of education, was our host.

At 11:00 a.m. David gave a brief orientation talk on the origin of the garden. At 11:30 a.m. we took a leisurely tram ride through the garden finishing at 1:00 p.m. Because of the

lethal yellowing effecting palm trees in South Florida, the palm collection (biggest in the world) was one of the highlights of the tram ride. At 1:00 p.m. we returned for lunch and at 1:30 p.m. there was a Q&A period that had to be cut off at 2:30 p.m.

Our meeting day was cold and rainy, but still we had 75 show up for the meeting. Our thanks to David and the entire staff of Fairchild Tropical Gardens for making this meeting so successful and unforgettable.



Is YOUR Golf Course Superintendent missing from this Meeting? You can't afford not to send him! Stay informed. Join and support the S.F.G.S.A.

### NEW POLICY

"The South Florida Green" has now expanded its circulation to 800 mailings. This includes all golf course superintendents, golf pros and greens committee chairmen/managers from Vero Beach to Key West on Florida's Southeast Coast.

It is hoped these magazines will be circulated around the country club, and the editorial staff will strive to print timely articles of interest to all.

Those not currently receiving issues by mail should write the Editor at 7521 N. W. 12th Street, Plantation, Fl. 33313.

### COMING EVENTS

- April 11 & 12** — 31st Annual Southeastern Turfgrass Conference, Rural Dev. Center, Tifton, Georgia. Contact: Glenn W. Burton, Georgia Coastal Plain Experimental Station, Tifton, Ga. 31794.
- April 19** — SFGCSA Meeting, Riviera Country Club, 1155 Blue Road, Coral Gables, Florida 33146. Subject: Use of effluent water to irrigate golf courses. Lou Oxnevad, Host.
- May 10** — SFGCSA Meeting. Annual Equipment and Suppliers Day, Broward Community College. 3501 S. W. Davie Road, Ft. Lauderdale, Fla. Doug Palmer, Host.
- June 14** — SFGCSA Meeting. J. D. M. Country Club. PGA Blvd., Palm Beach Gardens, Florida. Carl McKinney, Host. Subject: Design, installation and maintenance of an irrigation Pump Station.
- July 12** — SFGCSA Meeting. Boca Raton Hotel and Club. Camino Real Blvd., Boca Raton, Florida. Annual Business Meeting and Election of Officers. Harry Lincoln, Host.

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# FT-GA NEWS

At the December 9th meeting at Sandpiper Bay, the Board of Directors voted to pro-rate dues for the last half of the fiscal year. After January 1st, your dues for the balance of the year (until June 30th) will be one-half the full years dues — \$30.00 instead of \$60.00. If, however, you wish to join and pay a full years dues, your dues would be paid for the year 1977-78. The preceding is for new members only.

The Conference Committee of the FT-GA met in Gainesville March 3rd, to work on the program for the annual meeting October 16-19. Sites for the 1978 and 1979 Conference and Show were selected at the February Board meeting held in Jacksonville. In 1978, Orlando is the site again, and for 1979, and a change of pace, the Conference and Show will be held in Tampa.

Your Florida Turf-Grass Association is working now to supply you with information about the 24-C pesticide program and to get you information about the disposal of empty pesticide containers.

Frank Arnall, Membership Chairman, has announced that his committee will be working to recruit help for the "blitz day" on May 12th.



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## FROM THE NATIONAL . . .



NINE ELECTED TO G.C.S.A.A. EXECUTIVE COMMITTEE

New officers and directors of the Golf Course Superintendents Association of America (GCSAA) were elected during the annual meeting at the 48th International Turfgrass Conference and Show in Portland, Ore., in February. The officers are (seated, from left) Louis D. Haines, CGCS, Denver (Colo.) Country Club, secretary-treasurer; George W. Cleaver, CGCS, Chestnut Ridge Country Club, Lutherville, Md., vice-president; Ted W. Woehrl, CGCS, Oakland Hills Country Club, Birmingham, Mi., president and Richard W. Malpass, CGCS, Riverside Golf and Country Club, Portland, Or., immediate past president. Directors are (standing, from left) David C. Holler, CGCS, Gulph Mills Golf Club, King of Prussia, Pa.; Michael R. Bavier, CGCS, Inverness Golf Club, Palatine, Ill.; Charles H. Tadge, CGCS, Mayfield Country Club, South Euclid, Oh.; Hobart T. Burgan, CGCS, Quail Creek Golf and Country Club, Oklahoma City; and Melvin B. Lucas, Jr., CGCS, The Garden City (N.Y.) Golf Club. Bavier and Burgan are new to the Executive Committee this year.

## TURFGRASS CONFERENCE SETS RECORD

More than 5,200 people, a record number, crowded into Portland, Or., for the 48th International Turfgrass Conference and Show, sponsored by the Golf Course Superintendents Association of America (GCSAA) in February. Some came from as far away as Greece, Japan and Sweden, but those who came from Buffalo, N.Y., and surrounding areas had a more difficult journey, as they battled the worst winter in recent memory. Some who came hadn't missed a conference in more than 20 years and some came for the first time this year. More than 1,000 GCSAA members were present, according to early tabulations.

