

The concept of fall fertilizing throughout the country is. generally conceived as a final preparatory fertilizing for hardening off the plant for winter dormancy. In south Florida, specifically Palm Beach County, golf course superintendents imagine the fall fertilizing program in a much different perspective, as even compared to the next few counties just to the north. There are many superintendents in Palm Beach County that do not over-seed any of the golf course, while they produce tournament quality conditions 365 days a year.

When one thinks of tournament quality conditions, golfers can easily associate with the PGA National facilities in Palm Beach Gardens. Certified Golf Course Superintendent, John MacKenzie, finds a maintenance schedule that is jammed throughout the year with tournaments. Renovation work is extremely difficult to perform. However, projects must be performed within the prescribed time, as the show must go on. For example, during my interview, I was able to catch John at the turn during the PGA Junior Championship.

John MacKenzie is employing a fall fertilizing program that will make everyone happy in the clubhouse. The program actually is a two-stage process that begins in August. Summer renovation in May and June, along with a high pressure insecticide injection for mole crickets during July reveals August to be the ideal month for the fall fertilizing to begin. Soil tests reveal deficiencies in potash to be the major problem, while a 1-0-1 relationship proves to be the most beneficial for proper growth and recovery. A 15-0-15 with 1/3 slow release Nitrogen and the balance of sulfate of ammonia is paralleled with Potassium, all being sulphate of Potash. Minor elements are included with one unit of Iron. This blend is applied on fairways and rough at a rate of 450 lbs/A. McKenzie feels the August fertilizing aids in the development for better root structure, which in turn, proves beneficial during the stress of winter.

The second phase of the fall fertilizing is continued during mid-October. Again, the same product is applied. However, this time results will allow for the plant to maintain a level of consistency, which is the key word in McKenzie's program. Because of the fact of year round tournament conditions, the courses must always be kept up to par. Since turf growth is not viewed with levels of peaks and valleys, the consistency does not bring about a need for overseeding. Management of the greens is primarily with a 17-1-10 every 18 to 21 days at a rate of 1 lb of N/1000 square feet. As there is an interest in the color of the greens, mowing heights will vary with temperature. During the severest of cold stress, heights are raised to one quarter inch on 328 Bermuda. At this time, charcoal is applied at a rate of 2 lbs/1000 square feet via a 100 gallon centrifugal pump with a flood jet nozzle. McKenzie states, "This I believe in plant growth by the result of increased ground temperature."

The major problem for McKenzie is time. Since time is of the essence, a spreader service is employed for bulk applications. A course is closed at noon, while a spreader truck begins applications at 1:00 P.M. and follows play. Within four hours, all is applied, resulting in little down time for the golf course. Obviously, time is so much of a critical factor at the PGA, for McKenzie must look good year round.

Another golf course that always looks good and up to tournament specifications is Pine Tree Golf Club in Boynton Beach. Golf Course Superintendent Fred Klauk, a scratch golfer himself, is well qualified to produce superb conditions year round.

Unlike the PGA, Pine Tree's program begins a little later because play is not as heavy during the summer. Klauk's fertilizer program tapers off during the summer and is kicked in gear around October. Soil tests show a deficiency again of potash, while a 15-0-15 proves to be the most beneficial analysis. When night time temperatures approach 60° F, a nitrogen source of IBDU slow release at a rate of 350 lbs/A for fairways and rough are incorporated into the blend. This program is continued again about eight weeks later in December. The rough will not be covered at this time.

Some of the most respected greens found anywhere are maintained at Pine Tree. A meticulous program again reveals consistency. Beginning November 1, a 7-3-7 with 70% ammonium sulfate and 30% sludge is applied every two weeks at a rate of $\frac{3}{4}$ to 1 lb/1000 sq. ft. When night time temperatures dip below 55° F, the rate is increased to $1\frac{1}{2}$ lbs/1000 sq. ft. Putting speed consistency is the primary goal at Pine Tree as green color is not judged as the factor for good play. Mowing heights are adjusted by the means of a stimp meter, as 8 to 8.6 feet is the general average. Hand walk mowers are used beginning the 1st of November, while mowing heights are adjusted accordingly to accommodate for the consistency.

The additional aid to consistency is a result from periodical top-dressing. A 90/10 mix of medium to fine sand matches existing basic soil structure. This, in addition to an application of IBDU, at a rate of 1 lb/1000 sq. ft. combine to overstimulate the turf. Charcoal is not applied, as the topdressing instead, provides the means of stimula-

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tion. The topdressing, which in theory, acts the same as a fertilizing. These practices, from the fall, prove beneficial, as club tournaments are consistently played with pride.

