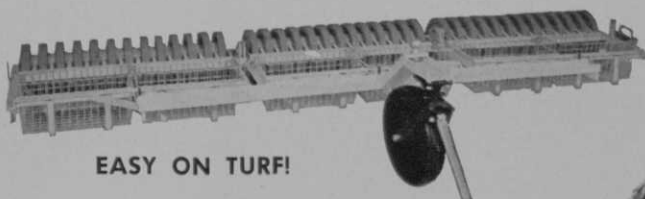


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Improved Turf Management

(Continued from page 36)

sulfate per ton, produced great results. It was supplemented with ammonium sulfate.

The management program calls for close mowing of the fairways at $\frac{1}{2}$ inch, probably three times a week in the active growing season. Tees are mowed at 5/16, or a trifle higher, with a grass catcher on the mower. All greens mowers are equipped with combs because of the scalping roller out front.

Zoysia in Japan

Zoysia is the popular turf on golf courses in Japan. Fairways are of the matrella type, roughs are japonica and the summer greens are tenefolia. There are two greens for each hole, one for summer and one for winter. The course is seeded to cool season grasses. We were told that fairways are produced by sodding. One man said fairways are re-sodded every 7 to 8 years but his statement was not verified.

The use of a fine textured hybrid type

of Bermuda, such as Tifgreen, should obviate the necessity for dual greens. Bermuda greens could be over-seeded with a mixture of poa trivialis, blue grass and/or fescue and seaside bent for winter play. Tokyo weather is no worse than that in the belt from Memphis east.

Covered with Plastic

In Japan the winter greens are covered with heavy-ply black plastic, or rice straw mats, when the prediction is for frost. The cover is removed early the following morning. This eliminates the necessity of delaying play until the frost is gone.

The Philippines is plagued with a great deal of rain during the rainy season — up to 30 inches in one month. Even Bermuda fares badly under such conditions. Annual rainfall is 70 to 117 inches. The rainy season starts in May and extends through September.

Iron chlorosis was prevalent on all greens we saw, even in December, Grass was thin because of chlorosis. The green-keeper at Tarlac confirmed our suspicion that it had been much worse during the rainy season. Ferrous sulfate had never

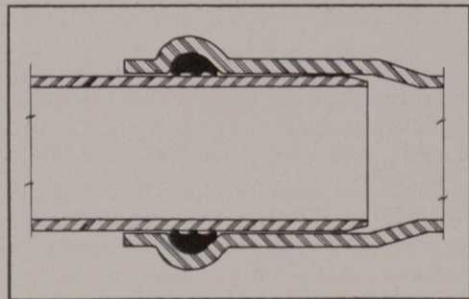


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been used. Supt. Teodoro de la Paz applied ferrous sulfate according to instructions. His remarks in a letter confirmed the need for the iron, but he remains unconvinced about grass behavior in the rainy season. He said "Your memorable stay with us contributed a big jump toward our goal. The ferrous sulfate you recommended made an abrupt change of the golden colored spots to more eye-soothing grass. It was only No. 6 that consumed much time in reaction. In our second application, crystals of ferrous sulfate were used.

Possible Solutions

"At present most of our greens are such that the soil is hardly seen," continued de la Paz, "especially greens 5, 7 and 9 wherein you said that we are much behind comparatively to what you have in the states. I can say you should see them now. Although such is the case, come rainy season again, even a non-golfer won't enjoy seeing our course."

There may be no answer, but the challenge is there. These things will help and

may be the solution: Surface drainage must be perfect, and in several directions. The sub-grade must contain plenty of tile. It should be covered with a blanket of 4 to 6 inches of gravel or stone. The topsoil should be sand mostly, with not to exceed 15 to 20 percent of organic matter by volume. The introduction of Tifgreen Bermuda by Trent Jones may be an added help because it produces better turf than common Bermuda. Then fertilizer and weekly applications of ferrous sulfate should provide better turf than heretofore.

The drive from Kowloon to the Royal Hong Kong club was time consuming, so there was very little time to examine the turf and course. Fairway cover seemed to be weeds, mostly of the bullgrass type. Soil in the greens was heavy and compact. Vegetative cover was Bermuda, some zoysia and a fair amount of weeds. Play was good but turf inferior by American standards. Unfortunately a Mr. Kerr, the supt. was not available so we had no opportunity to obtain first hand information about the course.



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Grau's Answers

(Continued from page 46)

since ureaforms, the first true slow-release nitrogen fertilizers, came on the market.

