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.
Lewis Flagpoles always remain straight, won't rust, rot, kink, and are unaffected by weather. These featherlight poles are permanently molded in white and striped with an indestructible red epoxy plastic.

Available in 5', 7' and 8' Lengths

Lewis Flagpoles always remain straight, won't rust, rot, kink, and are unaffected by weather. These featherlight poles are permanently molded in white and striped with an indestructible red epoxy plastic.

*at your distributor or f.o.b. Watertown, Wis.

Packaged 9 per carton only.

18

NEW!! LEWIS BRILLIANT VINYL GREENS FLAGS

There's real wearability built into these beautiful flags. Sturdy vinyl, double-stitched and grommets for years of proud use. Numbers are a permanent part of the flag...cannot peel or be torn off. Flags are unaffected by rain or sun, heat or cold. Numbers 1 through 9, white numerals on red field; 10 through 18, red numerals on white field; also plain red or white flags.

Lewis Line

BALL WASHER

and

TEE ENSEMBLE

NOW, WITH LONG-WEARING NYLON BRUSHES

Pro and duffer alike appreciate the really clean balls washed with the Lewis Washer. Tamper-proof, weather resistant, durable, low cost.

For a well-dressed course, see the complete ensemble which includes: washer and data plate with interchangeable numbers, waste container, and tee towel...all mounted on a sturdy tee stake.

Containter 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 quality 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 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 materials 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 good 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.
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.

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 supt., to find out how their systems were set 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,
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 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.
 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-
Regular • SELL PAR TUBES • Plastic

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 GOLFDOM 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.

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.

For better and more economical golf ball washing
HENRY Golf Ball WASHER

- Will dress up any course • Dirty water will not splash • Heavy gauge steel • NEW improved insert in rubber squeegee • Oil impregnated bearings • No brushes to rot.

A. C. Schendel, Distributor
Box 92, Waukesha 5, Wisconsin

Dealers in all principal cities

HENRY Golf Ball WASHER

BALL WASHER

$14.75

Prices F.O.B.
Waukesha, Wis.
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 will give you a sturdy, drought-resistant 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, green 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, greenmower 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, 1/2 HP Motor.

Write for Free Brochure
MODERN MANUFACTURING CO.
160 N. Fair Oaks, PASADENA, CALIF.

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.”

GOLF TROPHIES and PRIZES
HIGHEST QUALITY!
LOWEST PRICES!!

FAST SERVICE

No. 900-20-5
All SUPREME Trophy, Walnut Base
Height 11”…$13.00

HAND ENGRAVING ONLY 6¢ PER LETTER
Manufacturers of “Dubbin’ Doug”
WRITE FOR FREE 1957 CATALOG
THE TROPHY AND MEDAL SHOP
Dept. G-5 10 S. Wabash Avenue
Chicago 3, Illinois CEntral 6-5018

Golfdom
Worthington's New Paintless
Ball Stays 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.

MacGregor 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

Leads Them All — On Its Record

PAR-TEE

The Proven
Automatic Tee

No other golf tee approaches its 32 year record of — continuous, dependable service

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.

PAR-INC.

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

Steri+Step

the wet strength paper slipper with heat-sealed seams

• COMFORTABLE • DURABLE
• CLINGS TO FEET WHILE WALKING, NO AWKWARD SHUFFLE

So many reasons why you'll vote Steri-Step disposable paper slippers best after a "use" test. The improved new creped kraft paper is plastic coated—they never get soggy or saturated, even in the hottest water. The improved one-piece construction features heat-sealed (not sewn) seams that won't burst when wet or under pressure. The foot-hugging contour of the seams makes Steri-Step paper slippers more comfortable too—and because they're tougher, stronger, they're more economical — last longer.

Mail coupon for Free samples


Yes, I want to try out Steri-Step Slippers. Please send free samples today, without obligation.

Name........................................
Address....................................
City......... Zone... State...........
Authorized by...................................

May, 1958
Introducing...
A DISTINCTIVE LINE OF GOLF TROPHIES, AWARDS AND RIBBONS.

Send for FREE FULL COLOR CATALOGUE NO. 102

Phone LE 2-0430
E.&H. SIMON Inc.
381 Fourth Ave. N.Y. 16, N.Y.

PHILLIPS CAM LOCK
GOLF SPIKES

The world's finest and best known. Will not turn or break apart. PRO'S CHOICE
F. C. PHILLIPS, INC.
STOUGHTON, 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.