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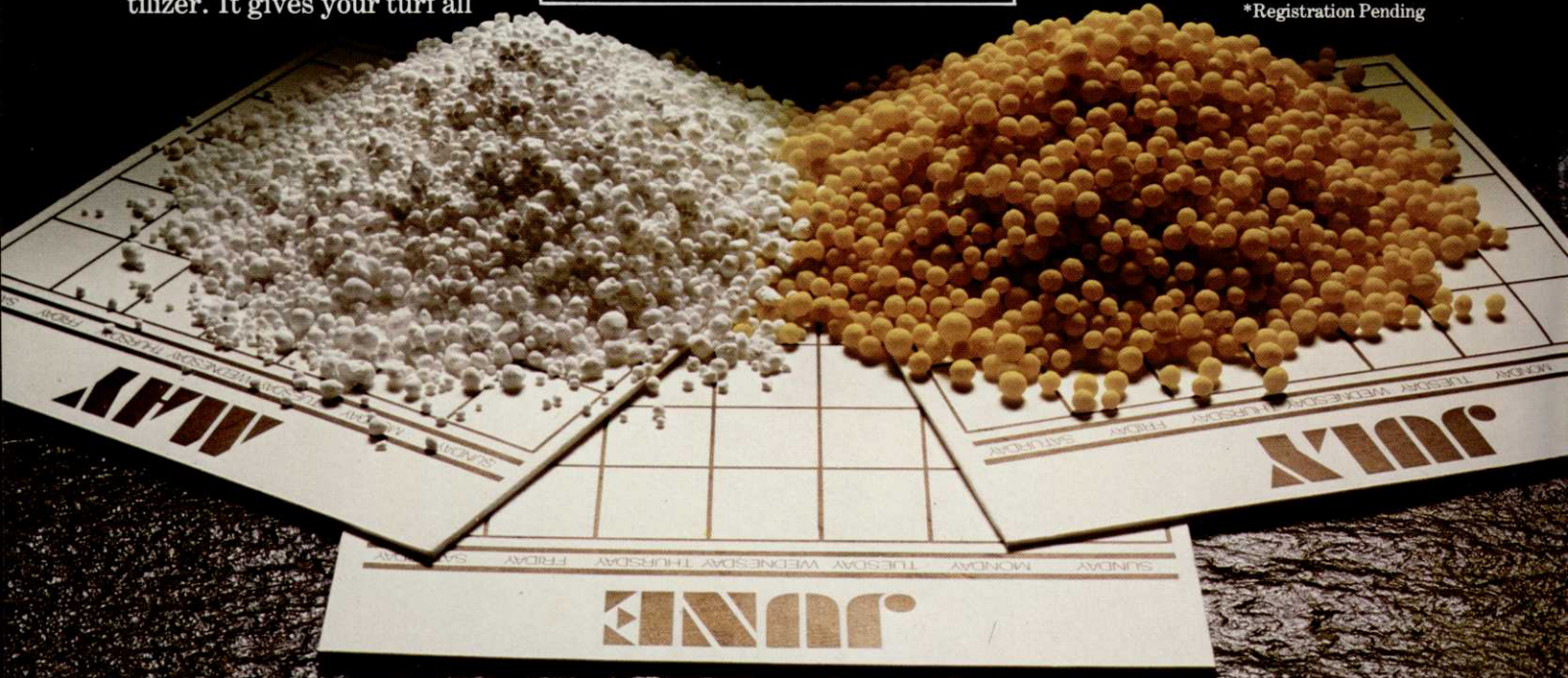
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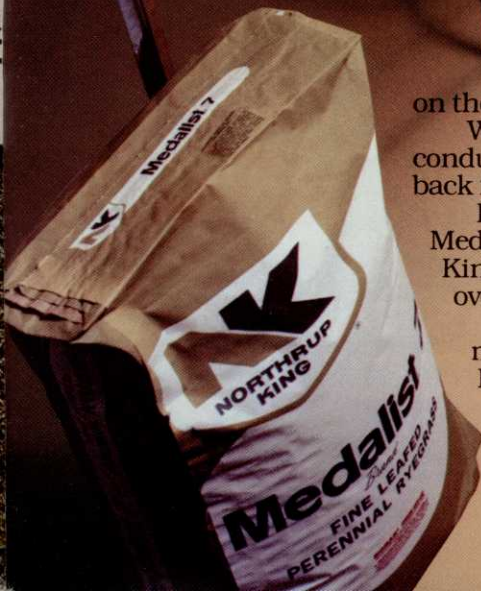
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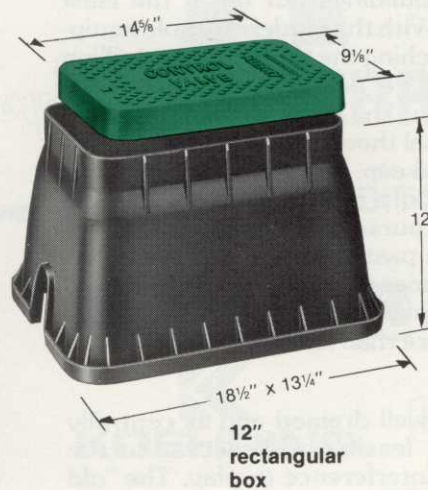
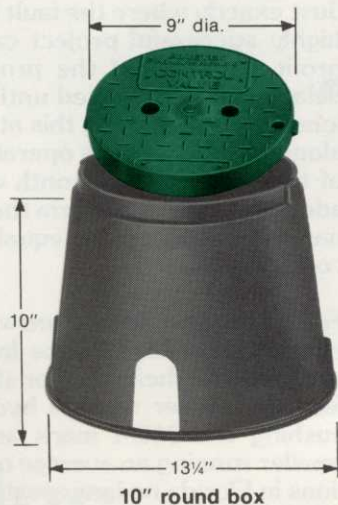
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# The Gator Growls

By DAN L. HALL JR.  
Imperial Golf Club



The maintenance complex buildings and area used for storage of materials, parking and repairs of equipment as well as employee areas come in many various designs and concepts of what the facility should be; principally those of the golf course superintendent in charge at the time of construction. We won't endeavor to elaborate on the facets but will give an outline of what the principal areas of the complex should consist:

- A- EQUIPMENT REPAIR \* PARTS STORAGE
- B- EQUIPMENT PARKING
- C- SMALL EQUIPMENT & TOOL STORAGE
- D- CHEMICAL STORAGE
- E- MATERIALS STORAGE
- F- EMPLOYEE FACILITIES
  - 1- Lunch and meeting area
  - 2- Rest rooms and showers, both for men and women
  - 3- Employee and guests parking
  - 4- Maintenance administration offices
  - 5- Nursery, greenhouses, plant propagation areas

The most possibly over-looked of all new golf facilities and the least considered is the land site as well as the areas above listed. For some reason even the best of all well planned projects never consider this part of the project until the last conceivable moment and the area is more than likely to be allotted the barest minimum of project funds once begun. Primarily the site is usually the poorest on the property and the buildings put up at the least possible costs imaginable. With the modern 18 hole equipment inventory fast approaching the three quarter million dollar figure, this amounts to nearly  $\frac{1}{4}$  to a third the course costs less land value. The thousands of dollars in equipment and the additional thousands eventually spent in its maintenance and upkeep are probably the least planned and thought of part of a multi-million dollar package. Anyone involved in course maintenance who has skimmed on this phase the past twenty or so years has already paid probably ten times the costs of a well planned and built maintenance complex at the time of the original construction and that is more than likely a very conservative estimate.

Ideally the area should be well drained and as centrally located as is economically feasible with access to the outside and a minimum of interference to play. The "old barn" concept is no longer practical. Modern buildings, either pre-fab or built on site, can be attractive in themselves as well as esthetically landscaped to provide an appearance that can be conducive to the entire scope of the project. This heart of an expensive operation can no longer be placed in an "out of sight out of mind" location within the highly costly projects now necessary to attract the potential buyer. This area is now the hub of the entire

complex wheel. The golf complex will as a general rule reflect the attitudes employed in the location and buildings essential to the upkeep of the surroundings. In simple language, the long run results in the golf course itself will be, in most cases, exactly the parallel of its maintenance H.Q. and never the twain shall meet.

I have recently visited four of the type of projects described and these are the findings. All top of the line with so called unlimited funds to attract nothing but top echelon potential clientele to set the scene:

#1- First class all the way including the maintenance complex, with an operation center equal to many of the fine homes; that was ready almost at the time the course was to be planted.

#2- First rate all the way but the maintenance center was a greenhouse frame with a little plastic. Now this center is in one end of the cart shed and the complex maintenance area is still on hold months after opening with nothing in sight to date. At the least, \$100M in equipment is parked in the weather.

#3- At the time of opening for play this project had all its equipment, conservatively estimated to be nearly \$485M not only exposed to the weather but to trespassers as well with not even a Port-A-John for its employees.

#4- This course is now under the super's care with over \$350M in equipment under the same conditions as the above but the \$5 million dollar club house is nearly completed and the golf maintenance center was just getting its slab poured while there.

Just exactly where the fault lies is not our concern but no highly successful project can expect to realize the full profit potential of the project when such planning is delayed or over-looked until the last minute. In the opinions of fellow supers, this attitude toward the equipment alone will decrease its operational life at the least, a ration of two to one. One month without proper cover and an adequate area to perform the barest preventative maintenance procedures is equal to two months of proper conditions.

For years, the Florida answer has been to put all small equipment inside and the larger outside or if fortunate, under an overhead roof or shade tree. This is not likely a feasible answer when a hydraulic fairway unit alone is pushing the \$50M mark and units half that size and smaller running an average of \$15M plus. Moisture conditions in Florida no longer call for just a roof or even a three sided building. We all have seen equipment stored in totally enclosed buildings even with either power or wind

(Continued on page 20)



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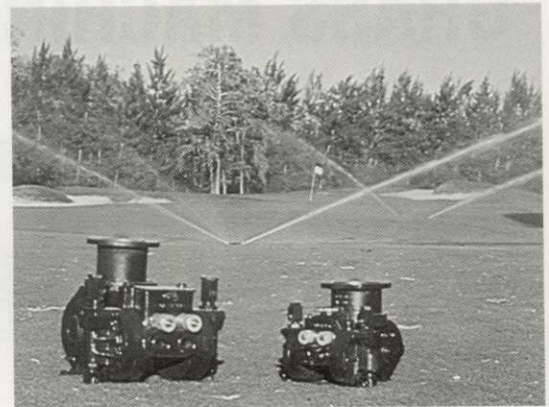
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# The Florida Green

The Official Bulletin of the Florida Golf Course Superintendents Association  
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## ABOUT THE COVER

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## President's Message

It is quite a challenge to become the president of the Florida G.C.S.A. at a point when our association can begin to investigate new areas of involvement while at the same time the G.C.S.A. is implementing new programs for the golf superintendent. My predecessors have done a marvelous job in coordinating our local chapters, promoting the Florida Green and an overall first class revitalization of what used to be a "dead horse." Because of our solid Executive Board and proven operating procedures, I feel that we have the capability to prepare different ventures for the State Association. Any new endeavor will succeed when the individuals get behind the program and make it work for the betterment of our profession. These ideas will be discussed at future board meetings and will be reported to the individual superintendents at your local chapter meetings.

The space set aside for the president's message gives me an opportunity to focus on different topics that face the Florida G.C.S.A. or items that affect the superintendent in his day to day environment.