The two attractions were the educational sessions and the displays of 166 exhibitors, the largest number ever to participate in the GCSAA show.

The education program was even more varied than in past years. Fifty-seven experts in turf management and various aspects of research, equipment, chemicals and management conducted more than 39 hours of actual educational experiences. In addition, four preconference seminars attracted 126 superintendent-students and 17 others took the rigorous six-hour certification examination. Of those, 13 passed all portions of the exam and became Certified Golf Course Superintendents, qualified to use the prestigious CGCS after their names. One is Thomas Malehorn, 23, golf course superintendent at Red Lion (Pa.) Country Club, the youngest superintendent ever certified.

Dr. James B. Beard, professor of turfgrass physiology, Texas A&M University, College Station, and Dr. John H. Madison, professor of environmental horticulture and horticulturist, University of California at Davis, both presented their talks twice to satisfy overflow crowds. Standing room only was the case in the Pesticide Update Session, which featured three experts, Dr. Harry Niemczyk, professor, Ohio Agricultural Research and Development Center, Wooster; Dr. Al J. Turgeon, associate professor of turfgrass science, University of Illinois, Urbana; and Dr. Joseph M. Vargas, Jr., associate professor, Michigan State University, East Lansing.

Two other new topics covered this year were the nature and use of effluent water for golf course irrigation and the grass seed industry, which is centered in the Portland area.

The record number of exhibitors may have been due to the recent tax reform law that for the first time allows direct selling at trade shows sponsored by non-profit associations like GCSAA. Although most exhibitors said they participated in this show to keep in touch with their golf course superintendent friends and not necessarily to make sales, some did do a brisk order-writing business. Turf managers seemed impressed with the displays, which featured several new models, some unveiled for the first time at the Portland Coliseum. More than 3,000 people attended the show each day it was open.

Several events of note took place during the conference week, February 6-11:

\* Perhaps indicative of the direction the newly elected Executive Committee will follow was the resounding approval by the membership of a more professional, strengthened Code of Ethics.

\* The Distinguished Service Award, the highest honor bestowed annually by GCSAA, was presented to three past presidents, Harold W. Stodola, Mendakota Country Club, St. Paul, Minn., president from 1941 to 1945; Paul E. Weiss, Sr., retired from Lehigh Country Club, Emmaus, Pa., president in 1957; and Robert M. Williams, Bob O'Link Golf Club, Highlad Park Ill., president in 1958.

\* Fifteen men who have been GCSAA members since 1951 qualified for the Quarter Century Award. Joseph Hadwick, The Country Club of Lincoln, Neb., was present to receive his award in Portland.

## Code of Ethics Strengthened

A stronger code of professional ethics and enforcement procedures have been approved. Reflecting concern for continued improvement of professional responsibility, the 4,300-member organization accepted a revised code and adopted By-Law amendments authorizing its strict enforcement.

One of the code's new standards is a requirement that product endorsements be based strictly upon satisfactory personal experience with the item. In addition, gifts offered by any firm must be made available to all similarly situated superintendents, with the understanding that no actions will be forthcoming as a result of the acceptance of such gifts.

The membership took the rather unprecedented action of strengthening the language of their previous code, adopted in 1970, without either the threat of action by others or a recent outbreak of weakened ethical conduct.

In conjunction with the approval of the new code, GCSAA members approved two Bylaw revisions to provide its stringent enforcement. The enforcement procedures will begin with the Ethics Committee. Upon that committee's recommendation, the Executive Committee can, under the new provisions, enforce the code by disciplining or expelling members who violate it.

Other provisions in the new code of ethics reflect the high standards and professional expectations of superintendents, built over the past 50 years.

LIGHTNING  
DAMAGE



# Lightning



By GUY WILLIAMSON  
Supt., Woodmont Golf Course

How many times have you heard "We'll get to the clubhouse before the rain starts. Let's just finish our work then go." Unfortunately the cart can come before the horse because lightning strikes as often during muggy lulls before the storm as during the downpour. This was the case last year at Woodmont when two golfers were struck on an almost perfectly clear day with the exception of a few scattered clouds.

Approximately 10-20 people are killed each year from lightning on golf courses and that many more are severely injured. Only boaters are more susceptible than golfers to lightning; the reason being golfers play among tall bolt-attracting trees and near lightning-conducting water and irrigation systems. Often these people on a golf course are not struck directly by lightning, but are killed or injured by ground currents that start from stricken trees or bodies of water nearby.

Are golf cars maintenance equipment as safe as automobiles? No, say Meteorologists. What protects you in your car is not rubber wheels, but the outer steel frame which keeps the current away from occupants and the insulation properties of the interior. Riding in a cart or on equipment doesn't decrease your chances, but at the same time, it doesn't increase them.

**What are the best things to do in an electrical storm?**

- 1) If you spot a storm moving toward you go immediately to the maintenance center or

clubhouse. Do not seek shelter under isolated trees or wooden shelter not equipped with lightning rods or steel frame. Many times these places are more dangerous than being in the open.

