

An average of all turf scores throughout the growing season at the 8 lb. split application level of nitrogen shows that ureaform produced good quality turf rated at 72 per cent whereas the standard 8-6-2 rated 67 per cent and the activated sludge rated 68.8 per cent. A study of data indicates that the turf quality resulting from a split application of 8 lbs. of ureaform nitrogen although showing some variation, does not have the wide fluctuation as does the R. I. 8-6-2 fertilizer and Milorganite. The ureaform fertilizers appeared to undergo a more gradual nitrogen release thereby providing a longer feeding period throughout the growing season. In addition, the split application of 8 lbs. of nitrogen per 1,000 sq. ft. from either activated sludge or water soluble fertilizers is not advisable since high nitrogen levels necessitate extremely large quantities of fertilizer, and the application of such large quantities is likely to cause turf injury. Ureaform fertilizers, although containing 38 per cent nitrogen, may be applied at high nitrogen rates without danger of turf injury, because of controlled nitrogen availability.

Single vs. Split Application

Comparative value of single versus split application of ureaform at the 8-pound nitrogen rate shows that the differences are small. Those plots receiving the split application had an average turf score of 72 per cent as compared to 75 per cent for those plots receiving a single treatment. No appreciable benefit was obtained ELIMINATE SHOT-RUINING RUTS!

your power mower and golf & cart tires

Slip these

treads over

prevents cutting up soft turf 3 SIZES fit 90% of power mowers and rental golf carts

Make carts roll easier. Provide added traction for your power movers. Fit 9" to 12½" outside tire diameters. Priced from \$3.25 to \$4.00 per pair F.O.B. shipping point.

C.S.I. Sales Company

DEPT. GD. SOLON CENTER BLDG., SOLON, OHIO



ensemble which includes: washer and data plate with interchangeable numbers, waste container, and tee towel . . . all mounted on a sturdy tee stake.

CONTAINER DEVELOPMENT CORP.

415 Monroe Street • Watertown, Wisconsin

by splitting the treatment into two applications when using the 8-lb. level of nitrogen.

Quality Fluctuation

In a comparison of ureaform, the standard R. I. 8-6-2 turf fertilizer, and Milorganite using a split application of 4 pounds of nitrogen per 1000 square feet, the R. I. 8-2 once again produced turf which fluctuated in qual , throughout the growing season. Milorganite was slow to produce a growth response until the advent of warm weather. Ureaform produced a turf which improved steadily as the growing season progressed. An average turf score for

Something's Wrong Here

In the report of the GCSA convention that appeared in March GOLF-DOM it was stated that dallisgrass was controlled at a Houston club with an application of 10 lbs. of DSMA per 200 gals. of water and cost of eradication was \$40 per hole. K. D. Flanders, supt. of Brae Burn CC, has corrected our scorecard on this. The cost was \$40 per acre and 21 lbs of DSMA per 200 gals. of water were used.

ureaform was 60 per cent, for the 8-6-2, 59 per cent and for Milorganite, 62 per cent. This shows that all three of these fertilizer material, produced only fairly good turf, indicating that 4 lbs of nitrogen is inadequate.

Average Turf Score

In comparison of turf quality following the single applications of 2, 4, 6, and 8 lbs. of nitrogen per 1000 sq. ft. from ureaform sources, the average turf score for the 2-lb. rate was 54.2 per cent; 4 lb. rate 64.9 per cent; 6-lb rate 68.2 per cent; and 8-pound rate 75.1 per cent. The single application of 8 lbs. produced a qood quality turf throughout the growing season, and the 4 and 6-lb. rates gave a steady response. The 2-lb. rate was unsatisfactory since it produced only fair quality turf throughout the six months of observation.

The check plots improved slightly in turf quality as the season progressed but the quality of these plots was far below that of the treated plots.

Conclusion

The results of this study indicate that ureaform fertilizers are well adapted for fertilizing green turf. Although ureaform fertilizers gave slower response than fertilizers which are largely water soluble, they gave a quicker response than the activated sludge. In addition, ureaform, materials have been demonstrated to provide long seasonal feeding and have shown a residual holdover of nitrogen to the following year. Such fertilizer as the R. I. 8-6-2 and Milorganite did not possess these qualities and must be applied at lower rates of nitrogen more often throughout the growing season.