The mediator between the individual member and the State Association is your chapter's External-Vice President. Make sure that he is called on to give a report at each local function, so you have a chance to look at the minutes of the Executive Board meetings or make suggestions to the Florida G.C.S.A. Please remember that you are invited to attend any of our quarterly meetings which are held at:

Florida Turf-Grass Conference  
G.C.S.A.A. Convention  
Poa Annua Classic  
Crowfoot Open

Your lines of communication are also open to the Executive Officers at any time. \*\* (See Page 12)

One of the factors that has helped us grow into a well respected and better paid profession has been the ongoing work of the association. Some of the newcomers in the business are unaware of the benefits of a strong organization plus the numerous individuals that have been involved before, need to lend a hand to put some "spunk" back into your local chapter.

It has been brought to my attention that the superintendent can better assist the functions of the golf club by being more involved in the game itself. I am not professing that you need to arrange five or six golf outings a week, but I think you need to make an honest effort to play and improve your talents. A golfing member will have more confidence in your maintenance programs if he or she knows that you view the course as a golfer and not just as a turf manager. Involvement in the "game of golf" does not just mean playing; you should take time to get involved with local Rules Committees, Amateur Associations, Course Rating Teams of Junior Golf Programs. I honestly feel that these types of efforts will enable you to gain the respect and admiration of club members and officials.

Until next time. ■

Kevin Downing

# Central Florida Crowfoots



By JIM ELLISON  
The Bay Hill Club

The Bay Hill Club and Lodge Maintenance Facility has experienced many improvements because of the continuing need for more efficient and modern storage and operating conditions. Each year we will take a particular area of our maintenance facility and up date it to meet our growing needs.



## OFFICE AREA AND EQUIPMENT STORAGE

The recent addition to the maintenance area includes a new office complex with a large private office for the superintendent, a large office area for the assistant superintendent and the office secretary, plus a small foyer waiting area for visitors. On the right hand wall as you enter the office is a large master irrigation plan of all twenty-seven holes. This plan is laminated on a large sheet of plexi-glass mounted in a wooden frame. The plexi-glass allows us to write on job locations and descriptions, then afterwards, can be easily cleaned off. Down to the far end of the master plan we have a master control system for all irrigation controllers on the course, and control switches for all irrigation pumps, and a main line pressure gauge.

The first rolling door down from the office is used for storing small miscellaneous tournament items. The second rolling door area is used for a painting room. For signs, tee markers, putting cups, ball washers, etc. The third rolling door area is used for tournament storage for ropes, stakes, and metal trash racks. Next down we have drive-under equipment storage — not shown in picture is

*(Continued on page 15)*



## DAILY SERVICE AND CREW QUARTERS BUILDING

The daily service building is primarily used for parking equipment that is used on a day to day basis, such as greens mowers, tee mowers, transportation vehicles, and a large variety of small spreaders and hand tools. Sectioned out within this building is a men' locker room, shower and restroom facility. A female restroom facility, a designated lunch area and a private miscellaneous course supply room. An additional wing has been added to the far left side of the building for storage of all fertilizer and chemicals. Other additional wings include a complete irrigation parts and repair room, and a complete mechanical shop for service and maintenance of all equipment.

(Continued from page 14)

an equal amount of drive-under shelter directly across from area shown.

The large 50 x 100 metal building is used only for the Bay Hill Classic Tournament equipment, such as large scoreboards, 18 status boards, fencing to protect residential areas during the Tournament, and hospitality pavillion tents and equipment.



## A SIGN FOR EMPLOYEES TO OBSERVE

The above illustrates a sign as a reminder to all maintenance personal as they leave the maintenance facility in route to their responsibilities on the course. The sign reads: BE PROUD OF YOUR COURSE—SHOW COURTESY TO GOLFERS—POLICE FOR TRASH—SHOW PRIDE IN YOUR WORK AT ALL TIMES.

Regardless of the size of any maintenance facility, the most important factor is that it be neat, clean and organized as possible at all times, and from that you will see better attitudes and work habits throughout your entire staff. ■

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# South Florida Sunshine



By BRAD G. KOCHER  
Inverrary Country Club

## The Hub of the Operation -- 'The Maintenance Complex'

What is it that every Golf Course Superintendent has but is generally dissatisfied with? You have guessed it — his maintenance complex. Most of the existing complexes are antiquated, poorly planned and stuck somewhere at one end of the golf course. Some have dirt floors, small and inadequate storage areas and little consideration for mechanics repair area. Storage of equipment, employees lunch rooms, decent restrooms and office space are often overlooked when maintenance facilities are constructed during development.

Several avenues concerning maintenance complexes will be explored. Since there are few courses presently under construction in the South Florida area, we will look at improvements that can be made to existing facilities along with basic necessities for every complex.

The basic reason for the maintenance complex is that it should function as the hub of golf course and/or grounds maintenance activities. It is generally the area where all or most of the equipment is stored and maintained. It is also the area where all employees report to work, eat lunch and clean up before leaving work. At many complexes, it is the area where company equipment is fueled, nurseries are housed, pump stations located and an array of other activities often take place.

Basic necessities dictate that the maintenance complex houses around \$200,000-\$250,000 worth of equipment for each 18-hole course. In most situations the equipment is housed inside, however if equipment is stored outside, it should be under some form of overhead cover.

Foul weather is a major contributor to rust and rotting of equipment. With such large monetary investments in equipment, a little care will make the equipment last longer and look better. Also, employees tend to take better care of equipment that "looks new," and golfers prefer to see equipment on the course that is not rusted and weather beaten. Well kept equipment exudes care and professionalism.

The area where equipment is stored and fueled should be paved. Any time there is a lot of traffic, equipment makes an absolute mess in non-paved areas. It is hazardous both to employees and the equipment. Additionally on the outside of the building, other flammable materials should be stored such as oils and mineral spirits.

The inside area and arrangement are probably the most important facet of the maintenance complex. Included inside should be superintendent, assistant and head

mechanic office space. Restrooms, employee lockers, shower and lunch room areas should also be included but are probably the most overlooked areas in some of the older maintenance "barn" designs. Bag fertilizer, chemical room, parts storage and equipment storage are the other items that will need to be considered when arranging the maintenance complex.

Adequate office space is crucial to the satisfactory performance of the golf course superintendent, yet too often we see a desk in a 6 x 8 office with no provision for file cabinets and other record-keeping necessities. In these days of budgets of \$300,000 on up, efficient management of men, money and machines is increasingly important, and the Superintendent must be an organized record-keeper to do his job justice. The age of the mini-computer is here and will soon be an important ingredient in golf course management and will enable us to perform more efficiently. Additionally, desk and storage space should be provided for the assistant and the head mechanic. Each of these positions requires routine maintenance record-keeping, inventories and ordering. Additionally, the mechanic must have storage space for parts manuals and parts inventory lists.

Employee related facilities are often the most overlooked in the maintenance complex. We should all remember that our employees are the backbone of the operation and that their needs and comforts are infinitely important. Employees spend 8+ hours a day at their job and they should be made to feel that their needs are as important as ours. Every maintenance employee should have some sort of locker or storage area. Changes of clothes, dry shoes, rainwear and boots are items that should be stored there. Proper restroom facilities should be adequate for crew size and inspected and cleaned daily. At least one shower should be provided. Lunch rooms with enough space for all employees should be available and air conditioned — fans at the least. All employees will be most appreciative and will feel part of the team if we respond to their needs.

Chemical storage is another important area of the complex. The chemical storage room should be adequately sized to handle as many chemicals as you would ever have on hand. The room should be locked at all times when not in use. A label should be on the door stating "Danger" or "Danger Toxic Chemicals." Adequate ventilation should be provided in the chemical room. Also, an emergency eye flush and running water should be very near. Chemical splashed in the eyes or on the skin must be dealt with quickly.

*(Continued on page 17)*



(Continued from page 16)

Parts storage facilities are another consideration in proper maintenance building floorplans. It is a necessity to keep sizable inventories in parts in order to readily repair downed equipment. Many courses, especially 18-hole courses, have limited amounts of "back-up" equipment to utilize when an important piece of machinery is down. Therefore, parts must be on hand to reduce downtime and put the equipment back into service. An organized parts room is an integral part of the present day maintenance facility.

Often, granular fertilizers must also be stored in the maintenance area. Depending on the preferred amounts of inventory, we must allow adequate space to store the fertilizers. We must also have room to move fork lifts in and out of the area because it is much neater to stack the fertilizer on pallets. In that manner, the fertilizer stays dry and can be stacked one pallet on top of the other.

Equipment storage must also be considered. Usually the small equipment is kept inside such as green and tee mowers, trap rakes, utility vehicles, small walking mowers, mid-size rotary and reel mowers, weed eaters, etc. Neat arrangement will allow for an organized shop area and less damage to equipment. Marking of the floor with paint helps in many situations.

The maintenance complex of the 80's will be designed differently from one 20-30 years ago. If superintendents can update their "barns" of yesterday they will ultimately have a better operation. Employees will be happier, mechanics will have suitable work areas and the total maintenance operation will run more effectively. ■

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# Suncoast Sails

By LARRY LIVINGSTON  
Gator Creek Golf Club

## Constructing a Golf Course Maintenance Building

All too often when building a golf course the maintenance building is put on the bottom of the priority list. This misconception has plagued golf course superintendents for years. The maintenance building is the nucleus of the maintenance operation and should be planned with this in mind. Not only does the complex serve as a place to store equipment but also houses equipment for maintenance and repairs, headquarters for the crew, fertilizer storage, chemical storage, topsoil storage, and administrative offices for the superintendent, his assistant and secretary. A facility that is constructed without fulfilling these needs is totally inadequate.

When locating the maintenance facility the following facts should be addressed:

- 1) The complex should be centrally located on the golf course out of "in play" areas.
- 2) It should have accommodations for large truck traffic.
- 3) It should be located in an area that is relatively flat and well drained for ease of equipment maneuverability.
- 4) It should be easily connected to utilities.
- 5) Plenty of room should be allowed for employee parking.
- 6) The entire complex should be well screened from the golfer's view.

When designing the building several things should be considered. The type of construction materials should be durable and easily maintained. The exterior design should complement the surrounding buildings when feasible. The number of windows should be limited for security reasons. Skylights should be used wherever possible for natural lighting. Plenty of electrical outlets should be used throughout the building. Fuel pumps should be located in a convenient location away from normal traffic flow.

The equipment maintenance area should be separate from equipment storage and relatively close to the administrative offices. It should be insulated and equipped with heat and air conditioner. It should also contain plenty of bench space, 1/2 ton overhead hoist, hydraulic lift, grinder, drill press, parts washer, air compressor, reel and bed-knife grinder, welding bay, area for spray painting, portable work bench, sufficient lighting, and a desk, file cabinet, etc., for the mechanic. Also included should be an inventory room with adequate storage area for equipment parts inventory, golf course supplies, irrigation parts, etc. This area should be accessible to authorized personnel only.

This area should be accessible to authorized personnel only.

A personnel area should be provided with restroom and shower facilities, lockers, lunch table, refrigerator, vending machines, microwave oven, etc. This area should be heated and air conditioned and located relatively close to the administrative offices.

The fertilizer and chemical storage areas should be located in an area convenient to large trucks. It should be constructed of corrosive resistant materials and accessible to authorized personnel only. Ideally the two should be separate rooms.

The topsoil storage area should consist of a concrete floor with side walls that are at least 6 ft. high and built strong enough to contain the soil being stored. Enclosing the structure is recommended to keep the soil dry and free of contaminants.

The size of the maintenance facility varies with the type and size of the golf course. Some general recommendations for a typical 18-hole golf course are listed below. The figures should be considered minimum.

Equipment Storage	6,000 sq. ft.
Equipment Repair	1,300 sq. ft.
Inventory Room	250 sq. ft.
Fertilizer Storage	450 sq. ft.
Chemical Storage	250 sq. ft.
Administrative Offices	300 sq. ft.
Employee Lunch Room	350 sq. ft.
Restrooms 7 Showers	100 sq. ft.
Total Floor Space	9,000 sq. ft.
Topsoil Storage	1,000 sq. ft.