- 2) Walk or ride up the side of the fairway staying clear of large isolated trees, water hazards, wire fencing, and hilltops. Stay low. Do not raise anything containing metal over your head such as an umbrella. Metal doesn't attract lightning but does conduct the charge once it has hit. Just before lightning strikes a large electrical field is created which causes hair on your body to stand up. If this happens lie down immediately.
- 3) To help determine if there is enough time to make it back to the barn or clubhouse we can compute how far away the lightning is by measuring the number of seconds between the time the lightning flash is seen and the time the thunder is heard. A time lapse of at least 10 seconds would indicate a distance of 2 miles.

Golf courses can do two things to help prevent injuries. First they can equip all shelters, restrooms and isolated trees (under which people seek shelter during a storm) with lightning rods. Emergency telephones can be erected in isolated areas of the golf course, so workers can be located and brought to safety.



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# RECOVERY FROM THE COLD

## FREEZE DAMAGE

Many unexpected things probably will occur to large established shrubs and trees that were not killed directly in the extremely cold weather during January. Don't be alarmed to find good size shade trees and shrubbery taking on a nice spring growth pattern and then suddenly go into wilt, lose all the leaves and die within a few days time. This would be relatively typical of what you might expect from root rot injury or girdling of the trunk as a delayed reaction from the cold. Insects such as borers, ants, and termites probably will attack the plants as secondary pests.

Palm trees likely will develop more than the usual amount of bud rot diseases. This will show up as scorched looking new fronds when they emerge as new growth. Control of this problem might be aided by using a copper fungicide such as neutral copper: 2 to 4 lbs. per 100 gallons of water as a saturation treatment applied to the new growth as well as old leaves.

Good fertilization and watering practices should be strictly followed to stimulate good, vigorous growth and possibly aid in the recovery of the above problems.

LEW WATSON  
County Agent  
Broward County

## COLD WEATHER PLANT TOLERANCES

How should we determine what to use as landscape material to offset maybe another cold wave?

At planting time select and plant hardy plants for your area. Use only cold hardy plants for the basic plants of the landscape scheme. Less hardy plants may be used as supplements or fillers. If these plants are damaged temporarily or even killed, the overall plan will not be destroyed.

The following plants were observed in the coldest areas of Dade County.

### TREES DAMAGED

Black Olive, Tabebuia, Schefflera, Bauhinia, Coconut, Areca, Royal palm, Phoenix palm (moderate) Sea Grape, Poinciana, Jacaranda (moderate damage) Adonia, Mahogany, Jambolan, Sapodillia (moderate) Ficus, Tamarind, Bananas, Geiger, Clusea

### SHRUBS DAMAGED

Philodendron, Ixora, Dracena, Aralia, Acalypha, Croton, Hibiscus, Agave (moderate damage), Wedalia, Cyads, Crown of Thorns, Carissa (moderate damage)

### HARDY

Ligustrum, Bottlebrush, Norfolk Island Pine, Italian Cypress, Arbovitae, Viburnum, Queen palm, Loquat, Cabbage palm, Wax Myrtle

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Extension Agent  
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# NEW CUSHMAN GREENSAVER AERATOR.

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There are several ways to aerate greens and tees, but now there is *one* way that lets you do it *fast and deep*. The Cushman Turf Greensaver. It finishes the aeration job up to 10 times faster than walk-type units and provides penetration of 2-1/2".

The Greensaver attaches to a 3- or 4-wheel 18-hp Cushman Turf Truckster chassis (equipped with a hydraulic system) by three quick-release pull pins.



Then add weight trays full of sand to the Truckster chassis and sand to the weight tray on the Greensaver attachment. That's it. You're ready to aerate 18 greens in a single day.

In the raised position you're able to travel quickly between greens... and that saves time. When you reach the green just move the hydraulic lever at your side until the Greensaver is lowered into the turf. There's no need to stop the vehicle. You can keep moving and aerate at speeds up to 6 mph.

As the tines enter the ground, the cores are forced through the tines and into the drum. The cores are collected for removal in this way. The drum is emptied through a large door. This can save hours of clean-up time. Or you can open the sides of the drum and the cores will be deposited on the green, ready to be broken up and dragged into the green. Behind the drum are a turf guard and roller which smooth the turf into playable condition and prevent the sod from rolling up on the core drum.