TURF that Speaks for Itself!

Western's Greens are MILORGANIZED for **DENSITY...**

"If the grass looks greener on the other side of the fence, it is likely a Priestkorn is growing it" — or so some say in the Motor City district. Four Priestkorn brothers are directly associated with three of the major courses in the Detroit area.

"Brother Bob" inspects one of the fine greens at Western Golf and Country Club. Tees and fairways as well have shown marked improvement since he assumed charge.

Robert Priestkorn encourages turf density through the generous use of Milorganite. In fact, all four Priestkorn's are "Milorganiters" — using in excess of a carload per year on their respective courses.



If you have a turf problem, consult: Turf Service Bureau THE SEWERAGE COMMISSION, Milwaukee 1. Wis.

GOLF CLUBS MILORGANITE THAN ANY USE MORE MILORGANITE

It appears that the most desirable rate of ureaform nitrogen application for putting-green turf is between 8 and 12 lbs. per 1,000 sq. ft. It is doubtful if the five per cent increase in turf score of the 12 over the 8-lb. rate justifies use of the higher rate. However, it appears that for best results ureaform fertilizers should be applied at not less than 8 lbs. of nitrogen per 1,000 square feet on green turf. There was no advantage in applying ureaform fertilizers in split applications.

Improving Your Fairway Irrigation System

By ROY W. NELSON

Supt., Ravisloe CC, Homewood, Ill.

When I was at Golden Valley CC in Minneapolis, I wasn't very happy with the fairway irrigation system because I thought it was inadequate. So, after some negotiation with my green committee, I got the go-ahead to improve it.

I didn't rush into the thing. I checked with other supts. to find out how their systems were "it up and I talked to as many local irrigation men as I could to determine what would be the best approach to improving our setup.

Keep Budget in Mind

What I found out, came down to this: The first thing to do was to determine the capabilities and limitations of our existing facilities.



Dept. G



That meant studying water supply, distribution and application. Then, I had to find out to what extent improvements could be made considering the amount of money I had to work with.

The fact that I finally got the system installed the way I wanted it isn't important. What is more interesting are the things a supt. should consider if he is going to put in a complete new system or renovate an old one.

Here are some of the things he should take into account:

A very simple improvement might be a better balanced nozzle size in sprinkler heads.

A more ambitious improvement would be the replacement of the sprinklers. Or, perhaps, larger and more efficient hose would come under this heading.

Another consideration might be an increase in the water supply; or, in line with this, an increase in size and efficiency of the pipe distribution system.

Finally, the supt. might want an entire new hoseless layout with quick coupling valves. You can't find out too much about how water

You can't find out too much about how water operates. You have to learn something about pressure at which water can be delivered to a sprinkler head. This involves knowledge of friction loss in pipes and some grasp of information contained in the precipitation charts furnished by various sprinkler manufacturers.

Fundamental is application of water in the easiest and most efficient manner. You have to determine optimum application of water to a given area in say a week's time. This involves knowledge of soil structure and turf with which you are working. You have to decide how many sprinklers a man can tend at night, either by walking or by motorized transportation. Finally, you have to determine how to scatter your sprinklers and what velocity demand there is to keep them operating as you wish.

Theory May Not Apply

At Golden Valley, we used 16 large guns at a time. Our 12-in. well and 60 hp booster system delivered 1,200 gpm at 115 lbs. pressure at the pump. There are 180 valves on the fairway proper, located about 90 ft. apart. With this system, theoretically it should take 11 hours to apply one-half in. of water to the fairways, but as it worked out, it took from 14 to 16 hours. Usually, theory doesn't apply in irrigation as it should. I suppose it is because of soil structure and turf and possibly because of terrain. You have to do some experimenting to get the results you're after.