A wash rack of 1,000 square feet with proper drainage is essential for keeping the equipment clean. The area around the building should be paved and a security fence installed around the entire facility.

One must realize that a poorly designed maintenance complex is conducive to inadequate golf course conditions. A golf course wishing to upgrade course conditions and maintenance programs should take a long, hard look at the support facility from which its personnel is operating. If found deficient, proper steps should be taken to obtain an adequate maintenance facility. ■

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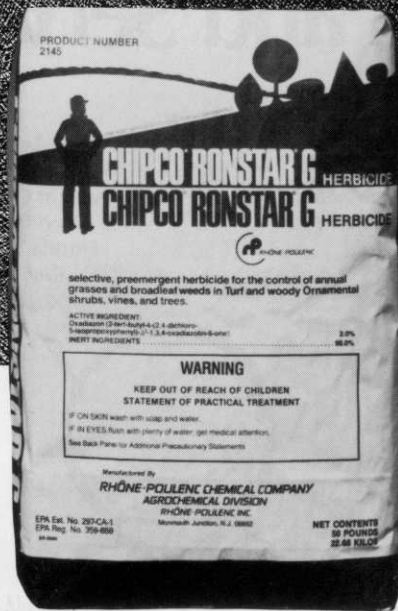
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# ZAUN

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driven ventilation so moist during our summer months that the operator must wipe the seat in the morning before use.

With wages hitting the .10 to .15 per minute rates, costs in employee training and fringe benefits, turn-over, etc., prime consideration is now demanded to be directed toward the employee area described. After all, nearly one-third their day and one-half their waking moments are job related. With wall-to-wall cart paths and the emphasis on "let 'em play," adverse weather conditions dictate unpleasant working days. Employees need adequate areas to warm and dry themselves as well as a decent area in which to eat their meals and to take their breaks. Rest rooms and showers are no longer luxuries but required by law. Proper employee parking without the possibility of vehicles being hit by either equipment or golf balls is almost mandatory. The maintenance complex and the accompanying facilities for all employees sets the attitude for morale and work productivity. If you, the superintendent and/or the club, "don't think of me and your equipment, why should I think of you, your equipment or your golf course." Just think of the dollars wasted in all areas where this type of attitude prevails. This is not an un-common occurrence even in today's world but those displaying these attitudes are generally not in our business too long.

Each aspect of the ideal maintenance center must be thoroughly planned and designed as well as executed. Not only for the present but for future expansion if that is even a remote possibility. If this area is limited in origin and later plans call for expansion, just think of trying to operate within the area originally designed for 9 or 18 holes and the future calls for 9, 27, 36 or even 72 holes. This is especially true when the available landsite can not provide the necessary space and the operation must be decentralized as well. Location of just the fuel storage distribution can be a costly problem once restrictions have been set. I have seen such operations where travel time alone was 15 minutes each way. In addition to the risen fuel costs, at \$6.00 per hour, that is another \$3.00 at each fueling, and this doesn't reflect additional wear.

The only answer is to PLAN, PLAN, then PLAN some more if these problems are to be possibly avoided. Fellow supers are the best source of information and who best to get directions than from someone who has already travelled the road. Even better, get your superiors to go with you and take your plans. Better still, call in a number of your peers that you know have had the experience you are planning for; let them meet and have a brainstorm with all concerned and make suggestions for your consideration. Over the years I have planned and seen through 5 complexes and the best of all in-put I received was from the peers and on site examination of what they had done. Fantastic changes have been made in nearly all of these complexes and all for the better. We all know that funds are the greatest limiting factor and that Taj Mahals do not make a complex but excellent planning and judicious use of the funds available beats a shed, a shade tree, bare dirt floors, and a pick-up for your office. There are still a few of these around, so use them too; when you make your plans. ■



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## BUCTRIL® HERBICIDE LABELED FOR TURF

According to Rhone-Poulenc Inc., Agrochemical Division Marketing Manager Lionel Wells, BUCTRIL® herbicide may now be used on established turf to control a wide variety of broadleaf weeds.

The recently approved addition to the existing BUCTRIL herbicide label permits turfgrass managers to apply BUCTRIL herbicide to established bentgrasses, Kentucky bluegrass, fescues, ryegrass, Bermudagrass and St. Augustinegrass to control seedling broadleaf weeds.

"BUCTRIL herbicide is a contact weed killer that controls weeds more quickly than most other available selective turf herbicides, and is very effective against prostrate spurge, a hard-to-control turf weed," says Wells.

To control a wider spectrum of weeds in established turf (except bentgrass greens), BUCTRIL herbicide may be tank mixed with MCP, dicamba, MCP and dicamba, or 2,4-D and MCP.

Other uses for BUCTRIL herbicide, previously labeled, include broadleaf weed control in barley, oats, wheat, rye, flax, garlic, newly planted grasses for sod or seed production and non-crop areas. ■

## NEW LESCO SPREADER

Lakeshore Equipment & Supply Co., Elyria, OH, has produced a new, high-quality rotary spreader designed for professional, multi-use spreading of dry materials such as seed, fertilizer and granular pesticides.

The push-type rotary LESCO Spreader is virtually corrosion-resistant with a polyethylene hopper; stainless steel on/off assembly, impeller shaft and axle; Delrin gears and impeller and powder-coat epoxy frame coating; 4.10/350-4 pneumatic tires and ball bearings and zerk fitted wheels. The material capacity of the LESCO Spreader is about 2,700 cubic inches. The weight capacity varies from 50 to 80 pounds depending upon bulk density of material. The full hopper contents can cover from a few thousand to more than 80,000 square feet depending on factors such as particle size and bulk density. The material is metered through the stainless steel on/off assembly and dropped onto the spinning impeller.

An electric power attachment with battery kit to make units self-propelled is in the prototype stage and will be introduced in 1983. ■



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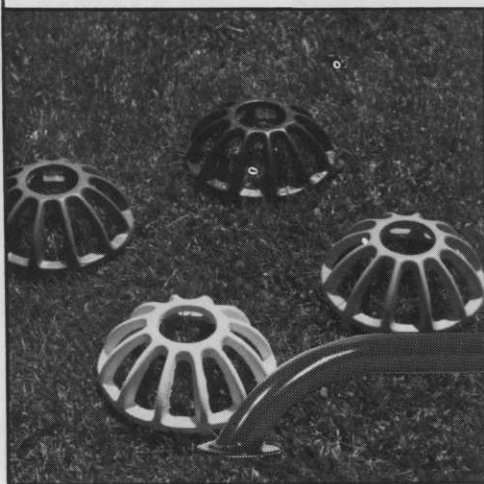
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long service and beautiful course decor! Call or write today. Our distributors can give you instant service.

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## ON THE NATIONAL SCENE

by: John P. Hayden CGCS  
Director, GCSAA



The fall Board meeting was held in Orlando, Florida on the 30th of October thru November 3rd and many items were discussed and reviewed. The most important and critical being the dues structure of your national association over the next few years. As you know, I, and your state association, favored giving the Executive Board the authority to set the dues for the membership in the coming years but this was defeated and a one year dues structure of \$105.00 was adopted.

After reviewing the budget and the programs that GCSAA will be giving the membership in the next few years it became obvious to me and the rest of the Board that for good fiscal planning a dues structure should be adopted that we could live with in the coming years. It was therefore unanimously adopted that we present to the membership for their approval a rate of \$145.00 for 83, 84 and a \$20.00 rate increase for each year thereafter for 2 years.

I feel this is a sound dues structure and if you add up all the +'s you receive from your national association (I.E.: Insurance, National Trade Shows, Continuing Education) you receive greater benefits than you pay for under the present dues collected.

The other item your Board worked on while in Florida was the proposed move of headquarters from Kansas to Florida. On Monday afternoon we met with the committee of 100 from Tampa. This city wants the association very badly and showed us some sites that we might consider. They also presented us a plan for financing such a move.

On Tuesday we met with the Orlando Orange County Convention Bureau and toured their new facility where we are tentatively booked for the 1988 convention. While this is a very nice facility it appears to me to be somewhat small for our convention and show. Hopefully by 1988 their 2nd phase will be completed and we can hold our show in Orlando as planned as this is a most desirable, family oriented city for our meeting.

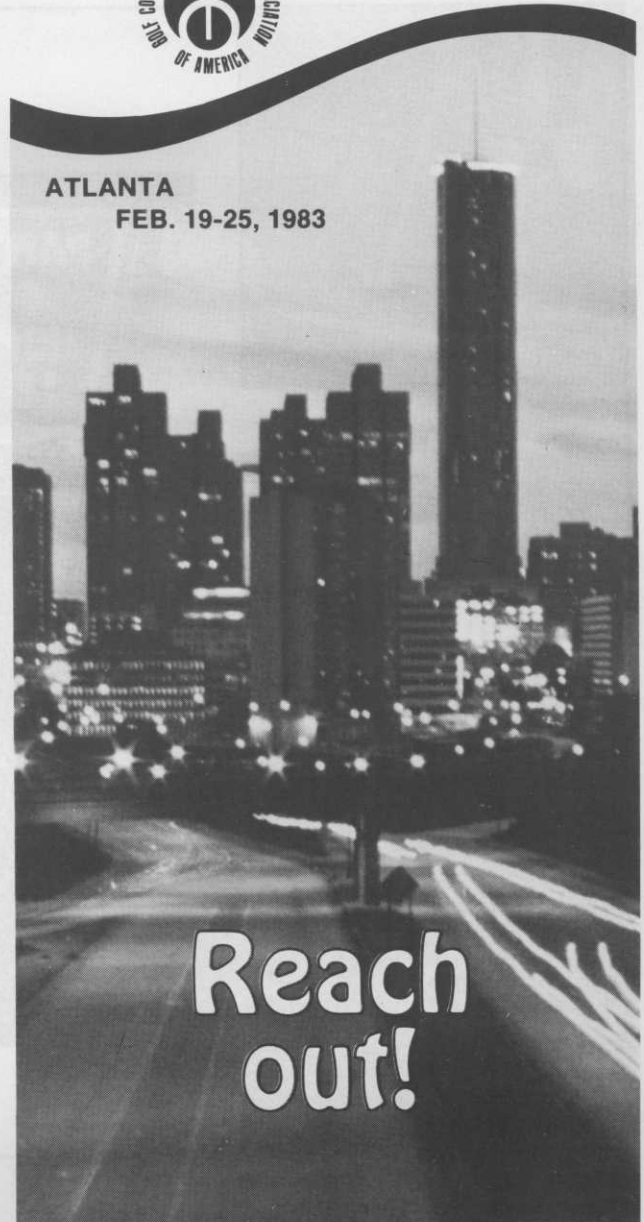
It has been almost a year since I took office and it has become more obvious to me each day how critical it is to have a dedicated and professional staff at national headquarters representing us and giving us the programs that will make us more professional in our every day work place.