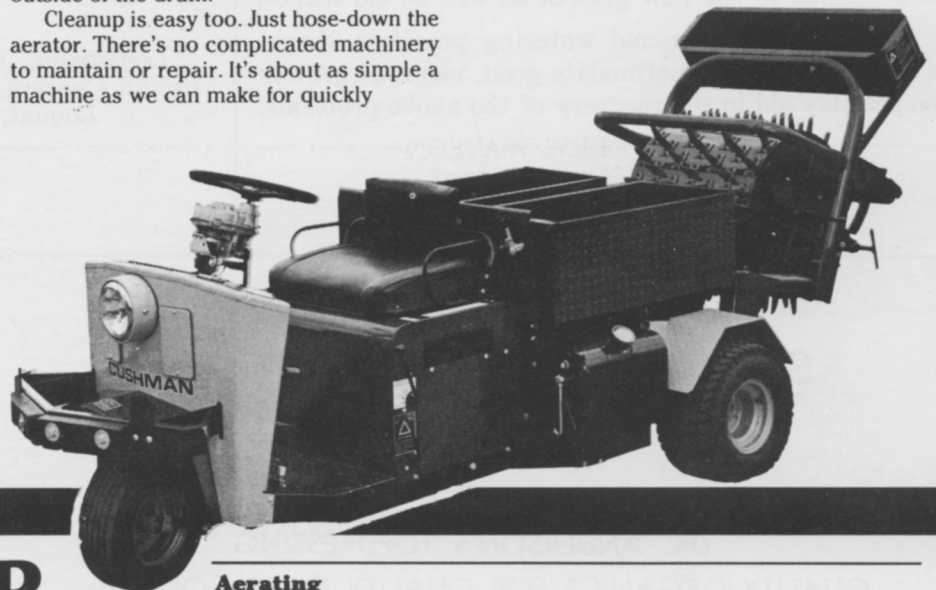
The Greensaver aerates with a 3-1/4" x 4" pattern of holes in the turf. At 2-1/2" of penetration it will remove 60% as much soil as the walk-type aerators do, and up to three times more soil than other drum-type aerators do.

The tines on the Greensaver have a unique involute shape. This shape eliminates the pivoting action required on other drum aerators and enables the tine to slide in and out of the turf at faster speeds

with minimum disturbance to the green. The tines may be replaced or changed by removing two self-tapping screws from the outside of the drum.

Cleanup is easy too. Just hose-down the aerator. There's no complicated machinery to maintain or repair. It's about as simple a machine as we can make for quickly

aerating greens and tees. And it's one more way to put your 18-hp Cushman Turf Truckster chassis to work.



## GREENSAVER SPECIFICATIONS:

<b>Aerating pattern width:</b>	24"
<b>Aerating pattern:</b>	3-1/4" x 4"
<b>Aerating drum:</b>	112 tines with door covering 1/3 the circumference of drum. The drum axle has grease zirc fittings on bronze bushings.
<b>Tines:</b>	One size currently available.
<b>Frame:</b>	Heavy steel welded construction.
<b>Method of attachment:</b>	3 pull pins.

Specifications subject to change without notice.



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# ASK THE DOCTOR

By MAX A. BROWN, Ph.D.

**I have bullgrass and goosegrass in my greens. What is the best method to remove them and not kill or severely set back my bermudagrass(T-328)? Miami.**

First you should diagnose and correct those environmental conditions which have allowed the weeds to successfully compete with the bermudagrass. Conditions such as cleanliness of topdressing soil, compaction, drainage, soil profile, mowing practices, fertility or presence of pests such as insects, nematodes or disease organisms must be studied and corrected.

After the proper bermudagrass growth conditions have been created, the existing weeds should be removed. If practical, hand removal followed by careful topdressing is the method of choice, especially for goosegrass (*Eleusine indica*). Bullgrass (*Paspalum* spp) does not lend itself well to hand weeding because of heavy rhizome and stolen growth so chemical methods may be necessary.

Light applications of MSMA (not over 2 pounds per acre) with a small amount of wetting agent and/or spreader-sticker can be applied to the weeds every 3 to 5 days. Three to four applications may be necessary on goosegrass. A small amount of 2,4-D, ammine (1/8 pound per acre) can be included in the first application on goosegrass.

Herbicides can be applied with a well calibrated boom sprayer or with a dry formulation on a vermiculite carrier. Some superintendents have had great success using a liquid formulation diluted to 1/3 normal concentration and carefully applying to the leaves of all weeds with a small paint brush. Great care must be taken not to discolor or set back the bermudagrass with the herbicide application.

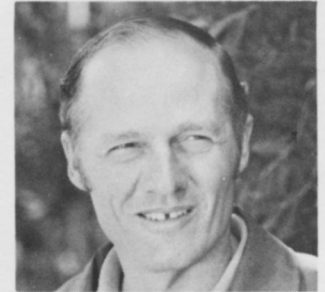
**I have heavy patches of goosegrass where golf carts are restricted to certain areas. How can I eliminate this problem? Stuart.**

You must first correct the causal condition which is heavy traffic and soil compaction. Provide a well designed cart path or develop a system for golf cart distribution which will disburse cart traffic.

Next, correct the compacted soil condition by thorough aerification. It may also be necessary to correct poor drainage conditions and/or add a better physical quality of topsoil.

Once the causal condition is corrected and grass is growing normally the weeds can be removed. If weeds are large and concentrated to certain areas, hand weeding can be most effective. Cut goosegrass weeds just below the soil level, taking care to remove all of the crown of each plant. Topdress to level weeded areas with clean topsoil.