LAWN MOWER STATIONARY BLADES



SINGLE (¼") Raised Lip — Heavy Duty Blades for all Makes of Fairway and Rough Gang Mowers. DOUBLE (¼") Raised Lip — Heavy Duty Blades for all Makes using this type Blade. Hand and Power Putting Green Mower Blades, Power Mower, Tee Mower and Trimmer Blades all made of the best quality knife steel and specially hardened to insure long wear and fully guaranteed to give complete satisfaction. Municipal Parks and Golf Courses, Public Courses, Golf and Country Clubs, Dealers and Repair Shops allowed special discount. You will save important money buying direct from manufacturer.

Price sheet on request or we will quote price for your blade order.

JONES MOWER & EQUIPMENT CO.

2418 Grasslyn Avenue, Havertown, Pa.

We pay the postage on all orders of \$15.00 and over.



The Walker GASOLINE POWERED Car Is Ready to Go ANYTIME — ALL the TIME — ANYWHERE

Dealer Inquiries Invited

Max Walker Fowler, Kansas

Returned Goods Danger

(Continued from page 38) put this merchandise back in salable condition, it must be repressed, reboxed and often reticketed and completely reprocessed through our warehouse at a substantial handling cost.

8. In order to partly offset this additional expense, we have no alternative but to charge you a "Return Handling Charge" of 10 per cent hereafter on all returns (except for manufacturing defects where you will naturally receive full credit.) We are quite confident that you will fully understand our position as we want to continue to be able to supply you with fresh merchandise in new styles which will bring a growing sales volume to our mutual advantage at all times.

Gives Merchandising Tips to Mid-Atlantic Assistants

Assistants and young pros who attend bi-weekly Middle Atlantic PGA seminars that are held regularly throughout the winter, recently got good advice from Harold Oatman of Norfolk, Va. In point-

merchandisers, he told them: 1. Have and keep good credit.

ing out how to be better than average golf

- 2. Buy smart to sell smart.
- 3. Keep your shop and merchandise clean.
- 4. Live and dress within your means.
- 5. Get rid of bad buys even if you have to sell at your cost.
- 6. Keep a tight grip on member credit.

Jim Beattie Killed in Crash

Jim Beattie, pro golf sales mgr. of the New York branch of Wilson Sporting Goods Co., was killed in an automoblie accident on Apr. 11 while enroute to a meeting of the Connecticut Section of the PGA. He joined Wilson in 1933 as a salesman, was appointed assistant pro golf sales mgr. in 1948, and was promoted to pro golf sales mgr. in 1950, a position he held at the time of his untimely death. He was 64 years of age. Survivors include his wife, Barbara, and his mother, who resides in Scotland. Jim started out as a pro and worked for several golf equipment firms before joining Wilson. Par Tube Protects Your Grips The Full Bag Length

Regular • SELL PAR TUBES

No matter which tube you buy, you can be assured you will be handling the best • The Regular is tough, moistureproof and proven • The Plastic is tough, non-brittle with rolled edge • Both will give full length protection to clubs and grips • Will fit any bag • Allows full unrestricted use of each club in individual compartment type bags • Regulars packed 42 and 144 per carton — Plastic 42 per carton.

Contact Your Local Distributor or

PAR TUBE 137-141 S. ALBANY AVE. CHICAGO 12, ILLINOIS

Grau's Answers

(Continued from page 42), plish significant savings at the end of the season.

Now – how well do you know your costs?

Snowmold and Clover

Q. We have a 9-hole course opened to the public for the second year. The greens are very good but they seem to have a lot of white clover coming into them. Is there anything on the market to treat these clover spots without killing the seaside bent? Also, is there a weed killer on the market for bent greens? (Mich.)

A. You are likely to be severely affected by snowmold, particularly on seaside greens, because this grass is very susceptible to the disease. It so frequently happens that when seaside is injured by snow mold, or by some other disease, clover seems to be one of the first invaders. Therefore, the appearance of clover is natural but does not make it acceptable. I mention it to emphasize that complete control of snowmold is one of your first steps in preventing clover invasion.

If you will read your back issues of GOLF-DOM you will notice various discussions of clover control in bentgrass greens. It is important, first, to have good, strong grass. Through proper management such as aeration, minimum watering, adequate fertilization and disease control, you will be in a position to use most effectively a weed killer for clover. The best I know of is Brush Killer, a mixture of 2,4D and 2.45T. This must be used carefully and at low rates in order to avoid damaging the bent. I would use about 1/4 of the recommended rate on the Brush Killer container. I would try this first on a nursery or practice green so if it does cause damage it will not be serious.