If I can be of any help to you or if you have any ideas to benefit our association do not hesitate to call. ■

## 54<sup>TH</sup> International Turfgrass Conference & Show



ATLANTA  
FEB. 19-25, 1983



# Reach out!



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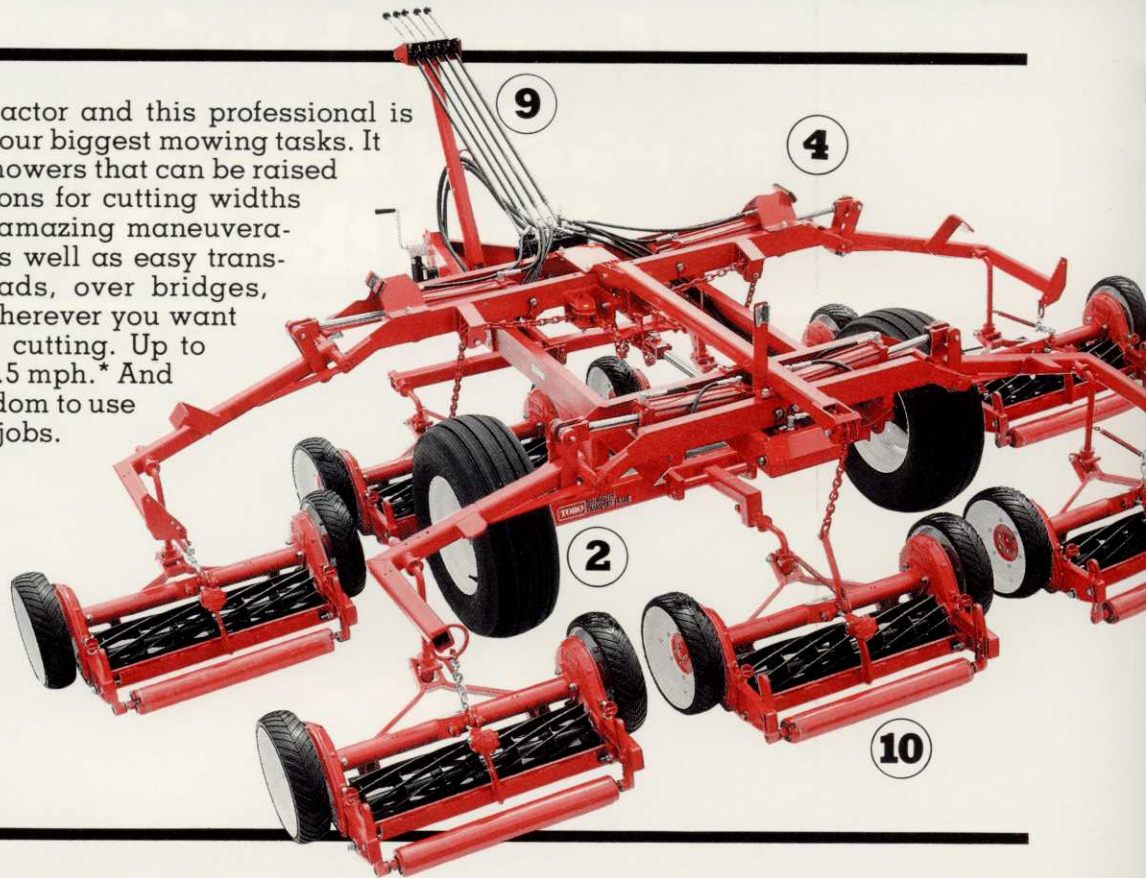
**What moves  
from job to job  
as easily as it moves  
about the job?**



**Our Reelmaster<sup>™</sup>  
Transport Frame.**

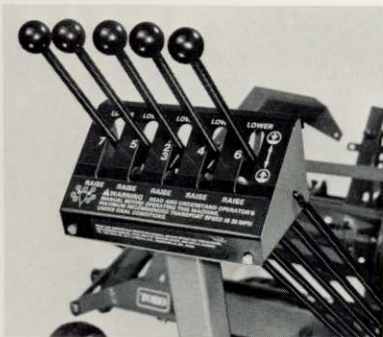
# INTRODUCING THE TRANSPORT FRAME FEATURING HYDRAULIC MANEUVERABILITY COMBINED

**J**ust hitch it to a tractor and this professional is ready to take on your biggest mowing tasks. It has a gang of 7 reel mowers that can be raised in various combinations for cutting widths of 6'9" to 14'4". Plus, amazing maneuverability in tight spots as well as easy transportability down roads, over bridges, through gateways, wherever you want high capacity formal cutting. Up to 9.4 acres an hour at 5.5 mph.\* And it allows you the freedom to use your tractor for other jobs.



## WE ENGINEERED IT TO KEEP YOU CUTTING. WITH AN EXCELLENT QUALITY OF CUT.

**1 WE STARTED WITH 7 MOWERS THAT LIFT ON COMMAND.**



The operator simply pulls the hydraulic levers to lift mowers 1, 2 and 3 as a unit, or mowers 4, 5, 6 and 7 separately.

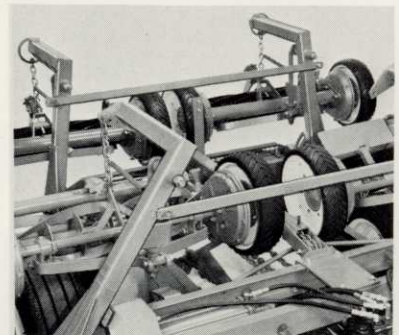
**2 WE PUT ON HIGH FLOTATION TIRES,** to reduce marking of turf, create more stability on hillsides.

**3 WE MINIMIZED "STREAKING" OF TURF** with a frame design that allows sufficient overlapping of the mowers during turns.

**4 WE "FLOATED" THE FRAME ARMS** to allow mowers to hug the ground, avoid mismatching.

**5 WE TRANSFERRED A PORTION OF ITS WEIGHT** to the tractor in the mowing mode, to increase traction and minimize compaction.

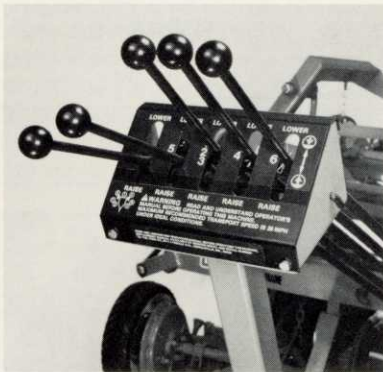
**6 WE ADDED LOCKUP DEVICES** to prevent lowering of mowers during transport.



# NEW REELMASTER™ CAME FROM TORO: LIFT ARMS FOR AMAZING WITH EASY TRANSPORTABILITY.

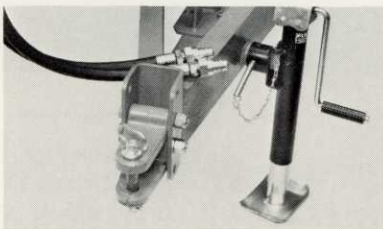
## 7 WE PUT DETENTS ON THE CONTROL LEVERS

so that once the operator engages the control lever to raise or lower the mowers, he can remove his hand. The lever stays in position till the desired movement is completed and then returns to neutral.



## 8 WE MADE HITCHING A SNAP.

With a screw type jack to lift and hold the tongue, plus quick connect hydraulic couplers.



**9 WE BUILT IN ADAPTABILITY** to many tractors. With an adjustable control tower for easy to reach lift controls and hitch height adjustable to most turf tractors ranging upwards of 30 PTO HP and 3,000 lbs.

**10 WE GAVE YOU A CHOICE OF THREE MOWERS.** The best. Our Spartan® 5 or 7 blade, or our new Reelmaster 11 blade.

**11 WE INCORPORATED TORO QUALITY THROUGHOUT.** Proven design and components to keep you cutting day in, day out.

## AND FOR HIGH ACREAGE CUTTING WITH LOW TRANSPORT REQUIREMENTS, NOTHING BEATS OUR REELMASTER UNIVERSAL FRAME.

This rugged professional, which utilizes Spartan 5 or 7 blade, or Reelmaster 11 blade reel mowers, offers you four cutting widths:



**3 Gang: 7' Wide**  
4.7 acres an hour\*



**5 Gang: 11' Wide**  
7.2 acres an hour\*



**7 Gang: 16' Wide**  
10.5 acres an hour\*



**9 Gang: 21' Wide**  
14.1 acres an hour\*

The heart of our Reelmaster Universal Frame is a durable 3 gang unit with a 7' width of cut. You can easily and inexpensively expand this to a 5 or 7 gang configuration. The 9 gang configuration is

available as a complete package. And you get all these features:

**a. A FRAME BUILT TO LAST.** It's constructed of reinforced, welded angle iron and heavy gauge steel tubing.

**b. A FRAME THAT FLOATS.** To allow the mower to hug ground contours.

**c. LOW DRAWBAR POINTS** on the mowers. For positive traction.

**d. REEL DISENGAGEMENT KNOBS AND LIFT LEVER.** To raise rollers during transport.

**e. ADJUSTABLE HITCH HEIGHT.** For various tractor drawbar heights.



\*Assumes no reduction in total area mowed due to overlaps, turns, stops, etc., with a ground speed of 5.5 mph.

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# Specifications\*\*

<b>REELMASTER TRANSPORT FRAME — 7 UNIT (MODEL NO. 33457)</b>																														
<b>TRANSPORT WIDTH</b>	7'11" with Reelmaster 11 blade mower 7'10" with Spartan 5 or 7 blade mower																													
<b>CUTTING WIDTH</b>	14'4" with Reelmaster																													
<b>CUTTING CAPACITY</b>	9.4 acres per hour @ 5.5 mph. (Assumes no reduction in total area mowed due to overlap, turning, stops, etc.)																													
<b>LIFTING MECHANISM</b>	Hydraulic Lift — 1st, 2nd and 3rd cutting units operate together. Cutting units 4 through 7 operate individually. Units can be raised or lowered in any sequence.																													
<b>MAIN FRAME CONSTRUCTION</b>	Tubular and structural steel; bolted and electrically welded construction.																													
<b>WING LIFT ARMS</b>	Tubular steel, reinforced welded construction.																													
<b>AXLE ASSEMBLY</b>	Implement type. Maximum load capacity is 4940 lbs. at maximum tire inflation of 28 psi.																													
<b>TRAILER TRANSPORT WHEELS</b>	6 bolt, 15 x 8 LB implement style wheels, with 11 L-15, 6 ply rating implement rib tires; 18-25 psi tire pressure.																													
<b>TRAILER TONGUE</b>	Tubular and structural steel; welded construction. Trailer hitch is adjustable to 3 positions.																													
<b>CONTROL TOWER</b>	Adjustable 12½" horizontally and 7" up and down; operable from tractor seat.																													
<b>JACK</b>	Side-screw type trailer jack. 10" stroke. Stores inside trailer tongue when not in use. Load capacity 2200 lbs.																													
<b>HYDRAULIC SYSTEM CAPACITY</b>	Two gallons hydraulic oil with cylinders retracted.																													
<b>HYDRAULIC SYSTEM COUPLERS</b>	Quick-disconnect couplers for easy hookup to tractor.																													
<b>HYDRAULIC VALVE</b>	Open center, directional control valves, parallel circuit, stack design. Cast iron valve bodies, with hardened spools and plated for corrosion protection. Primary relief valve (1500±50 psi), non-adjustable. Relief valve prevents excess pressure build-up in the hydraulic system and safeguards the hydraulic pump and hoses. Field adjustable, hydraulic detents with automatic kickout return to neutral. Detent retains spool in raised or lowered position until system pressure returns spool to neutral.																													
<b>HYDRAULIC CYLINDERS</b>	Tie rod construction, 3" bore, double-acting cylinders; chrome-plated rods 1½" diameter for units 1, 2, 3, and 1½" diameter for units 4, 5, 6, 7; all with precision finished bore in cylinder tubes.																													
<b>HYDRAULIC HOSES</b>	SAE J517C, one-wire braid, ½" I.D. feed lines hoses from tractor to valve body. SAE 100R7, two braid, ¾" I.D. cylinder hoses with swaged fittings from valve body to hydraulic cylinders.																													
<b>CUTTING UNITS</b>	Spartan 5 or 7 Blade; Reelmaster 11 Blade Mowers.																													
<b>FRAME DIMENSIONS</b>	Approximate shipping weight is 1800 lbs. (transport frame without mowers).																													
	<table border="1"> <thead> <tr> <th rowspan="2">TRANSPORT FRAME WITH:</th> <th rowspan="2">TREAD WIDTH</th> <th rowspan="2">LENGTH</th> <th colspan="2">WIDTH</th> <th colspan="3">TRANSPORT</th> </tr> <tr> <th>TRANSPORT</th> <th>MOWING</th> <th>HEIGHT</th> <th>WEIGHT</th> <th>GROUND CLEARANCE</th> </tr> </thead> <tbody> <tr> <td>SPARTAN MOWER</td> <td>68"</td> <td>150"</td> <td>7'10"</td> <td>14'3"</td> <td>57"</td> <td>3560 lbs.</td> <td>7½"</td> </tr> <tr> <td>REELMASTER MOWER</td> <td>68"</td> <td>150"</td> <td>7'11"</td> <td>14'4"</td> <td>57"</td> <td>3560 lbs.</td> <td>7½"</td> </tr> </tbody> </table>	TRANSPORT FRAME WITH:	TREAD WIDTH	LENGTH	WIDTH		TRANSPORT			TRANSPORT	MOWING	HEIGHT	WEIGHT	GROUND CLEARANCE	SPARTAN MOWER	68"	150"	7'10"	14'3"	57"	3560 lbs.	7½"	REELMASTER MOWER	68"	150"	7'11"	14'4"	57"	3560 lbs.	7½"
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## REELMASTER™ UNIVERSAL FRAME