More expansive areas may require chemical treatment for effective weed removal. Selective chemical treatment should only be carried out when temperatures are warm, soil is moist and grass is vigorously growing. Goosegrass weeds should be regularly mowed throughout the control program. Spray weeds every



Dr. Max A. Brown

3 to 5 days with 50 gallons per acre of a spray solution containing 2 to 3 pounds MSMA, 1/8 pound, 2,4-D (first spraying only), a wetting agent and/or a spreader-sticker. The frequency and rate of application should be adjusted so that bermudagrass is not discolored and most weeds are removed in four applications.

A new herbicide, Asulox, has received label clearance for removal of goosegrass from fairway bermudagrasses. Researchers are hopeful this material may effectively remove goosegrass in only one or two applications.

**I am the superintendent on a golf course that receives heavy winter play. My greens have become hard and weak. What should I do? Delray Beach.**

This is a typical condition in this area. Some things you may wish to evaluate in your management program are: (a.) am I distributing the cup well enough over the green? (b.) are my watering practices or drainage problems contributing to soil compaction? (c.) is the physical condition of the soil in my greens improper and contributing to hard greens?

Heavy seasonal golf play usually slows down after Easter. At this time aerify all greens thoroughly. If the soil in your greens is physically satisfactory, leave the plugs on. If your soil needs amending, remove the plugs and topdress with a soil mix designed to correct your problem. It may be necessary to aerify, remove the plugs and topdress your greens 4 or 5 times before October to correct a poor soil condition. Otherwise a spring and fall aerification should suffice.

Next year make sure your greens are aerified and resilient going into the season, spike regularly and topdress frequently during the season.

\* \* \*

**Editor's Note:** Questions to Dr. Brown should be addressed to "Ask the Doctor"  
C/O The Editor, 7521 N.W. 12th Street,  
Plantation, Florida 33313.

CAN YOU TOP THIS? . . .



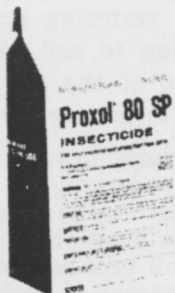
A GREEN IN FLORIDA

Answer on Page 19

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# A GIANT KILLER IN THE WOODS

By DAVID BAILEY

**Mayacoo Lakes Golf Course** — toughest to score on in South Florida. That is a big statement. Our area has Seminole, Pine Tree, JDM East, Doral, and Jupiter Hills all rated among the top forty clubs in the nation.

Pine Valley Golf Club in New Jersey is generally rated the toughest course in the world. It is used as a measurement of others greatness. Mayacoo Lakes Country Club, West Palm Beach, is more like Pine Valley than any club in South Florida. Both have blended their courses into their natural environment to the utmost. The small flat greens fit the Florida terrain. The tight fairways look awesome.

The course opened in November 1972. It is a private membership club of just over three hundred. Who are the men responsible for this accomplishment? The course architects were Jack Nicklaus and Desmond Muirhead. Nicklaus holds the course record with a seventy. Carl Smith was the golf course superintendent during construction and the opening season.

The current leadership is spearheaded by the six member greens committee and three department heads. Vinnie Spano is the golf course superintendent. The golf professional is Steve Philbrook.

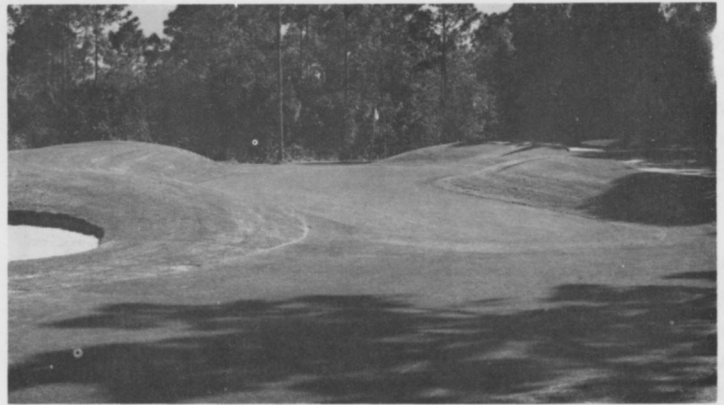
Vinnie Spano has been at the club since the construction days. The assistant superintendent is Chuck Greenwald, now in his third year at Mayacoo. Both received their formal turf education from the University of Massachusetts.

Vinnie Spano says "If you build a championship golf course you must maintain it that way. Our Tifdwarf greens are daily cut with walking mowers. The heights vary from 1/8 inch to 3/16 inch depending upon conditions." Spano prefers Tifdwarf turf for the greens at his club. "Color is a small problem in the cold winters and you must verticut more than with 328. But for the serious golfers, like our membership, it's the best turf." The fairways and tees are Tifgreen 419.

The natural setting is the theme at the club. There are no homes around the course. It's golf for golf's sake. The members own the club and want it kept as is. Vinnie says "The vegetation is thirty percent slash pines, thirty percent cabbage palms and palmettos, thirty percent melaleuca trees, and ten percent rattlesnakes. We kill thirty to forty rattlesnakes per year. The course record is a six and a half footer."

