Sub-surface drainage is an important element that should be considered when construction is planned. To rectify errors after building the course is an expensive proposition.

Seepage is a compaction problem frequently overlooked. It occurs when water pressure from higher levels raises the water table above normal in lower areas. If surface soils remain wet for long periods of time, seepage should be a "suspect". Usually it cannot be identified by casual observation, as water may be held below the surface. To determine if seepage exists, dig holes two or three feet deep with a posthole digger. If the holes fill with water, seepage is undoubtedly occuring. Better drainage of the entire area is the logical solution. If limited funds are available, intercepting the lines directly above the use area will adequately protect limited areas, otherwise it's a good idea to title the entire area.

Lack of adequate provision for surface drainage may account for excess water in the soil. Greens, tees, and fairways should be constructed in such a manner as to drain surface water as rapidly as possible into non-use areas. If proper drainage of these areas is not accomplished during construction, it may mean ripping them up and rebuilding later.

One method of detecting excessive standing water is to check the leaf surface of areas having a brownish cast. When such areas are mowed the tractors and mowers squeeze muddy water over the grass blades. When this water dries, it leaves a film of soil on the grass blades causing a brownish cast. Poor surface drainage is a serious problem particularly during periods of excessive heat — the grass will turn blue, then brown, and finally black. Turf is lost very quickly under these conditions.

Poor soils, poor soil structure and poor drainage are problems that can be corrected for the most part. Once corrected, maintenance of turf is made easier but the problem of compaction is never eliminated. It is a continuing occurrence and cannot be ignored. This is particularly true on today's golf courses. They are subject to heavy and constant play — and the human foot, as well as golf cars and carts, are among the most common compacting agents. They are aided by the weight of heavy maintenance equipment — mowers, tractors, etc.

These compacting agents will always be with us — as long as grass is used for recreation. Compaction will occur and re-occur. Because it affects the medium that supports plant life, it must be given first consideration in any turfgrass maintenance program. The process of alleviating compaction must be a continuing one. Grass has the same basic requirements as any crop or garden. Like them, it requires cultivation, especially in the spring and fall. It cannot be plowed or disced, but it can be aerified with special machines that have been developed to perform cultivating task without disturbing the grass itself. Aerification is basic to healthy grass growth and it ranks as one of the most important — if not the most important — cultivation techniques on any golf course.

Aerification is achieved by the mechanical manipulation of the soil. A core or plug of soil is physically removed by the machine and deposited on the surface of the turfgrass area. This leaves a hole in the sod. These holes eventually become filled from the soil surrounding the holes, and pore spaces develop once again. A hole of one-half inch diameter in the soil can relieve compaction in any area of about two inches around itself.

The immediate and direct effect of eliminating soil compaction on the golf course is the production of healthier grass. Other direct or unseen benefits include soil and water conservation. Mother Nature has provided for a natural soil rebuilding process — dead and decaying plant life which gives the soil a continual supply of organic fertilization. If we make certain that grass can produce deep, abundant root systems, they not only give life and sustenance to the living plant, but as they die, they decay and produce needed organic material. Good soil is thus conserved.

Water can only be conserved when every effort is made to make fullest use of natural and applied water. Tests have proved that as much as 80 percent of available water is lost through run-off when soils are too compacted to receive it. Remember, too, that good soils store water against the time when it is scarce; deep roots search it out and grasses stand a better chance of survival during drought periods.

Finally, there is the question of cost. Turf is expensive to maintain, and maintenance costs are directly affected by the quality of the soil. It takes more of everything, including time and money, to keep grass growing on poor soils. Economy of maintenance can only be accomplished when the quality of the soil is the first consideration.

Reprinted from G.G.C.S.A
G. M. Kozelnicky, Editor
article by Tom Mascaro

THE SPECTACULAR AMARYLLIS

Grow an amaryllis to bring flower color to your home early this spring. Lily-like amaryllis flowers are large and colorful, and show up well from the top of a tall, stout stalk, says James A. Fizzell, University of Illinois Extension Horticulturist.

Amaryllis bulbs planted now will produce blooming plants in about two months. The bulbs should be large, firm and mold and rot free. Only bulbs that are over 2 ½ inches in diameter will bloom the first year, Fizzell says.

The planting pot should be a couple of inches in diameter larger than the bulb. Most soil mixes available in garden supply stores work well for amaryllis. To make your own soil mix, Fizzell suggests combining two parts of loam soil, two parts peatmoss or compost and one part perlite.

Put a 1-inch layer of coarse gravel or broken pot pieces in the bottom of the pot to insure drainage. Then put a little soil in the pot and center the bulb. Spread the roots evenly, add soil around the bulb and pack it gently. About ½ to ⅔ of the bulb must remain above the soil surface for proper growth. The firmed soil level should be about ¾ inch below the pot rim.

Water thoroughly at planting time, but keep the pot out of the sun. Then the soil should be kept slightly dry until new growth appears. Protect the plant from hot or cold drafts; the best temperature is about 65 - 70 degrees.

When growth starts, move the pot to a warm, sunny window and water more often. In a few weeks, flowers up to 7 inches across will reward your efforts.

To save bulbs for another year of bloom, cut off flower stalks, when the blooms fade. In late May, move the pots outside and bury them up to their rims. Water them regularly and fertilize according to label directions with a soluble plant food.

Reduce watering when the leaves begin to turn yellow and wither in late summer. Bring the pots indoors before frost and place them on their sides in a cool, dry part of the basement. Let them rest without watering for three months. When new growth begins to appear, bring the pots out of storage and begin watering them for another bloom cycle.

James A. Fizzell, Sr. Ext. Adviser, Horticulture