<b>3 UNIT</b>	Model 33115	<b>OVERALL WIDTH IN CUTTING POSITION</b>	<b>MOWERS WITH STEEL WHEELS</b>	<b>MOWERS WITH RUBBER WHEELS</b>										
<b>5 UNIT</b>	Requires Model 33115 & 33125		3 Unit	7'10"	8'2"									
<b>7 UNIT</b>	Requires Model 33115 & 33125 & 33135		5 Unit	12'4"	12'8"									
<b>9 UNIT</b>	Model 33845		7 Unit	16'10"	17'2"									
<b>CUTTING UNITS</b>	3, 5, 7, and 9	<b>MAIN FRAME CONSTRUCTION</b>	Reinforced angle iron and steel tube construction.											
<b>CUTTING WIDTH</b>	3 Unit — approximately 7' 5 Unit — approximately 11' 7 Unit — approximately 16' 9 Unit — approximately 21'	<b>CUTTING UNITS</b>	See Spartan or Reelmaster Mower specification sheet for more detailed information.											
<b>CUTTING CAPACITY</b>	<table border="1"> <thead> <tr> <th>UNIT</th> <th>ACRES/HOUR AT 5.5 MPH*</th> </tr> </thead> <tbody> <tr> <td>3</td> <td>4.7</td> </tr> <tr> <td>5</td> <td>7.2</td> </tr> <tr> <td>7</td> <td>10.5</td> </tr> <tr> <td>9</td> <td>14.1</td> </tr> </tbody> </table>	UNIT	ACRES/HOUR AT 5.5 MPH*	3	4.7	5	7.2	7	10.5	9	14.1	<b>OVERALL LENGTH IN CUTTING POSITION</b>	3 Unit	8'10"
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		5 Unit	8'10"											
		7 Unit	8'10"											
		9 Unit	11'8"											

\*Assumes no reduction in total area mowed due to overlaps, turns, stops, etc., with a ground speed of 5.5 mph.

\*\*Specifications and designs subject to change without notice. "Toro" is a registered trademark of The Toro Company, 8111 Lyndale Avenue South, Minneapolis, Minnesota 55420.

## COMMERCIAL PRODUCTS



**THE PROFESSIONALS  
THAT KEEP YOU CUTTING.**

## NORTH FLORIDA

# DIVOTS

by: John P. Hayden CGCS  
San Jose Country Club



When I arrived at San Jose Country Club in March of 1977 the basics of a good maintenance building existed. Namely a building that contained approximately 5,500 square feet under one roof. As we worked that first few years we cleaned and generally tried to organize the building into a workable situation.

It was very difficult to work in the wire caged shop with poor lighting surrounded by the varied collection of outdated parts and used turf equipment that had accumulated over the years. Searching for something, stumbling around in the dark while it was either hot, or cold, best exemplifies our old work area. Maintenance productivity was not on an even keel through out the year.



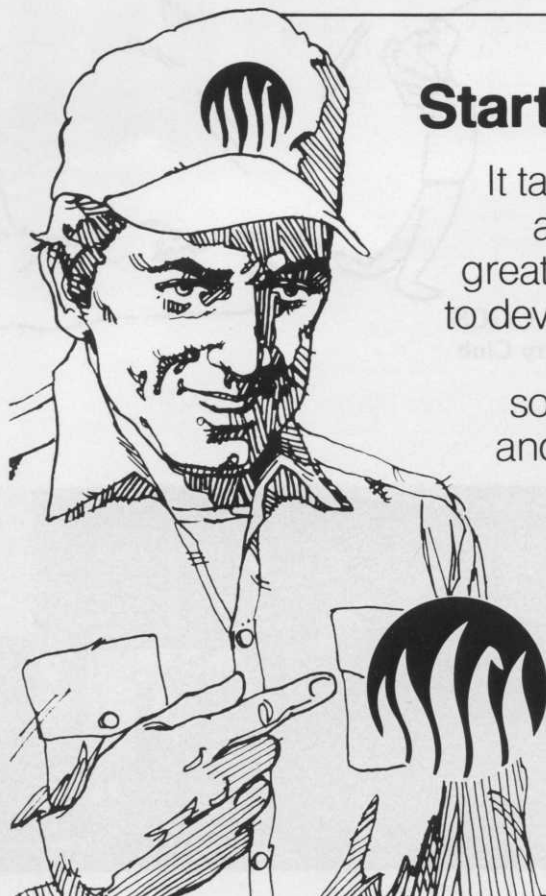
In the winter of 81/82 we completed the rest of the renovation which included painting the outside and the inside of the maintenance facility. The enlargement of my office and the addition, in the rear of the building, of more covered space for storage of large equipment was also done during this period.

As I got to know my club officials better we presented them with plans for amore efficient and modern work area and shop. In the spring of 1980 they gave the go ahead to proceed on renovation of our maintenance facility. One of the first and best things we did was to hire a local architect to work with myself, my assistant Eddie Snipes and my service manager Bob Houser. With the four of us each putting in our ideas a workable set of plans were drawn up and put out for bids in the early fall of 1980. Work commenced in November, 1980 and was completed in the spring of 1981. The first two areas of renovation was our staff lounge and the enclosed shop area. Prior to the lounge completion our men ate lunch while sitting on the equipment, combating flies and extremes in temperatures. This was bad for good employee relations and did not produce a good working attitude to begin their afternoon jobs. Both the lounge and the shop area were totally redone with heating and air conditioning included in the original bid of approximately \$35,000. Also included was new wiring, new lights, new lockers, eyewash and drench shower for chemical use and the painting of the new areas.



With a total renovation cost of just a bit over \$40,000 I feel that San Jose Country Club has as modern and efficient maintenance building as those costing \$20 to \$30 per square foot that are bring built today.

For those of you considering renovation or the building of a new maintenance facility I can truthfully say that the pride and morale of all employees is greatly enhanced with the knowledge that their employers DO CARE and want the best for them. ■



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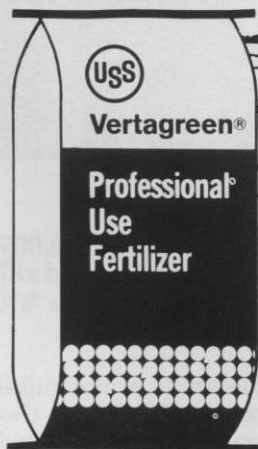
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# Watching Your Tees & Q's

by Steve Batten and Bud White  
United States Golf Association—Green Section  
Southeastern Region



## Traffic Control

Golfers everywhere, on greens, in lakes, climbing trees, and so thick on the first tee that you can't even see the grass. The only way to herd this kind of traffic is to give clear directions on where to point their golf carts.

Florida golf course superintendents have become the experts on traffic control. There are several tricks of the trade presently being used. Each one has advantages and disadvantages.

The old white line trick has been very successful at private country clubs. This involves painting a white line across the fairway near the apron of the green. The objective is to let the golf carts travel up to but not beyond the white line. After the paint wears and can no longer be seen, a new line is painted in a different area. This system works well but is often weakened by lack of communications between the golfers and the clubhouse. During the time the paint is disappearing; so is the turfgrass on the fairway side of the white line.

A more movable line involving the use of a rope line has been successfully used by one superintendent. The rope is stretched between two cart directional signs along the ground. This kind of line is extremely mobile but it does become an object of interference for those one in a million golf balls. For this reason, use a small nylon rope, and the mobility will probably outway any golf ball interference. Whenever lines are used, the use of directional signs should always accompany them.

The most obvious traffic patterns will be visible near greens and tees. Golf cart trails should be wisely placed during construction to be accessible to foot traffic onto and off greens and tees. Installation of curbing whether concrete, railroad ties, or fallen tree trunks have saved many acres of turfgrass from being bruised by tires at parking spaces next to tees. The use of railroad ties has even been used as the stair stepped slope on the number one tee on a local golf course. At times, there are as many as twenty people seen standing on this railroad tie slope.

Of course bruising the turfgrass shoots isn't the only type of wear stress by golf traffic. The other is compaction of the root system. The use of above ground ropes will still be necessary on wet areas to avoid compaction and tire tracking. When ropes and stakes are used, select yellow for high visibility. Ropes and stakes become a golf club liability and are subject to rare cases of golf player injury. Sun roof supports on golf carts can act as bumpers against ropes and stakes.

Golf course rangers can be used very effectively to monitor golf traffic patterns. Keep communications open for daily conference on where golf cart problems are visually seen. Communications are a two way street, so educate the marshalls on some turf physiology involving wear stress.

Appreciation for traffic management tools should also be shared with the club member and guests as well. Explain that bermudagrass selections of Ormond, Tifway and Texturf 10 have been evaluated in wear stress studies among the southern universities and have ranked highest for wear tolerance among 25 other selections. Let them realize that perennial ryegrasses are the most wear tolerant species of cool season turfgrasses commonly used for winter overseeding. Of these, there are several selections which have shown more wear tolerance than others. Your selection of an overseeding surface might have been based on wear tolerance after studying progress reports among the universities, so let your membership or management team know this.

As our northern guests play golf on putting surfaces slower than those on their home courses, they often wonder why they don't have ball roll speeds similar to those of the U.S. Open. Again, from the golf pro to the shine boy, they need to know that raising the mowing height of the putting greens can have a statistical difference in wear tolerance.

So you don't have to have bright colored signs to direct traffic and manage turfgrass under high traffic conditions, all you have to have is common sense and the gift of communications. ■



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Rhone-Poulenc Inc. announces their Chipco "The Right Approach" to quality Turf and Ornamentals End User program. This program was designed exclusively for Turf Managers, including Golf Course Superintendents, Lawn Care Companies, Landscape Companies and Ornamental Growers. As the program is written, Turf Managers who purchase Chipco products will be awarded valuable points which can be redeemed for business related items.

To qualify for the program points, Turf Managers must place an initial order of \$500, or more (there is no minimum on subsequent orders). Then, based on their purchases of Chipco products, they will earn points as follows:

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MCPP	22 points/gal.
Mocap	2 points/lb.
Microgreen	20 points/gal.

In order to claim points, when Chipco products are ordered, the Distributor Sales Representative will complete a special Chipco awards point claim form and forward it to award headquarters. Periodically during the program, award headquarters will report back on total Chipco purchase, and the number of points earned to date. This program will include all purchases made between November 1, 1982 and September 30, 1983. All claims must be submitted and received at award headquarters by October 10, 1983.