Two of the most memorable holes on the layout are the back nine par threes. Both holes require only a short iron shot and a lot of courage. Just as at Pine

Photography by Andrew Phillips



*Want a hundred foot putt? The 17th Hole can provide it!*

Valley you must hit the ball airborne off the tee. Why? The fourteenth fairway (see cover) is fifty percent palmettos starting six feet from the tee.

The challenge is different on the par three seventeenth. Think of the club selection on a green that is one hundred thirty feet long and only twenty-eight feet wide. The green was redesigned from the blueprint. Soil was hauled for the green, stockpiled and a bulldozer leveled it down the middle. Thus a long skinny green tucked in the midst of rolling mounds and traps.

Mayacoo Lakes is a product of dedicated members, a correct well managed budget, and loyal employees. For the benefit of all golfers we hope the fine work continues.



*Water can come into play on half the holes,  
And no homes spoil backdrop of the greens.*

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## CITRUS BLACK FLY UPDATE

Administrative instructions regarding Citrus Blackfly regulations have been updated as of February 21st. This new directive supersedes all previous instructions for nursery men and stock dealers on citrus blackfly within the regulated areas of Broward, Dade and Palm Beach counties.

Research has indicated that some host plants such as allamanda, croton, and viburnum do not sustain development of citrus blackfly beyond the egg or first stage (instar) larvae. Certification of all host plants is required before moving those plants from nurseries.

All host nursery stock moved to any other area in or outside the regulated area must be accompanied by a numbered stamp imprint reading "D.P.I. # \_\_\_\_\_ CITRUS BLACKFLY." This certifies authorization to move and that plants have been inspected and/or treated by the various spray schedules and certified by an authorized inspector.

Further information, complete host plant list and treatment schedules are posted on the bulletin Contact: Division of Plant Industry, P.O. Box 1269, Gainesville, Florida 32602.

## Recommended Reading

Here is a list of basic periodicals that every golf course superintendent should subscribe to and have on his shelf:

1. "Irrigation Journal"  
P.O. Drawer 77  
Elm Grove, Wis. 53122
2. "Pest Control"  
Box 6049  
Duluth, Minn. 55806
3. "Plant Industry News"  
Division of Plant Industry  
P.O. Box 1269  
Gainesville, Florida 32602
4. "Proturf"  
Proturf Editorial Services Dept.  
O.M. Scott & Sons  
Marysville, Ohio 43040
5. "USGA Green Section Record"  
Golf House  
Far Hills, N. J. 07931
6. "Florida Gardening Companion"  
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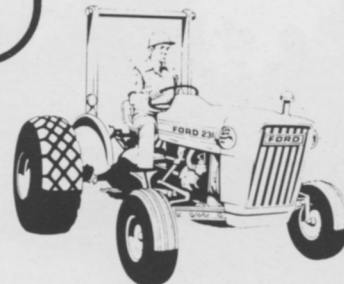
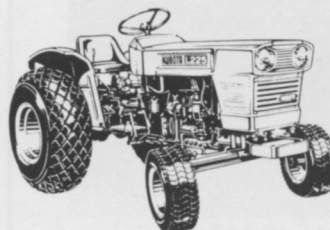


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# CHEMICALLY SPEAKING

By GERRY MILLHOLEN

This edition of "Chemically Speaking" deals with a subject often overlooked by golf course superintendents and their employees, and that is: the safe handling and application of all pesticides. There are 13 basic rules for handling pesticides safely:

1. Identify the pest.
2. Use pesticides only when needed.
3. **ALWAYS** ask the advice of an authority on problems relating to pests and pesticides.
4. Use only the recommended pesticide for the correctly identified pest.
5. Read the label, read all of it. Read it every time the pesticide is used.
6. Know what to do in the event of an accident. Have your physician's telephone number posted in a conspicuous place near the telephone.
7. Take time to explain to employees why pesticides are used and the safety aspects of handling them. Make sure they understand.
8. Check application equipment at least ten times a year for leaks, worn parts, etc.
9. Calibrate application equipment frequently. Brass nozzles and strainers wear out rapidly and should be replaced often.
10. Wear protective clothing and equipment when applying and handling **ALL** pesticides.
11. Have a shower equipped with soap and towels at the maintenance facility.
12. Do not permit the delivery of pesticides unless a responsible person is on hand to receive and properly store them.

13. Know the telephone number of the **Poison Control Center** and do not hesitate to call in the event of an emergency. **Post this number in a conspicuous place close to the telephone.**

Do not depend on toxicity values as the only factor to be considered regarding the hazards of a pesticide to human beings or other animals. Pesticide applicators should be concerned with the hazards associated with the exposure to the chemical and not the toxicity of the material itself.

Toxicity is the inherent capacity of a substance to produce injury or death.

Hazard is the result of two primary variables: toxicity and exposure; and is the potential threat that injury will result from the use of a compound in a given formulation or quantity. Some hazards do not involve toxicity to man or other animals, but may pose considerable hazard to some plants. For example; sulphur, oils, xylene, will cause phytotoxicity in plants, but are relatively safe to man.

A pesticide may be extremely toxic but present little hazard to the applicator or others when used in a very dilute formulation, or in a formulation that is not readily absorbed through the skin or readily inhaled.

