

FINE TUNING YOUR FERTILIZER PROGRAM

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Healthy turf makes your job easier. When maintaining turfgrass that possesses good color and density you fight off an endless list of problems. Unfortunately a good healthy turf can only be achieved by a fertilizer program that is planned and implemented with great care. When formulating a fertilizer program you must first evaluate your own particular needs. After this important step is completed, you must analyse all the fertilizer sources plus decide on a method to apply the material accurately.

Fertilizer requirements will depend a great deal on the variety of the turfgrass, the soil and the timing of special events. Each turfgrass variety has its nutritional needs in respect to the amounts of different elements needed to maintain optimum growth and visual qualities. Research your turfgrass needs thoroughly so that you have a complete understanding of the amounts and types of elements to apply. Your sources of information should combine the knowledge of extension data, personal knowledge, research from turf textbooks, plus the invaluable information from experienced superintendents. After the turfgrass element needs have been established we need to determine how to fulfill these requirements. Common sense tells you that the soil contains some of these needed elements, but how much is there and its availability can only be determined by accurate soil testing.

Whoever you choose to do your soil testing, make sure that they are a reputable firm with a good background in soil analysis. I strongly recommend that you choose one company and stay with them, so that the sampling and testing procedures remain as constant as possible. This type of consistency will begin to eliminate erroneous readings plus you will become familiar in comprehending the test results. Remember to have samples run at least once a year over the same tested area in order to monitor the results of the fertilizer program. The physical analysis of a soil is also extremely important so that you can review the exchange capacity of the soil particles. Information such as this will enable the turf manager to determine leaching qualities of fertilizers and help to determine application intervals needed to maintain consistent healthy turf. Certain laboratories perform leaf tissue sampling which is a beneficial aid to compare soil test results to the actual amount of material that is taken up by the plant.

Whether to use liquid or dry fertilizer always seems to raise a good question. I personally like some properties of the two types of fertilizer and incorporate both of them in our fertilizer program. Approximately 65 per cent of our total program is liquid fertilizer injected through the irrigation system, while the remaining 35 per cent is dry material. Injected liquid fertilizer has many advantages but the two key items are the fact that the amount of material applied can be regulated with ease and it can be effectively utilized through the winter. The flexibility of the injection pump allows you to increase or decrease the amount of fertilizer you wish to apply. Your fertilizer needs will vary quite a bit depending upon temperature, amount of rainfall, condition

of the turf, etc., so the adjustment on the pump will let you program in those needs. Because of the "busy" winter season, plus the non-growth conditions, liquid fertilizer becomes essential during this time of year. When you are playing 200-300 rounds of golf a day it doesn't seem feasible to shut down your golf course to fertilize. Optimum fertilizer levels during this time of heavy play and colder temperatures are critical in order to maintain the turf in best possible condition. Applying light, frequent amounts of fertilizer in a physical state that can be quickly taken up by the plant, proves that injected liquid fertilizer is the answer during this time of year.

Dry fertilizers play an important role in the total fertilizer program. The proper timing and types of materials applied must be considered when planning a dry fertilizer application. Certain types of dry fertilizer will be better utilized during warm conditions, other types of materials will perform well when the soil moisture is at a higher level. When you decide to feed your turf take these items into consideration before selecting a fertilizer:

1. How quick a response I need?
2. How long must the fertilizer last?
3. What will the normal environmental conditions be like when I apply?
4. What are the micro-nutrient needs?
5. What is the condition of the turf?

With the answers to these questions you can make selections from the various types of fertilizers available on the market today. You, as a superintendent, should evaluate your fertilizer needs and percentages when formulating a mix. The sources of materials should be studied and chosen with great detail in order to insure proper effectiveness of the fertilizer. Inorganic and organic (synthetic and natural) sources of nitrogen, should be put in proper ratio so that you can receive what you want out of the fertilizer mix. Applying these dry fertilizer mixes at predetermined amounts should be as accurate as possible. Fertilizer spreaders should be calibrated so that you are spreading the actual amount that you think you are. Special care must be taken when applying with bulk spreaders because a mistake can appear after three or four fairways are already completed. Dry fertilizers serve their purpose at different times of the year by forcing the roots to act out their plant function of taking up nutrients that were applied to the soil.

Whatever type of fertilizer you decide to use, make sure that the material is tested by the State Fertilizer Inspector. On every ton of fertilizer purchased you pay a \$.25 tax to the State for this inspection service, so, for your protection, you should use this service. In order to insure that consumers are receiving the proper quality and quantity of fertilizers, have the material tested before it leaves the vendors plant.

Accurate record keeping that involves all the particulars about your fertilizer applications are very helpful. Make sure all the settings and amounts used are recorded along with helpful data concerning the environmental conditions. Keep copies of all your fertilizer tags on file for reference materials if any questions arise. You spent a lot of time reviewing the turf on a day to day business, but don't neglect to study your fertilizer program to evaluate its strong and weak points. ■