At the special request of the Florida Golf Course Superintendents Association, Rhone-Poulenc has agreed to allow the Turf Managers to donate all or part of their award points to the Florida Turf Grass Association Scholarship and Research Fund. By pooling the award points, this will allow the FGSA and FTGA to purchase much needed equipment to assist in Turf Grass research. Rhone-Poulenc is very excited to participate in such a worthwhile cause, and feels that the Florida Golf Course Superintendents have demonstrated once again their dedication to quality Turf Grass management. ■

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Our editor is proud to share the news of this prestigious award with our reporters, photographer and readers. Once again we say “Thank You” to our advertising family for making “The Florida Green” available to our readers.

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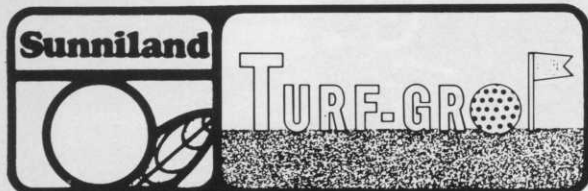
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TREASURE COAST CHAPTERS EXECUTIVES

The new Executive Committee members of the Treasure Coast Chapter are: front row, left to right, Director George Ord, C.G.C.S. of Piper's Landing in Stuart, Secretary Ross Saylor of the Yacht and Country Club in Stuart, Internal Affairs Vice President Joe Snook of Riverbend Country Club in Tequesta, Treasurer Craig Baker of Indian River Plantation in Jensen Beach and Director Adam Yurigan Jr. of the John's Island Club in Vero Beach; back row, left to right, Director Sid Salomon IV of Indian Pines Golf Club in Ft. Pierce, President Jim Callaghan of Riomar Country Club in Vero Beach, External Affairs Vice President Tom Burrows of Turtle Creek Club in Tequesta, and Immediate Past President Lonnie Stubbs of Sandpiper Bay Resort in Port St. Lucie. ■



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# Palm Beach Trade Winds



By MICHAEL BAILEY  
Boca Greens Country Club

There are three words in the golf course language that are often poorly stated and downgrade a professionally oriented turf industry. They are: "Greenskeeper," "Dirt," and "The Barn." The "Golf Course Superintendent," "Soil," and "The Golf Course Maintenance Building Complex," are far more appropriate and specifically define their true definitions.

When was the last time you went down to "the barn" and found some cows and chickens roaming around? Instead, one finds a building that often has been designed by an architect with much thought and input also designed by the course superintendent. Buildings nowadays are encompassing clean organized offices with secretarial quarters, employee lounges complete with microwaves, mens and ladies restroom facilities with showers and locker rooms, not to mention the aspects of the function of maintaining and storing of golf course maintenance

equipment. The shop areas are usually wide open with high rising garage doors to allow easy access and good cross air ventilation. Interior floors are designed with concave slopes with drains to allow thorough hosing down of the shop floor. Shop repair areas are much reminiscent of an auto dealership, complete with hydraulic lifts and parts inventory to self sufficiently operate nearly all major repairs. Irrigation rooms are ever so increasing, with the storage of all the needed parts and tools for repairs and they are kept within a designated work bench area. Storage of much respected and restricted chemicals are contained behind metal, locked doors. Fertilizer storage rooms are common sights with designed soil bins to accomodate various sands and soils. A central location of the building from throughout the project allows more efficient travel time. Buildings should be well marked for easy service and deliveries, and yes, since the maintenance building is what supports the great looking golf course — why not make "the barn" look great too!



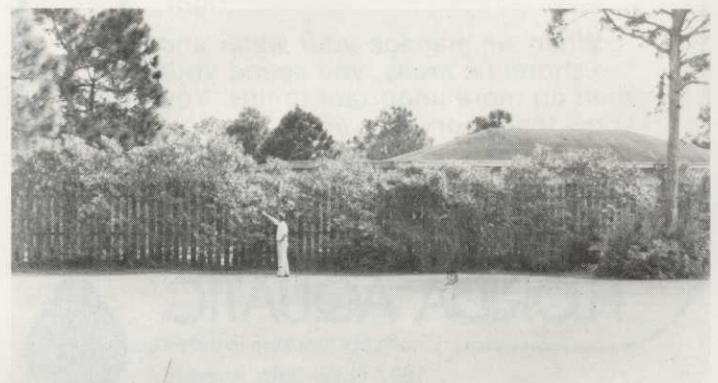
The old barn out back! "Darn Jed, I'm sure the things was over there yesterday, it must be over by them weeds."



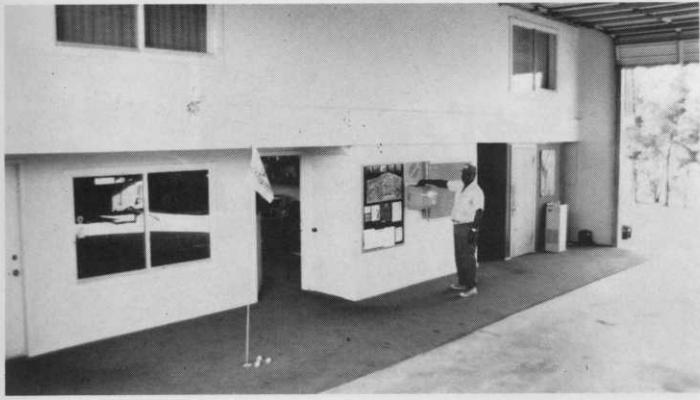
No, it is not the Taj Mahal. It's Steve Pearson in front of superintendents office at Boca Groves.



It is ideal for maintenance building to be well marked for easy delivery access along with proper landscaping.



East Pointe Maint. Bldg. is well landscaped with high perimeter fence to harmoniously blend with environment.



Boca Greens interior reveals office, lunch room, time clock area along with unique practice putting green.



Boca Greens soil bins individually partitioned with roof overhand and high rising garage doors for easy entry.



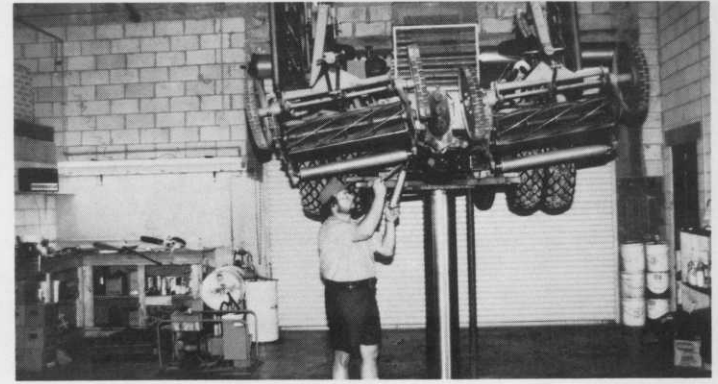
Atlantis C.C. Supt. Office with golf pictures and golf artifacts that depicts a clean organized office.



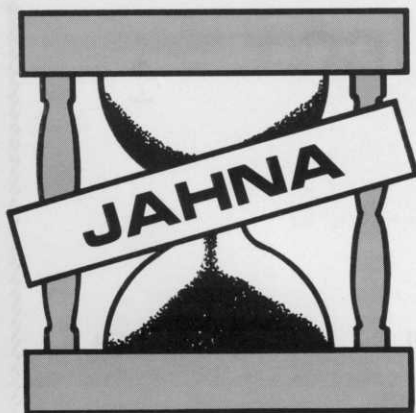
Jim Watkins of C.C. of FL. possesses an elaborate inhouse soil laboratory capable of many useful tests.



Boca Groves Lunch Room: everything from the kitchen sink to microwave oven, magazine rack, and full length window.



Boca Groves shop repair area utilizes a hydraulic lift to the max, as fairway unit access is greatly increased.



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Del Aire's organized shop area. Note elaborate preventative maint. program on wall revealing pertinent info.



Frenchman's Creek maintenance building is perhaps one of the largest covered buildings in the country.



Frenchman's interior displays massive floor area allowing all equipment to park within the interior at night.



Highridge C.C. exemplifies properly locked metal chemical room door with signs posted and fire extinguisher.



Boca Greens chemical room is designed with easy entry, concave floor with drain, sink, and outside hose bib. ■



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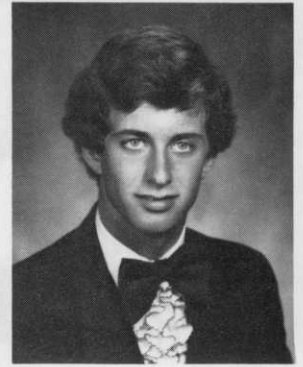
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# Safety and the Superintendent

By DAVID MEDA  
Lake City Community College



In the event of equipment operating, safety is important in any situation. Whether it's in the rough on a hillside or on a greens surface, you must be aware of all hazards in the operation of your equipment. Equipment is designed to perform a specific function and to provide efficient, time saving methods of doing a job. It is designed with the operator in mind and built to OSHA (Occupational Safety Health Association) standards for the safety of each individual. Though progress is being made to enhance the safety of each product produced, we know we can only control accidents, and that only ignorance, carelessness, and inefficiency prevents us from working with safety in mind. As we produce bigger and more sophisticated machinery to do the work man had to do by hand, new and more extensive safety measures have to be taken.

Practicing safety precautions does not mean eliminating all activity that might be dangerous. There will always be those few that will be tempted. It's up to you, the supervisor, to acknowledge the risk involved and to take action, for it's the safety of each employee that's your concern.

The major problem is adapting persons to work operations and conditions with maximum degree of safety. Records have shown that this is not an easy task. Action has to be taken in such a manner that personnel can comprehend. Working as a supervisor you must be able to work with your people and be able to get people to work with you. It is up to you to notice unsafe conditions and unsafe acts. You must be able to correct unsafe acts in a manner which will cause neither confusion nor resentment.

Follow the procedures in accident prevention listed:

1. improve physical conditions, operations, process, so as to minimize the probability of accidents;

2. guard machinery and all moving parts;
  3. design personal practices to train, assign and supervise employees in a way that increase the expectation of safe performance;
  4. analyze accident facts with view toward initiating preventive measures;
  5. know probable or potential hazards;
  6. know actual or existing hazards;
  7. take action and provide information through posted literature and by verbal communication with employees;
  8. provide necessary safety equipment to do a job.
- All of these are significant to the superintendent in providing safe conditions for his employees.

It is the responsibility of the superintendent to hire a mechanic who is qualified in the area of golf course equipment. Keeping equipment in top operating condition with all safety devices working, is his main objective. People don't realize the importance of most safety devices on machinery. The equipment is built for the safety of the individual.

A disconnected safety switch and improper repair may cause serious injury to the operator. For example, a greens mower operator dismounts his machine, while it's running, to unclog grass clippings from the reels. In the process, his fingers are severed. Due to improper repair of safety switches to cut off the machine as he dismounted, an operator lost his fingers, disabling him for life. But if all safeguards were operational, accidents would be lessened.

In conclusion, make sure equipment is used in its specified areas, be responsible, take action in providing proper safety equipment, and maintain equipment for maximum SAFETY. ■

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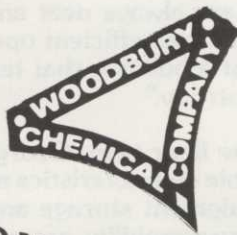
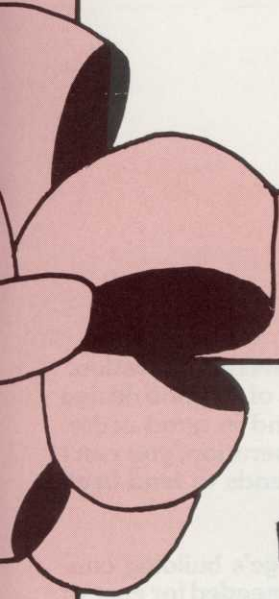
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# Treasure Coast "Tide"ings

By JAMES P. CALLAGHAN  
Rio Mar Country Club

## A Visit to the Maintenance Complex at Piper's Landing

Piper's Landing, a new real estate development golf complex in Stuart, boasts a modern maintenance complex that is one of the finest along the Treasure Coast. Unlike the barns of yesteryear, the modern maintenance building at Piper's Landing provides the staff with a strong foundation for an efficient operation of the 18 hole golf course and landscaping of the development's properties.

