

too much. There is not enough to produce the results we expect and must have. We have invested money without an adequate return. So, how much is enough to do the job? This is one of the most difficult problems which a superintendent has to meet, and, unfortunately, there is no simple, blanket formula that can be applied. Are clippings removed or allowed to remain? What is the soil reaction and physical condition? What do soil tests show with respect to phosphate and potash levels? Do growth rate or tissue tests of the grass indicate that nitrogen is getting low? What is the watering program? What are the characteristics of the fertilizer itself? Is the nitrogen in slowly available form or is it completely soluble? What kind of grass is to be fertilized and how is it managed? And finally, what is the weather? These are some of the important things that must be recognized and correlated when we attempt to arrive at optimum rates of application. An understanding of them and ability to apply that knowledge is a part of what gives the position of Golf Course Superintendent a professional rating. The results of experiments and technological studies of the various relationships can give him the background information that will help to form sound judgments, but maximum results will be achieved only as they are interpreted in terms of the conditions and needs on the individual courses. (Incidentally, that applies not only to fertilizer programs, it applies to every management practice connected with golf course maintenance.)

Cost Factors

Finally, any discussion of getting the most out of fertilizers cannot ignore the cost factor. The actual dollars and cents value of "what is in the bag or bottle." Certainly, the actual cost per unit of plant nutrient materials plus differences in time and labor of applications must be considered. If a unit of nitrogen in one fertilizer costs twice as much as in another this must be taken into account. But, is first cost the only thing, or, always, even the most important thing? Undoubtedly, it would be, if all nitrogen was in the same form and could be handled in the same way. Unfortunately, this is not the case. There are material differences in rate of availability, safety and ease of application, frequency of application, stimulation of growth, and rate of loss.

The ultimate aim on the golf course is

to produce a good playing turf of uniform quality throughout the entire season. We abhor peaks of rapid growth and succulence, and valleys of starvation. Both experience and experiment have shown us that these are the things which cause trouble. Because so many things beyond our control contribute to the rate at which immediately available forms of nitrogen are consumed or lost, it becomes extremely difficult to determine just when, how often, and at what rate such materials should be applied. The popularity and wide spread use of the more slowly available natural organics is excellent evidence that this is recognized and that other considerations beyond first cost are involved, in fertilizer use. This should not be construed as an argument just for or against any particular form of fertilizer. It is simply an attempt to marshal the facts that must be considered in trying to get the most out of what we use. There are times when we need quick action. There are others when we do not want it. An ability to recognize what we need and when we need it and a knowledge of what formula, or material will best meet the situation, these are the secrets of getting the most out of fertilizers.

Survey Shows Good Clubs Used on Cheap Balls

PAT Markovich, pro at Richmond (Calif.) GC, did a smart job of market surveying that might be discreetly adapted by other professionals.

Pat had his assistant, Paul Allen, checking equipment used by Richmond members. The check-up showed that standard top quality balls were sharing preference of the better scorers but, according to the survey findings, "the surprise was in the number of off-brand balls used by members who possess expensive sets of clubs."

Results of the survey were disclosed in the Richmond club's monthly bulletin, "The Approach."

Then another surprise was given to some members with the reminder that some discontinued markings of highest quality balls were available at the pro shop at prices lower than paid for off-brand balls bought elsewhere.

The story concluded with the line: "If you are looking for bargains that will not affect your game check at your pro shop first."