

The turf industry will soon be finding a cold and dreary winter ahead, as old man winter will be sweeping through the south. It is not enough for golf course superintendents to endure rainfall shortages, irrigation cutbacks and an overall scrutinizing for the budget, but now we must prepare for winter hardiness in the most economically, feasible way possible.

Cold winter hardiness preparation is not simply a procedure that a superintendent begins to consider in the fall as the snowbird migration begins southward. Preparation actually begins in the spring, immediately following the end of the season, as the amount of play tapers off and good turf growth begins. Cultural practices of aerification, verticutting, topdressing and the application of pesticides during the summer are used to prepare the golf course for a healthier stand of turf to endure the combat of excessive play and cart traffic and compaction during the winter.

Certified golf course superintendent Scott Sincerbeau of Royal Palm Yacht and Country Club begins his winter hardiness preparation during the month of May. Sincerbeau believes, "Get the turf as healthy as possible as soon as you can for the winter. You have to have it there by November 1st. There is no way you can get the turf much stronger through the winter".

One of the major problems of winter is the decrease of light duration, decreasing the ability of the plant to overcome stress. Producing turf buildup of quality levels off to simply trying to combat the hardships from play during the season.

Sincerbeau's first cultural practice is to aerify wall-to-wall. That's right, aerify the rough, fairways, tees, green slopes, collars and greens. With aerifying finished by July, a nematicide is injected wall-to-wall at an approximate cost of \$100/A over 100 acres of the course. Nemacure is then applied, accounting for 20 acres of either greens, collars or slopes. Within four weeks, scalping is performed on the fairways, tees and slopes, while a slightly less thinning is performed on the rough. Within three weeks, during the month of August, a 15-0-15 fertilizer at 375 lbs/A is applied, followed by a lesser application again in mid October. A fertigation system based on an analysis of a 12-0-6 is applied through the season. The greens receive supplemental fertilizing of Milorganite or a 15-0-15 blend until late November, whereupon the blend is changed to a 18-4-10 UF of 3 to 4 lbs of N/1000/month. His changing of fertilizer material reduces the possibility of burn or the invitation of host organisms during moist weather conditions.

can impede mother nature's natural process". This is why Sincerbeau's basic concept of summer preparation for a warm season turf is to prepare the plant to as durable as possible.

We like to think of south Florida as being within the subtropical region and dream of warm, frost-free mornings. Waking up to reality, the warm season grass optimal temperatures do not fall below 80°. This causes a difficult comparison to make for the northern golfer who ventures to the south. They often do not honestly consider the difference of the optimal growing temperature for their homeland cool season grasses of optimally withstanding 65°. In other words, they can boast of northern cool season color, but let's be fair in regard to climate and conditions.

Even though we work extra long and hard during the summer to ready ourselves for the winter battle, we still must use reserve powers to overcome the winter hardships.

Mowing pratices are generally the most acceptable means of cold temperature tolerance. Glen Klauk of Delray Dunes Country Club often finds his change of height "much like a yo-yo. Not to sound humorous, but you must mow to the conditions." His green height of cut can vary from 1/4" to 9/64", depending upon the turf grass species. An important consideration is to often skip a day's mowing. Klauk feels "there is no sense in abusing the machine and turf, if the yield is not there". The perimeter path can be eliminated or taken inward to reduce the wear and compaction.

At Boca Greens, it has so far been my personal choice not to own walk mowers, but rather make the operator adjustments for the triplex greenmowers. I train the greenmower operators never to turn around between the green and the green traps. The mowers are driven all the way off the collar and actually make a wide sweeping turn on the green slope banks which are maintained at rough height. This can account for as much as 25% more mowing time. I feel the labor time cost compared to the wear damage which would result from the tight turning, is more beneficial.

Other practices of wear adjustment can be through the directions of traffic flow by stakes, ropes, signs, and even lines painted to mark directions of travel. Cups can be changed more often while ball marks should always be repaired.

Of everything the golf course superintendent asks from the golfer, there are still practices the superintendent can regulate. A reduction in the amount of water applied to the course by the process of heavier applications less often can (Continued on Page 33)

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(Continued from Page 32)

permit deeper perculation, thereby inducing a deeper root system. Bill Kreigel, C.G.C.S., of Delray Beach Country Club believes this practice can support a healthier plant for the cold winter stresses. Tests have concluded for him that he is producing deeper, heartier roots that are less dependent upon water while nutrient availability has improved. Another beneficial practice in relation to irrigation can be the use of wetting agent penetrants. Kreigel has found the alcohol base wetting agents more beneficial to irrigation efficiency. Kreigel has been using less fertilizer, less electrical needs for irrigation while producing a turf of better color and increased durability.

Another important aspect of the wetting agent's surface is during the threat of frosts. By reducing the quantity of leaf exudation and retaining moisture within the colloidal material, frost occurrance can be greatly reduced.

The agronomic situation becomes more specific when Kreigel applies his micronutrients. The concept is not so much retaining color and growth during the severest times, but to allow the turf to have greater recovery potential. Agronomically, this boils down to achieving an equally balanced nutrient available soil.

The whole general concept of cold winter hardiness preparation never ends, but is always beginning with more new concepts to contend with an unnatural situation. The next time one asks you why the greens are off color in the dead of winter, you can always be glad to remember that dead translates to totally no growth forever, and after all, you probably will only skip mowing for a day.



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