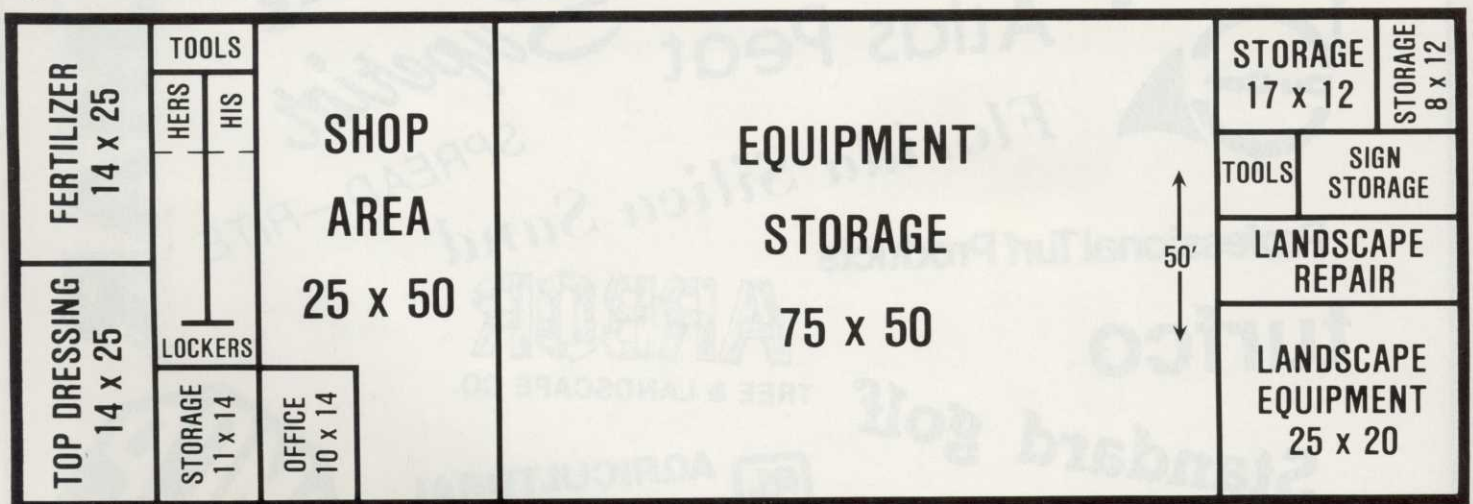
George Ord, C.G.C.S., beamed with pride when he gave me the grand tour of his maintenance building. Designed by Piper's Landing's own architectural staff, the building contains floor area of 7,500 square feet. It is divided into three different sections. An open 75 x 50 area is utilized for equipment storage. To one side, a 25 x 50 area is reserved for landscape operations while a 50 x 90 area at the other side provides shop and support areas for golf course operations. Having the equipment storage area separating the landscape and golf course sections, it provides a buffer zone that allows the two departments to function independently under the same roof.

George Ord is certainly proud of his maintenance building. "It's definitely a pleasure to work with a well designed

building. It is really an asset to our overall operation," George stated. He continued, "Because of its good design and ample area, we are always neat and in good order. With today's demand for an efficient operation, you can't afford to work out of a building that tends to lend itself towards a state of entropy."

As one can see in the floor plan, George's building contains all of the desirable characteristics needed for ease of operation. Large equipment storage and shop areas for easy equipment maneuverability are a necessity today. Ample storage areas for specific items are conveniently located throughout the building. A comfortable office and his/hers rest area have been incorporated into the complex. Adequate fertilizer and topdressing storage compartments are found at the far end of the building.

The maintenance area is extensively paved on all sides of the building and a paved parking area is provided for the employees at the entrance to the complex. Having such a large area surfaced helps to keep the building clean and the entire area neat at all times.



## MAINTENANCE BUILDING PIPER'S LANDING

(Continued from page 34)

The location of the complex in relation to the golf course is also a plus. It is situated 150 feet in from the main road and directly between the front and back nines.

Gas pumps are located a safe distance (50 feet) from the building. Since all departments at Piper's Landing have access to gasoline at the maintenance complex, a 15 unit-key lock computerized system is utilized which keeps track of each department's gas consumption.

Flexibility, efficiency, and attractiveness are all desirable elements that we would like to see incorporated into today's maintenance complex. The complex found at Piper's Landing provides these essential elements and has paid off, resulting in a smooth operation. ■



Front view, maintenance building — Piper's Landing.

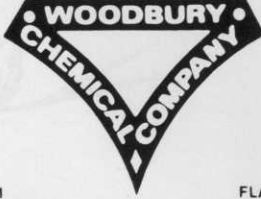


Rear view, maintenance building — Piper's Landing.

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## CRABGRASS (*Digitaria spp.*)

By STEVE BATTEN

Is crabgrass a winter weed? Yes, germination begins in mid-January for several crabgrass species. In South tropical Florida, there is a species flowering every month of the year.

Crabgrass is found world wide, and even grown as a turfgrass in Singapore. In Australia the common name is Blue-Couch. In Florida, there are more than 21 species identified as escaped introductions now growing as natives, and many more experimentals in state herbariums. One cultivar, *Servenola*, has recently been released as a forage grass by IFAS. The most common species are Tropical Crabgrass (*D. bicornis*) and Southern Crabgrass (*D. ciliaris*). *Digitaria sanguinalis*, known as Large or Hairy crabgrass is not found in Florida as a common species.

Many species of crabgrass in Florida produce stolons, which make low mowing as a control ineffective. Two of these species are Blanketgrass (*D. seratina*) and India Crabgrass (*D. longifolia*).

Because there are so many species in Florida, winter application of a pre-emergence herbicide in early January may, or may not work for control. Germination time, temperatures, and seed coat chemical reduction (scarification) varies greatly for each species. ■

(illustration from *Turf Management for Golf Courses, Fall 1982*, by James Beard, published by Burgess Publishing Co., Minneapolis, Minn., illustrated by Steve Batten)

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# EDITORIAL

The past year has been a very difficult one for businesses in the United States. Inflation has reduced the dollars' buying power. This has resulted in less demand for services and has caused all businesses to pull in their belts. The businesses that support our industry have also been duly effected.

"The Florida Green" would like to remind our readers once again that we are supported 100% by our advertising family. Not one of our 2,300 subscribers pays one penny to receive our award winning publication. Neither is it a financial burden to your local chapter or to your state association. The entire expense of putting out "The Florida Green" is picked up by our supplier-contributors.

We would like to urge and remind you that when all things are equal please deal with our advertisers. Show them you are grateful for their support during these trying times (see page 32 & 33).

If we do not give them the support they need and deserve them 1983 may not be a prosperous and happy new year for them and . . . . there may not be "The Florida Green" in 1984. ■

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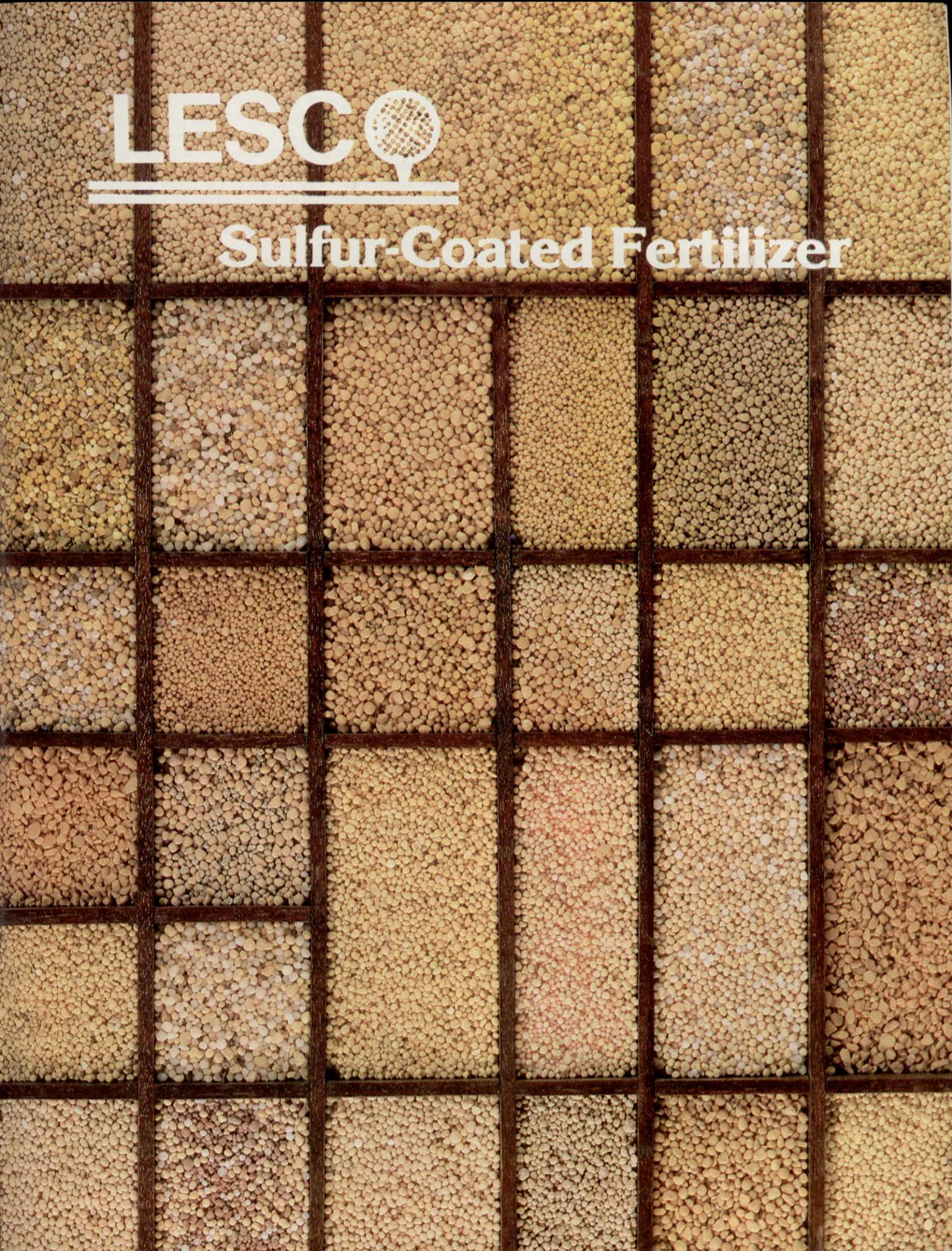
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**LESCO**



**Sulfur-Coated Fertilizer**



# Questions and Answers about **LESCO**

## What is **LESCO Sulfur-Coated Fertilizer**?

LESCO Sulfur-Coated Fertilizer is controlled-release fertilizer made by coating nitrogen and other plant nutrients with molten sulfur in varying thicknesses to allow feeding of turf for up to 90 days.

## How are nutrients released from sulfur-coated fertilizer?

Nutrients become available when the coating degrades to expose them or when nutrients diffuse through small pores in the coating. If all Sulfur-Coated Fertilizer particles were identical, the release of nutrients would occur at the same time for each particle. Fortunately, coatings are not the same on all particles. Imperfectly coated or cracked particles release nutrients immediately. Particles with thin spots in the coating and with imperfections in the sulfur coat which is covered by sealant have intermediate release rates. The longest delay in release comes from the thicker-coated particles with no imperfections. Thus, it is the variability in the particles that provides a sustained release of nutrients from LESCO Sulfur-Coated Fertilizer.†

sulfur coating lowers the N content and because coating weights vary, N contents also vary.