On the other hand, a compound may exhibit a relatively low mammalian toxicity, but will present a hazard because it is normally used in a concentrated form which may be readily absorbed or inhaled. Or it may be used frequently by the non-professional who is not aware of the potential hazard to which he is exposed.

Remember that pesticides are safe in the hands of professionals and should be kept there.

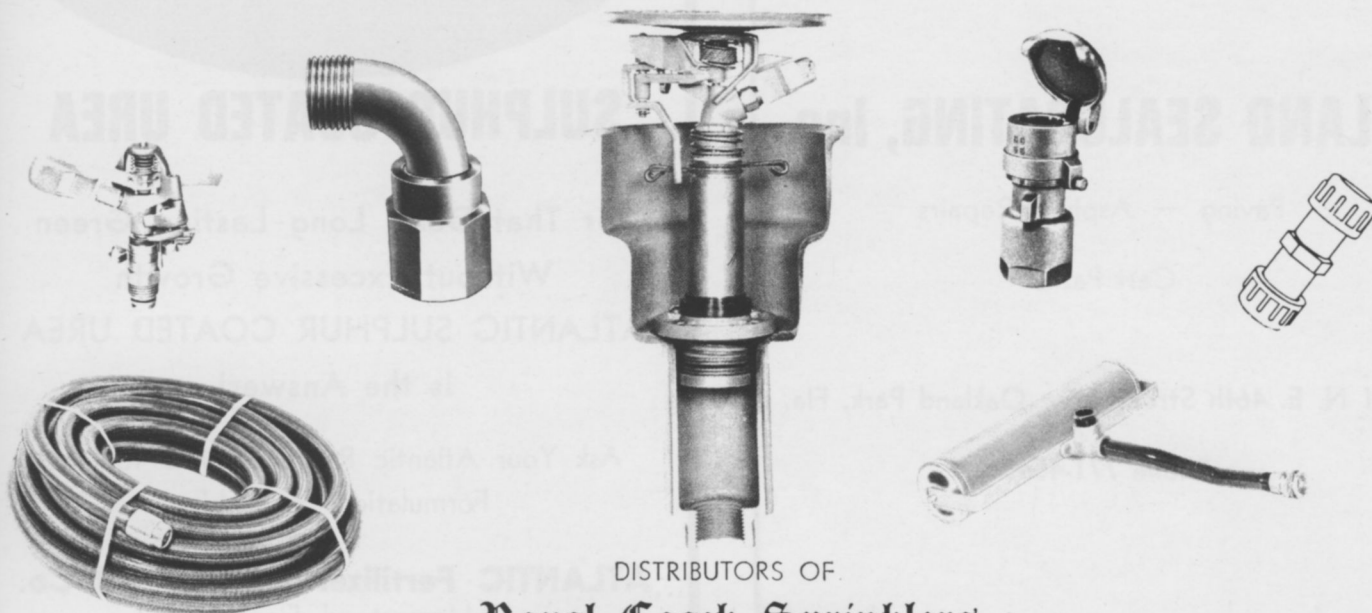
*Excerpted in part from N. Carolina Agricultural Chemicals Manual*

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The British Columbia Automobile Association collected this list of reasons given by drivers involved in accidents.

•  
“A pedestrian hit me and went under my car.”

“A truck backed through my windshield into my wife’s face.”

•  
“Coming home, I drove into the wrong house and collided with a tree I haven’t got.”

•  
“I consider that neither of us was to blame but if either was to blame, it was the other one.”

•  
“I collided with a stationary bus coming the other way.”



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# Revised Host List . . Lethal Yellowing

The Division of Plant Industry of the Florida Department of Agriculture and Consumer Services has issued an update on Lethal Yellowing Disease. Here is the text of the bulletin from J. K. Condo, Chief, Bureau of Plant Inspection:

## REVISED HOST LIST

1. \**Arenga engleri* Becc.
2. *Arikuryroba schizophylla* (Mart.) Bailey (Arikury palm)
3. *Borassus flabellifer* L. (Palmyra palm)
4. *Caryota mitis* Lour. (Cluster fish-tail palm)
5. *Chrysalidocarpus cabadae* H. E. Moore (Cabada palm)
6. *Cocos nucifera* L. (Coconut palm) — all varieties, including Malayan dwarf.
7. *Corypha* spp.
8. *Dictyosperma album* (Bory H. Wendl. & Drude (Hurricane or Princess palm)
9. *Latania* sp.
10. \**Livistona chinensis* (N. J. Jacquin) R. Br. ex Mart. (Chinese Fan palm.)
11. *Mascarena verschaffeltii* (Wendl.) Bailey (Spindle palm)
12. *Phoenix canariensis* Hort. ex Chab (Canary Island date)
13. *Phoenix dactylifera* (L.) Date palm)
14. *Phoenix reclinata* Jacq. (Senegal date palm)
15. \**Phoenix sylvestris* (L.) Roxb. (Sylvester date palm)
16. *Pritchardia pacifica* Seem. & H. Wendl.
17. *Pritchardia thurstonii* F. Meull. & Drude
18. *Trachycarpus fortunei* (Hook.) Wendl. (Windmill palm)
19. *Veitchia merrillii* (Becc.) H. E. Moore (Christmas palm, Manila or Adonidia)

**Quarantine Area** — Entire counties of Broward, Dade, Hendry, Martin and Palm Beach; and that portion of Monroe County not considered to be mainland.