Of all the golf courses in Palm Beach County, few clubs exhibit such heavy play, yet maintain good quality turf throughout the season as Atlantis Country Club. Certified Golf Course Superintendent, David Bailey, finds the fall fertilizing to form the foundation for the season. Text book theories must be revised here, as Ormond Bermuda, dense shade and extremely heavy play on small greens averaging 4,300 sq. ft. prove to be high stress to the turfgrass plant. For Bailey, the end of September, which usually is after the heavy summer rains, correlates to the beginning of the fall fertilizing. The concept is to fertilize. but not too early, and then have to deal with excessive mowing. Summer soil testing taken after the heavy rains. when the soil is most deficient, reveals an analysis of an 0-0-30 at a rate of 400 lbs/A that is applied for fairways and roughs.

In mid-November, a 10-10-10 is applied to equalize nutrient levels across the spectrum. Bailey states, "I am not interested in purchasing unneeded elements as the soil test along with course conditions reveal the demand." A few weeks following, a 20-0-0 liquid is applied through the fertigation system to begin equalizing the nitrogen/potash levels. The nitrogen program is continued at a rate of 30 to 40 lbs of Nitrogen/month until May, or in other words, the end of the heavy playing season. January and February show to be the severest of months, so an 0-0-30 is again applied in late December, as this is the last of the bulk dry applications for the season. The liqud provides the source from here afterwards, as play always exceeds 300 rounds a day. Because of the ease of application and the design of individual irrigation head control, the fertigation system proves to be quite beneficial.

The fertigation is a bonus to the system, as once again we find a 1-0-1 analysis. The greens are maintained on a similar ratio as IBDU and an 0-0-30 is applied, which in reality, boils down to a 31-0-30 analysis. The Nitrogen is slow release and the 0-0-30 also is a low risk for burn. Bailey feels "this combination is so efficient and effective for me, it works as well as a 3,000 lb ton. Fast, smooth, consistent putting surfaces are the factors for my criteria. Color is not a factor and overseeding is not used, because the putting surface desired could not be achieved with such small greens and heavy traffic." Once again, a light topdressing is used every three weeks during the heaviest times of play. For Atlantis, we find a unique combination of dry and liquid with high analysis ratios, yet little risk of burn.

Of all the means for fall fertilizing, perhaps the most unique program can be found at Banyan Golf Club. Certified Golf Course Superintendent, Dan Jones, employs a total liquid fertilizing program. Again we find a 1-0-1 ratio applied as Jones feels "an 8-0-8 best suits my needs. I have used the 12-0-6 and the 11-0-5, but I feel the 8-0-8 to be the best ratio, because I need to get the Potash levels up, while the higher Nitrogen lelvels are not needed.

Beginning September, the plant is growing during a period of maximum uptake for storage of food for the fall. So, for September, October and November, Jones applies 40 lbs (Continued on page 32) AGRICULTURAL LABORATORIES



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of Nitrogen/acre/month. From December onward, the program tapers down to 30 lbs of Nitrogen/acre/month. The greens are treated with a similar blend at a rate of 1/4 lb of Nitrogen/1000 sq. ft./week except this analysis contains 0% Chlorine content because of the intense care of the greens.

Soil test, along with tissue test, provide additional data. The difference between the soil nutrient level and the uptake within the plant has caused Jones to specify an application high in minors. The program gives Jones a total management program. The elemental poundage of material applied per month is the same as any other course; however, the spoon feeding effect again maintains a level of consistency.

After reviewing several different golf courses and analyzing their respective programs, we find different analysis, grade of material, and means of application. Even though each management program is unique, the programs all produce the common denominator: excellent tournament quality condition-type golf courses year round.



During the month of June, at the J.D.M. Country Club, the Palm Beach Chapter of the Florida Golf Course Superintendents Association elected the new Board of Directors for the 1982-1983 year. President

BILL KRIEGEL, CGCS, Delray Beach C.C. Internal Vice-Presidnent STEVE PEARSON, Boca Groves C.C. External Vice-president FRED KLAUK, Pine Tree G.C. Secretary JACK CUNNINGHAM, CGCS, Eastpointe C.C. Treasurer MARK JARRELL, CGCS, Palm Beach Nat'l C.C. Directors GLEN KLAUK, Delray Dunes C.C. JOHN McKENZIE, CGCS, PGA Nat'l Golf Club DENNIS WEBER, Frenchmen's Creek C.C. Past President — Vacant MARK HENDERSON was appointed by the Board

to fill Kevin Downing's move to the Treasure Coast Chapter.

Congratulations to all for the fine past year, and may this coming year be even better!