



South Florida Sunshine



By BRAD G. KOCHER
Inverrary Country Club

Fall Fertilization

No matter how you apply it, fall is the time to increase turfgrass nutritional levels in South Florida. The bermudagrass generally does not go dormant as it does in the northern half of the State, and high nutrition levels are necessary to keep the turf healthy and vigorous.

Sixty to seventy percent of our annual play occurs here when the bermudagrass is least likely to grow. We experience temperatures as low as the high 20's during the November to April months with mid-40's, 50's and 60's being the average morning low.

Additionally, the hours of daylight may be as little as eleven hours compared to our long summer daylight hours of up to fourteen to fourteen and a half hours further putting a stress on bermudagrass that does not want to grow.

September through December are the most important months to prepare for the less than ideal growing conditions that prevail particularly from mid-December to the beginning of March. If we get behind in our nutrition levels during these months, it is very difficult to "catch up." The bermuda can slip into a semi-dormant state and very high nutrition levels would be necessary to bring it back. It would also be likely that other nutrition-related problems would develop, i.e. weed encroachment in weak areas, "thin" stands of turf add greater compaction from cart use on these "thin" areas.

Although different superintendents have differing opinions on amounts of nutrients to be applied, we can establish some generally acceptable norms. In South Florida seven to eight pounds of nitrogen per 1000 square feet for rough fairways and green slopes will provide in most cases adequate nitrogen requirements, even though several superintendents use substantially less. Phosphorus, although most South Florida soil samples show sufficient levels, can be applied one half to one pound per 1000 square feet per year to ensure availability should there be deficiencies in some areas. Potash levels, and there is room for a great deal of discussion in this area, can vary from four to seven pounds per 1000 square feet per year. There seems to be some very positive results on many courses that are using a one to one ration of nitrogen to potash. I believe we will see greater use of potash in the future. Minor elements are used in much less proportion with magnesium additions the most necessary.

Differing analyses are certainly necessary for different times of the year. Weather conditions dictate which levels of elements are necessary and it is up to the superintendent to analyze and decide which analysis is best suited to the needs of his course.

Most superintendents in *South Florida* will apply 75% of their nutrient requirements from September 1 thru April 1st. Between three quarters to one pound of nitrogen with proportionate amounts of potash and minor elements per month should produce healthy and hardy turf that can withstand cold weather extremes during these months.

As is the case with nearly every phase of golf course maintenance, the methods, rates and sources of nutrients vary greatly with the preference of the golf course superintendent or consultant who sets the fertilization patterns for the year.

Pull-behind fertilizer spreaders such as the John Deere and the Lely are widely used as a method of doing your own granular fertilization. There are also commercial operated truck mounted spreaders who can fertilize your course for a reasonable cost per ton. Additionally, there is the fertigation method by which liquid fertilizer is injected directly into your irrigation system. It is controlled by the superintendent through variable percentages on a fertilizer injection pump. Fertigation is becoming more and more widely used every year.

A look at several different superintendents and their methods show substantially different analysis of fertilizers being used, but judging from nutrition levels and course appearance, the end results are admirable.

Neil Kalin at Pembroke Lakes, a Western Broward County Golf Course, kicks off his fall fertilization program in mid-September with an application of an 0-8-16 mix at approximately 400 lbs/A. He follows this in about ten days with a sulfate of ammonia (20-0-0) application at 250-300 lbs/A. Another application of sulfate of ammonia usually follows by mid-October at a 200-225 lbs/A rate. A sulfate of potash (0-0-50) mix is also applied prior to October 30th at 400 lbs/A. The next application of fertilizer is put on around February first and is again sulfate of ammonia. Neil feels potash levels in his soil are the key factor to winter hardiness and turf recovery.

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Doral Country Club's superintendent, Dick Lemmel, will fertilize his courses in late September or early October with a 16-4-8 analysis (5 of the 16 nitrogen units being urea formaldehyde) at a rate of 1½-2 lbs. N/1000 square feet (400-550 lbs/A). He continues with this mix at approximate eight week intervals going again in December, February and April. Supplemental applications of a special blend of liquid fertilizer is sprayed on an as needed basis through the winter. The blend is 20-20-20 analysis with Techmangum. Dick uses a spray vehicle with a flood jet nozzle attachment. Green and tee areas are also supplemented with liquid fertilizer of a 12-0-6 analysis and sprayed on in a similar manner.

Golf courses on liquid fertilizer generally apply fertilizer each time they irrigate. Although many blends are available, the most popular analyses are a 12-0-6, 11-0-5, 20-0-0, 8-0-0 and a 30-0-0. The goal per month is approximately one pound of nitrogen per 1000 square feet and approximately ½ to ¾ lbs. of potash, along with minor elements during the Fall months. December through April levels drop to around ¾ lb N/1000 month and proportionate reductions in other nutrients. Constant applications of fertilizer are the key to providing consistent availability of nutrients using the fertigation method.

No matter how you apply fertilizer or how often or what analysis is used, soil testing is an absolute must. Without this information, we are just taking a shot in the dark at the plant nutrient requirements. Periodic tissue analysis of turfgrass leaf blades will also show you which nutrients the grass plant is using. The laboratories can suggest

nutrient requirements and then we can use our talents and preferences to determine how and when we satisfy those demands. ■



Members are (left to right) Les Brown, La Gorce Country Club, secretary-treasurer; Dave Lottes, Rolling Hills Country Club, director; Brad Kocher, Inverrary Country Club, president; Ernie Alexander, Miami Beach, vice-president; Kenneth Nicholson, Woodlands Country Club, past president; Mike Newell, Coral Ridge Country Club, director; and Al Weitzel, Metro-Dade, external vice-president. ■

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