**Suppressive Area** — Collier County. This county has been engaged in an intensive injection and tree

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removal project on all hosts exhibiting LY symptoms for the purpose of hopefully achieving complete eradication. Therefore, all host material moving into Collier County from the Quarantine Area must be accompanied by a special permit. Previously a permit was not required.

**Florida Requirements** — A special permit is required for movement of all hosts outside both the Quarantine and Suppressive areas. If anyone is interested in obtaining a permit, contact your local Division of Plant Industry Plant Specialists.

\*New Hosts

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### FOUR MACHINES IN ONE.

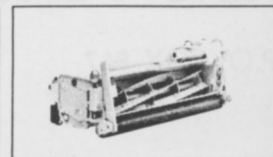
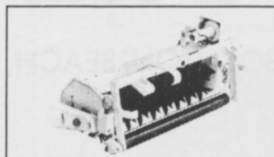
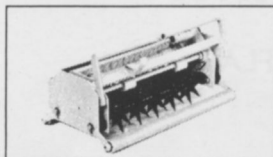
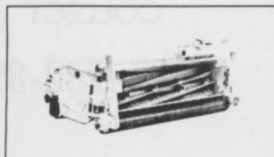
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**Triplex Verti-Cutter:**  
patented, thin offset blades remove thatch and grain quickly and easily.

**Triplex Utility Mower:**  
ideal for approach and tee mowing. Variable speed permits cutting of all grasses. Ideal general purpose mower.



Hahn, Inc., Turf Products Division, 1625 N. Garvin, Evansville, Indiana 47711

# Hahn

## POINT . . . PESTICIDES

Pesticides are of great benefit to man. They have saved millions of lives through control of disease-carrying insects. They have minimized catastrophic crop damage by insects, weeds, plant diseases, rodents, and other pests, preserved valuable forest and parkland from insect destruction, and protected household against damaging beetles, moths, and other bugs. Generally, they have provided a higher quality of life for man. However, pest control chemicals are poisons that, if used improperly or without sufficient knowledge of their sides effects, can endanger man and animals due to their toxicity. In addition, potential future hazards to human health and wildlife can be created by residues from some long-lived pesticides that may build up in the food chain and cause widespread contamination of the environment.

The risks or hazards of using chemical pesticides have increased in recent years with the sharp rise in their consumption by agriculture, industry, householders, and the government. In 1970, United States production of pesticides and related products totaled 1,034 billion pounds, with sales valued at \$870 million. Some 800 million pounds of pesticides are used each year in the United States and about 40 percent is applied by agriculture.

Some 32,000 pesticide products — including insecticides, herbicides, plant growth regulators, rodenticides, bactericides, and fungicides — made from one or more of 900 chemical compounds are currently registered with the U.S. Environmental Protection Agency (EPA).

Pesticides can be widely dispersed in the environment, mainly by the action of wind and water. The most significant concentrations are found in and near the areas of intensive use, but traces have been found in the Antarctic and other areas far from the area of application.

Given the important benefits of the use of pesticides, the critical challenge has been to institute stronger, more extensive mechanisms to prevent pesticides from harming human health and the environment.

## STRAIGHT SHOTS

Research in Canada reveals that 40% of all mental patients are admitted in autumn, 30% in winter, 20% in summer and only 10% in spring.

The essay of an 8-year-old reads: "A mother is a person who takes care of her kids and gets their meals and if she's not there when you get home from school you wouldn't know how to get your dinner and you wouldn't feel like eating it anyhow."

Scientific data published around the world every 24 hours would fill 7 full sets of the Encyclopedia Britanica. Reading around the clock day after day, one man would need 460 years to cover 1 year's output.

A study finds that people who sleep 7 hours a night have less heart disease than those who sleep 9 or 10.



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## EDITORIAL

### ***"The Forgotten South"***

The recent G.C.S.A.A. conference and show held in Portland was a tremendous success in many ways. A record attendance of 5,300, over 200 exhibitors, good informative educational sessions and a beautiful friendly host city are a few examples.

In many other ways it was very disappointing. A two day pre-conference seminar was held on pesticides. On numerous occasions the speaker referred to bent, fescue and Kentucky bluegrasses. Not once during the two day session was bermudagrass mentioned. Not one topic during the four days of educational sessions dealt with problems affecting Southern turfgrass operations.

The executive board of the G.C.S.A.A. must pause and evaluate the direction our association is taking. If you draw a line from Virginia to Texas, no state south of this line is represented on the executive board, educational committee or the very important special study committee which will explore possible new directions for G.C.S.A.A.

Each year the percentage of G.C.S.A.A. members from the South grows bigger. We want to be a part of and grow with the National Association. It is time we looked at not what is best for the North, South or Far West but what is good for the Association.

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