(continued from page 80)

reflecting the "spotty" soil conditions underlying. In short, all of these factors mean that turf soils are more difficult to manage!

Where do we go from here? Good turf managers have learned the vital importance of proper soil conditions to the success of grass production and maintenance. Therefore, the problem is simple. By carefully studying and evaluating the soils you inherit, you can then go about an intelligent soil management program. For intensively managed turf areas (such as putting greens, tees, athletic fields, etc.) you may need to improve that inherited "dirt pile" by the use of soil ammendments. We know generally, for example, that heavy, mucky soils can be improved by the addition of coarse sands; or that infertile, ball bearing sands may become more productive by the addition of heavier soil fractions like clay or organic matter such as peat.

SOIL AMENDED TO IMPROVE PHYSICAL CONDITION

But just a minute! What really are we doing when we add the above soil ammendments (and many others — natural processed or manufactured)? First and most importantly, we are changing the physical condition of the soil.

The management of turf facilities imposes unique and damaging requirements on the turf. Heavy traffic, continuous wear, regular movement of maintenance equipment, high rates of irrigation — all these factors work to destroy soil structure. Thus, turf soils must be constructed (remember — no more natural soil, so we must construct a usable soil base from that inherited "dirt pile") to take the punishment and still grow good turf.

Here is where the soil ammendments come in — to change the inherited soil to a more desirable physical condition. Briefly, to produce good turf under our demanding conditions, soils must have proper pore space. There must be pores to move water through the soil and pores to move air so the grass can "breathe". Approximately half of the soil is made up of solids (the mineral matter plus a small amount of organic matter). The other half is pore space.

Pore space is of two kinds — large (macro) pores and small (micro) pores. Air moves into the soil (and harmful gases move out) through the large pores, except after a heavy rain or irrigation. Then they may be filled with water temporarily, which soon drains out. This is the ventilation system which aerates the soil. The large pores should comprise about half of the total pore space.

Small pores (also called capillary pores) move water through the soil. These pores conduct water to the grass roots (not the opposite — roots don't "grow to water" — water must be there first), from the water table, like a kerosene "hurricane" lamp moves kerosene up through the wick. The finer the pores, the farther the water will move, and the slower.

PROPER BALANCE OF LARGE AND SMALL PORES

The most important aspect of soil porosity is the proper balance between the large and the small types of pores. An excessive proportion of large pores will result in a well aerated but dry soil (like most of our sandy soils). Water will move through (percolate) too rapidly and very little will be retained to grow turf. An excessive proportion of fine pores, on the other hand, will exclude air and may be waterlogged (like heavy clay soils).

Thus, once we have determined our given soil situation, and knowing the physical requirements of our turf facility (percolation rates, drainage, etc.), we can then amend the soil to meet our requirements. A great variety of soil materials are available to do this including calcined clay, vermiculite, peat, colloidal phosphate, sand, etc.).

If we are fortunate enough to take over the turf facility prior to planting, we have a golden opportunity to shape our future soil condition. If we inherit an established facility, the job is more difficult, expensive and time consuming. It can be done gradually, however, by periodically working proper amendments into the soil as topdressing following soil aeration.

The proper proportion of amendments can be determined by a soil testing procedure known as "mechanical analysis". Many soil testing laboratories and industrial firms can provide these tests, and will help you compound or construct a soil to meet your needs based on such factors as percolation rates, etc.

Once you have amended your soil to a proper physical condition, then the previously mentioned secondary symptoms such as compaction, weeds, restricted roots, etc., will be minimized. Then turf maintenance will be a more enjoyable and successful business. ■

WHAT'S YOUR EXCUSE?

HUNDREDS of policemen entered a contest to find "America's most creative excuse for speeding." Among the entries were:

"My car is so light that the wind blew it over the speed limit."

"I was speeding to get away from my mother-in-law."

A woman claimed she was speeding to keep up with the cars behind her.

A man said he had a "right to speed" while making up for time lost in a construction zone.

Another man was speeding after being detained at a farewell party, where speakers included a lot of stuttering children.

Still another man was speeding because he was furious that his wife had just received a ticket for speeding. (This one incidently won the contest.)

"I have to go to the bathroom." was the most common excuse.