I was privileged to help apply the first "test-tube" ureaforms on growing turf at Beltsville in 1947. From 1956 to 1965 I took active part in educational programs designed to teach the principles of fertilizers and their use on turf.

The advent of ureaforms started the greatest activity ever known in turfgrass fertilizer research. As a result we have accumulated valuable and badly-needed data and information on how each type of material acts, how its nitrogen is released, how long it lasts, and how much each type of grass ought to have.

A recent visit to Ross Taylor at Black Mountain, N. C., refreshed our memory that several fertilizers produced strikingly different results on bentgrasses. The favored treatment was the one that kept the grass active and green throughout nearly the entire golfing year. At a resort course this means money in the till. The tests

are in their fourth year under the direction of W. B. Gilbert, N.C. State College, Raleigh.

Just recently we saw the first results of some amazingly advanced thinking in turfgrass fertilization at V.P.I., Blacksburg, Va. Dick Schmidt, in studying carbohydrate reserves in turfgrasses for his Ph.D. thesis, has developed ideas that may have a profound effect on fertilization practices. We saw Pennecross putting turf brown and dormant under a conventional feeding system. Where the new ideas had been put into practice the turf was green and firm, not lush, and root growth was active. Even though temperatures were near freezing, the golf course was dotted with players, emphasizing the need for active grass that can recover from the activities of the golfers.

Proper use of those fertilizers that depend on microbial activity for favorable release of nitrogen has emphasized the tremendous importance of good drainage, aeration, balanced nutrients, sensible irrigation, favorable pH, and other management factors usually not associated with fertilization.



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Over and over again it has been underscored: "More grass has been ruined by overwatering than by any other single factor." The reason? Simply because the aerobic bacteria (air-loving) have been drowned and suffocated. When this happens we know that the anaerobic organisms (without air) have a field day. They convert nitrates to the poisonous nitrites which kill grasses.

Irrigation Methods

This topic gets more attention than any other at all conferences. Emphasis seems to be on "All Automatic" to get away from the costs of manual systems and poor help. Before enthusiasm for ultra-modern systems engulfs us, it may be well to consider a few pertinent items.

Have we learned how to lime and fertilize for maximum results 1) without irrigation and 2) with irrigation? At least one specialist refused to help design a water system for fairways until the club developed sound management practices (lime, fertilizer, soil cultivation, drought-tolerant grasses).

Will there be enough water? In a time

of crisis we know that home use and industry come first; lawns and golf courses will be the first to be cut off.

Too often I hear the plaintive cry, "I know I'm overwatering but, if I don't keep the water flying through the air, the members climb all over me! What can I do?" More than 10 years ago the golfers in the city of Peoria were told bluntly that their demands for "more water to soften the greens" were responsible for the greens going out every summer. What we need is more and better information on how much water to use (and when and how often) on several grasses and more insistence that the golfers let the superintendent take care of the turf.

Cooperative Efforts

The recent Mid-Atlantic PGA meeting at the University of Maryland, wherein professionals, supts., club officials and managers participated, was a most heartening affair. The better understanding of mutual problems that developed will go far toward better teamwork within the club for the benefit of the golfer.

In some sections there seems to be a



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regrettable antagonism among the several departments in the club. Those who suffer are the members. When one employee fears that another is out to "get his job" it usually means that the two have not seen fit to sit down and talk it over.

Newsletters

At our College Park, Md. office we receive most of the GCSA Newsletters that are published. The associations and the editors are to be highly commended for their efforts to reproduce timely information and disseminate it to members and readers. Some letters have a surprisingly large and wide circulation. We believe that Newsletter efforts are worthwhile in several ways: 1) editorial training, 2) publishing experience, 3) learning to write clearly and briefly, 4) keeping others informed, 5) building a better public image.

Excise Tax

According to the USGA, the 20 per cent federal excise tax is assessed on only three things — attendance at horse and dog races and club dues and initiation fees.

Foresight in Planning

(Continued from page 56)

hind the parts room door. An upright compressor was chosen because of the space requirements. However, it is of sufficient size so that many tools can be run from it at the same time. Air jacks from the compressor are located in many parts of the building. This eliminates moving the compressor or having to use bulky air hoses.

General tool storage is provided for in the open shop area where all practical wall space is mounted with pegboard. Tools are stored in sections. One section has all the equipment that is used in welding. The CC of North Carolina does all its own welding, both gas and electric, from light aluminum to cast iron. This has resulted in savings of hundreds of dollars every year.

Another section of pegboard contains plumbing tools from pipe wrenches through threading equipment and pipe cutting tools. A third section in the gen-