The weight of applied sulfur ranges from 15 to 18% of the final product weight. The sealant and conditioner each account for about two percent of the final weight. There are several reasons for variations in the coating weight. The coating weight can be increased to obtain a lower dissolution rate. Particle size affects the amount of coating required to obtain a certain dissolution rate. As the particle size decreases, the surface area per unit of weight increases and more sulfur is required to achieve a coating of a given thickness.

## What factors influence release of nitrogen from Sulfur-Coated Fertilizers?

As coating thickness increases and the dissolution rate decreases, release of nutrients will be slower. As temperature increases, release rate increases. Release rate is not greatly affected by soil water, soil pH or microbial activity.†

## What is dissolution rate?

The seven-day dissolution rate is a laboratory measurement of the percentage of nutrients that go into solution when a sample of Sulfur-Coated Fertilizer is placed in 100°F water for seven days. It is used to indicate the relative rate of nutrient release from Sulfur-Coated Fertilizer. As coating thickness increases, the dissolution rate decreases.†

## Is granule coating breakage a problem with Sulfur-Coated Fertilizers?

Research has been conducted to examine the effect of traffic on Sulfur-Coated Fertilizer granules. After mower traffic three times a week granule breakage was measured by weekly clipping yield, color rating and residual granule count. With Tennessee Valley Authority process sulfur-coated urea, the same process Lakeshore uses for its sulfur-coated urea, no effect from traffic was reported over a two-year period. No granule breakage has been reported with the use of rotary spreaders (LESCO or Lely spreaders) which have a spinner speed of approximately 300 rpm.

## SULFUR-COATED UREA

RELEASE BY COATING DEGRADING  
OR

DIFFUSION THRU SMALL PORES

• • • • •

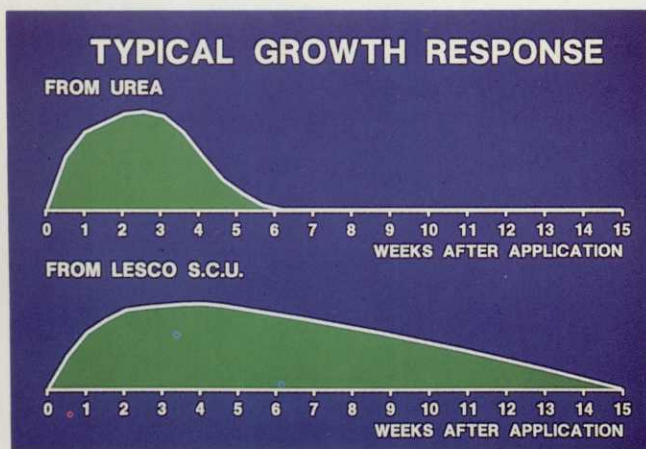
IMPERFECTLY COATED - IMMEDIATE RELEASE

THIN COATED - INTERMEDIATE RELEASE

THICKER COATED - LONGEST DELAY

## How long will LESCO Sulfur-Coated Fertilizer last on turf areas?

The duration of feeding of Sulfur-Coated Fertilizer depends on the dissolution rate of the product. Half of the nutrients are released in the first month, the remaining 50% is released over the next two months.



## Why do different sulfur-coated products have different nitrogen contents?

The N content of LESCO Sulfur-Coated Urea products falls within the 36 to 37% range; urea has 46% N. Addition of the



## How does the efficiency of LESCO Sulfur-Coated Fertilizer compare with other N sources?

When measuring the amount of applied nitrogen taken up by plants over a three-year period, Sulfur-Coated Fertilizer

# Sulfur-Coated Fertilizers

proved to be as efficient as soluble N sources and more efficient than other popular slow-release N sources.

Nitrogen source	Nitrogen recovery In clippings as % of applied N
Ammonium sulfate	48% a*
10-6-4 (soluble-N)	50% a
TVA SCU•	51% a
Coarse IBDU	37% c
Methylene urea	42% bc
Milorganite	29% d
Ureaform	22% e

\*Values followed by the same letter are not significantly different.  
•LESCO Sulfur-Coated Fertilizer is manufactured using the TVA process.

## What sizes of LESCO Sulfur-Coated Fertilizer are available?

LESCO produces two sizes of Sulfur-Coated Fertilizer. LESCO 7 mesh grades are designed for use on turf mowed 1/2" or above. LESCO standard grade is for use on turf cut above 1" in height. LESCO Sulfur-Coated Fertilizers are not designed for use on established golf course greens or for cut under 1/2" in height. For cut under this height, we recommend LESCO Greens and Tees Fertilizers

## What are the advantages of using Sulfur-Coated Fertilizer over using urea or other N sources?

LESCO Sulfur-Coated Fertilizers last longer so fewer applications are needed to maintain uniform quality turf. Use of LESCO Sulfur-Coated Fertilizer reduces the problem of fertilizer burn and reduces the loss of nitrogen by leaching and volatilization. If losses are appreciably decreased, greater efficiency may be achieved with Sulfur-Coated Fertilizer than with a soluble source. The decreased labor costs and greater efficiency as well as the smaller amount of nutrient loss usually more than make up for the greater cost of sulfur-coated fertilizer.

## What are the advantages of using LESCO Sulfur-Coated Fertilizer over other slow-release nitrogen sources?

With LESCO Sulfur-Coated Fertilizer, the lower cost of nitrogen and the greater efficiency of applied nitrogen give sulfur-coated fertilizer the advantage over other slow-release sources. Response from sulfur-coated fertilizer is also quicker and more intense than response from other slow-release sources.†

## Is the sulfur in LESCO Sulfur-Coated Fertilizer available to turfgrass?

Yes, the sulfur is available after it is oxidized to the sulfate form. The oxidization from sulfur-coated fertilizers is between the fairly rapid oxidization of sulfur from powdered sulfur and the slow oxidization from granular sulfur.†

## Does LESCO Sulfur-Coated Fertilizer reduce soil pH?

The potential for increasing soil acidity exists in most nitrogen sources. Urea has a potential acidity, as do ammonium salts and the natural and synthetic organics. The concern about sulfur-coated fertilizers is usually in reference to the sulfur coating since sulfur is sometimes used to acidify soils. No striking effects of sulfur were found after four years of tests at The Pennsylvania State University. Other research indicates similar results. Still, the potential for acidifying the soil is there; and, as sulfur is oxidized to sulfate by S-oxidizing bacteria, hydrogen is released to make the soil more acid. If soils become too acid with concentrated use of sulfur-coated fertilizers, or any N source, the solution to the problem is the same: lime according to soil test recommendations. After four years of using different nitrogen sources, PSU obtained the following results in soil samples taken from the surface two inches. (No differences occurred at two to four inches. The greatest lowering of pH occurred with ammonium sulfate. The difference in soil levels of sulfate-S were reflected in the uptake of S.†

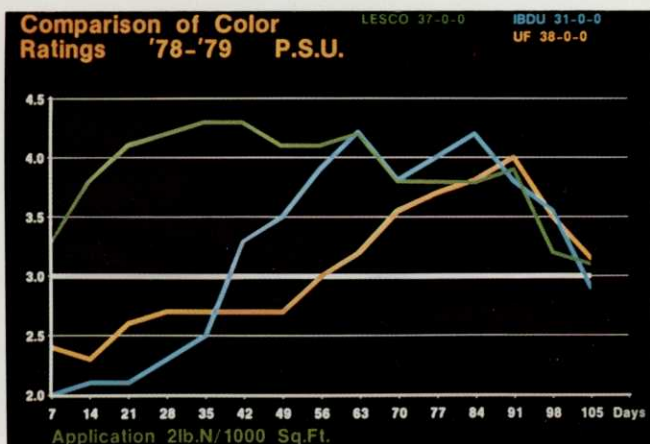
Nitrogen source	Soil pH	ppm Sulfate-S† in soil
Ammonium sulfate	5.5 b*	10.9 a*
16-8-8 (50% ureaform)	6.2 a	6.4 bc
10-5-5 (75% ureaform)	6.4 a	6.0 c
Milorganite	6.3 a	7.7 bc
16-8-8 (50% SCU (21% dis. rate))	6.2 a	8.9 ab

\*Values followed by the same letter are not significantly different.

## Why should I use LESCO Sulfur-Coated Fertilizer on my turf?

1. Because more of the nitrogen in LESCO SCF is available as a nutrient to the plant;
2. Because LESCO SCF resists leaching;
3. Because LESCO SCF tolerates changes in temperature and moisture better than other slow-release forms;
4. Because you avoid the risk of fertilizer burn associated with heavy applications of conventional fertilizers;
5. Because LESCO SCF is a concentrated product so you reduce handling, space and transportation costs;
6. Because LESCO SCF minimizes surge growth;
7. Because LESCO SCF is not dependent on bacterial breakdown;
8. Because LESCO SCF provides controlled-release feeding of turfgrass for 90 days;
9. Because the sulfur in LESCO SCF is available as a plant nutrient;
10. Because on turfgrass and research plots across the United States, Sulfur-Coated Fertilizer has outperformed other conventional and slow-release products in appearance, growth and nitrogen recovery.

†Taken all or in part from "Answers to Questions" about Sulfur-Coated Urea, V. Waddington and N. W. Hummel, Department of Agronomy, The Pennsylvania State University, in Grounds Maintenance Golf Course Manual.



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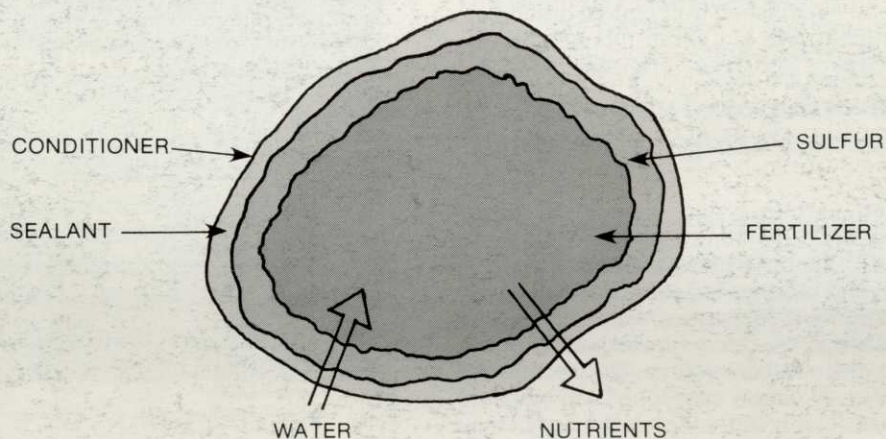
In the manufacture of Sulfur-Coated Fertilizers, Lakeshore uses nutrients in a variety of analyses and coats the uniform-sized granules with molten sulfur. Because of its microcrystalline structure, the sulfur coating controls the release of nutrients by allowing moisture to slowly permeate each granule, dissolving nutrients and allowing

nutrients to escape at varying rates.

The particles are coated with a special sealant to further enclose in the sulfur-coated nutrients.

The result of this special manufacture, is a controlled-release fertilizer which will produce greener, denser turf. This unique fertilizer provides sustained feeding; high nutrient content; safe, non-burning fertilization which characterizes the latest advancement in fertilizer. These Sulfur-Coated Fertilizers are marketed by an experienced, innovative leader in the turfgrass industry—LAKESHORE EQUIPMENT & SUPPLY CO.

This cross section illustrates the typical composition of a Sulfur-Coated Fertilizer granule.



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