Plastic

Another way to discourage clover spots is to dust them with calcium arsenate. This material is quite safe on bentgrass although if used in excessive amounts, it can burn the grass. A light dusting on the clover spots could be very effective.

There is no weed killer that I know of that, is designated specifically for bentgreens. For the most part, we try to avoid using any kind of weed killers on bentgreens. Sound management practices that produce good turf are the best defense against weeds in greens.

Ugandagrass for Collars

Q. Why wouldn't Ugandagrass work well on Poa annua collars of bent greens? (Md.)

A. We believe that Ugandagrass may be a good one to plant on the collars of bentgreens where Uganda is adapted. It looks like a very good summer companion to Poa. It grows well in hard soil which we usually find on collars





SUPERIOR RUBBER MFG. CO., INC. • 145 Woodland Ave., Westwood, N. J.

and approaches. It may not take water too well so keep it dry as you can. We believe the best way of establishing it will be to lay solid sod from the nursery. It shouldn't be a pest in the greens because it looks so very much like bent. The ball probably will play well onto and from a Ugandagrass collar.

Permanent Seed

Q. What is a good, permanent seed that will hold up under drought, etc., for this region? I don't want any "quickie seed." (Md.)

A. A seed that wil give you a sturdy, droughtresistant turf in the Mid-Atlantic region is Kentucky 31 fescue. This will cover a variety of purposes from lawns on sub-soil to play-grounds, athletic fields, roughs on golf courses, highways, airfields and many other purposes. It is not the kind of seed that you would choose for a small, extra specially good lawn. It is a good rugged, permanent grass that will hold up under drought. It will come in fairly quickly but it is permanent. It will thrive best under a soil that is approximately pH 6.5 to 6.7, adequately supplied with nutrients, especially nitrogen and mowed at a height of about 2 inches. If clippings are not to be removed, mow frequently enough so that the clippings are so short they will disappear into the grass.

Low Spots in Greens

Q. We are writing to you concerning the leveling up of low places in our bent greens. Greens are about 4-years old and over this period several low spots have developed in each green. Our greens were constructed by laying down a bed of crushed limestone, approximately 3in- to 4in-size, and covering this with a layer of soil. They are so constructed that they are 12in- to 30in. above fairway level and are well drained.

We have tried to level the low spots by using topdressing but have failed to bring them back to green level. Something probably was not done correctly when constructing the greens which caused the low places. But that is past history and our problem now is how to correct this condition. (Ky.)

A. It would seem that the soil ran into the large limestone rock and left a cavity which then caused a depression. The easiest way to correct the low spots is to remove the sod and fill the depressions, then re-lay the sod. With modern power sod cutters this can be done quickly and neatly. Be sure to probe the depressions deeply and tamped the new soil to insure no further settling.

I suggest using a fill soil just a bit sandier than that now in the green. Mix it with the top

ECONOMY Double Gear TRAVELING SPRINKLER

Designed specifically for large-area watering. Slow, continuous movement of the sprinkler head around the base distributes the water evenly and eliminates excessive run-off. Popular with managers of fine turf everywhere.

For further information write: **THE BENTLEY CO.** 4126 Airport Way, Seattle, Wash. MODERN Heavy Duty Lawn Mower Sharpener



Fastest most accurate lawn mower sharpener ever used. Sharpens all mowers, hand, power, greens mowers or fairway units. Bed knives may be sharpened without removing from mower. Full floating rails may be turned as desired, retain perfect alignment. Grinding head feeds in or out and will hollow or flat grind.

> MODERN Bed Knife Grinder



Engineered for grinding power mower, greensmower or fairway mower bed knives as well as most other straight edge tools. Clamps adjust to hold any length blade. Blades rest against solid base when clamping, eliminating all distortion. 100% steel, precision ground rails, ½ HP Motor.

Write for Free Brochure MODERN MANUFACTURING CO. 160 N. Fair Oaks, PASADENA, CALIF. 2 or 3 ins. of the stripped area for proper bonding and to avoid any layers.

Watering of Greens

Q. Our green committee and our supt. appear to have a difference of opinion over the watering of greens. The supt. says the best time to water greens is in the heat of the day. He prefers a hose to sprinklers. He says it is beneficial to cool the greens. His theory is that night watering causes various diseases of the greens. Is our supt. right? Is he wrong? Can we use a combination of the two? (III.)

A. Your superintendent is right and wrong. A combination of methods is a must.

Using a hose and a fine spray during the heat of the day is essential to cool the grass, stop wilt and save the grass. The hotter it is the more necessary this is. This is called "syringing" or "showering off" and is not properly called watering the greens. The best time to water greens, to wet the soil in depth as it is needed, is in early morning. This washes in the dew and guttated water, helps to dry the surface so that mowing and play can start sooner.

Night watering keeps the grass wet longer and increases opportunities for disease.

So, when a good watering is needed to restore moisture in the soil do it in early morning, if possible. In the heat of the day use the hose just lightly to "syringe" and cool the grass to stop wilt. Remember the slogan, "Water as Needed."



Worthington's New Paintless **Ball Stavs White for Life**

With no paint to chip or wear, the new "White Flite," made by Worthington Ball Co., Elyria, O., is said to offer the ultimate in long life, maximum accuracy and distance. The White Flite's new, specially-compounded cover is white all the way through. It is claimed that this gives better definition of dimples, providing more uniform wind resistance and thus, greater accuracy. Exhaustive tests in the last year have proved that White Flight gives maximum distance, according to the manufacturer. The ball has king-size number markings and is sold only through pro shops.

MacGreaor Consumer Ads

Photo lessons and product demonstrations are features of 1958 MacGregor golf consumer ads appearing in leading sport publications including GOLFING. Two blowup ads, with Jack Burke and Lionel Hebert hitting shots, are being made available for pro shop display.

Distribute Foot-Joy Catalog

The 1958 Foot-Joy golf shoe catalog has been distributed to pro shops throughout the U.S. It features 22 men's and 8 women's styles. The black, white and metallic bronze cover encloses a 65-page ordering guide for the pro. There is



For 32 years-made, sold and serviced by PAR-Inc. For 32 years—hundreds of PAR-TEEs in continuous use, and still the most modern tees, with lowest upkeep and unfaltering performance. No other tee has as many tees or years of use as the PAR-TEE. That's the record behind PAR-TEEs. Complete with driving and standing mat - ready for use in a jiffy. Available for rent or for sale.



Telephone: STewart 3-2400 860 East 75th Street
Chicago 19, Ill.



City..... Zone.... State..... Authorized by Title



a color photo of each model with brief description and a handy chart telling of availability of sizes on an in-stock or make-up basis. Foot-Joy is manufactured by Field & Flint Co., Brockton, Mass.

Modern "Professional" Edger

The Professional, latest model of Modern -Mfg. Co.'s widely used line of trimming machines, is designed and equipped to handle the



wide variety of jobs that make for neatness and beauty in turf border maintenance. Tools for different edging and trimming situations are quickly attached. Heavy duty. Operates on sidewalk, lawn or in street. Debris guard offers operator 100 per cent protection. 100 per cent steel, 2 hp gas engine, large rubber tired wheels. Full particulars from Modern Mfg. Co., 160 N. Fair Oaks, Pasadena, Calif.

Millburn Offers Peat Samples

Millburn Peat Co., 111 N. Wabash ave., Chicago 2, offers to send supts. a free trial bag of its machine dried peat which is steam sterilized to safeguard against weed seeds, insect larvae and fungi. The processor claims the highly organic peat will hold at least 15 times its weight in water and will not cake or water.



Burke Golf Equipment Corp. claims to have assumed the style leadership of the golf club industry with the introduction of the new Thunderbird Punchiron to its family of fine golf clubs. Thunderbird Punchirons are offered on a custom built basis only. They incorporate a new grinding and a specially processed "magic black" face. The magic black face, 4-years in development, is said to provide better ball control and sure fire alignment.