

THE HEAT'S ON!

by BILL SMART

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As mid-summer draws near, it would do well to remember that very little of our natural landscape is grassland as we know it and cultivate it on our golf courses. The north-west coastal range and the north-eastern seaboard are the only two large areas that come readily to mind. The early settlers saw little grass as we know it today. Perhaps the long bladed grasses in sections burned off by the Indians in an effort to obtain game; a common practice by this early American—or perhaps they saw finer swamp grass or native bent growing in abandoned beaver ponds that had silted to meadowland. Nature it would seem pollutes to good advantage at times.

Should any Golf Course Superintendent of today have Indian blood, he might call the season approaching The Time Of The Ulcer—for this period from June through early September truly tests the fortitude and knowledge of the turfman.

To solve a problem, one must first know what the problem is. To me the true enemy in midseason is just one factor—Heat! Most of our summer conflicts evolve from growing grass in an environment that seeks to reject this unwelcome intruder. Leave a golf course untouched for 10 years and it will revert to the native countryside; only the hand of man keeps it a sward of grass.

Once you accept this premise you can take steps to “cool” it. It is astounding to me how few do accept it. Ask any man in turfgrass management what his major summer problem is and he will likely reply: disease, wilt, labor, poor water system. *Poa annua*, heavy play, and so on. While all of these annual ills may be present, the root of the problem is plain old high temperature. If the reader dis-

agrees with this, it will be no more than I expected; but let me assure him that my conclusions have not been hastily drawn.

The answers to two nagging questions gave me some insight on grass failure in midseason. (1) Why did courses with minimum budgets often come through the season with less trouble than more affluent courses? (2) Why did some course superintendents, who watered “incorrectly”, have such an astonishing greens survival rate? The answers, and the acceptance of the heat factor theory during the 100 day period starting June first, led to a new concept in my summer maintenance.

First and foremost, I geared all my planning to the survival of the turf I had at the end of May. Care of what I had took priority over all else. This meant no projects—no construction—no extras, after June first. Maintenance and mow, water and watch. I am referring to greens in this article, especially older greens before the introduction of the newer, more tolerant bents; however, the basics would apply to other turf as well.

I have always held that any disturbance of the green surface during hot weather is a serious error. Only under the most unusual circumstances would I consider vertical mowing or aerating after the June first deadline. Even topdressing and fertilizer applications tend to injure turf in stress periods. The dark material tends to absorb heat and raise the surface temperature of the turf; and if the material is dry (as topdressing normally is, and most fertilizers are) it absorbs moisture from the surface of the green. Small factors, perhaps, but they are to be reckoned with.

There are times when well-intentioned greens chairmen will dispute

the "100 day" rule and it takes the courage of conviction to stand your ground. I could fill these pages with case after case where the condition of the course suffered, in the prime playing months, due to projects or work best left till fall. In many cases, the superintendent is his own worst enemy in this respect. We all take on extra work we really have no time for and our men have no skills for. This is usually done "to save the club money"—or, in the case of the inexperienced green chairman, he feels you can handle it because you have a few schoolboys on as summer help.

Two cases will illustrate my point. (1) A superintendent was called before deplorable condition of the course in his Board of Directors to explain the midseason; his explanation that he and his crew had taken time to put in blacktop around the club and saved the club \$1,200 did not impress the Board. (2) A man on a nine hole course was forced to lay two men off in August. Reason?—"the grass isn't growing now and you don't need to mow it so often."

The plain and simple truth is that most courses have maintenance crews and they have little time for anything other than routine upkeep (if they are to do it well) and it takes all the skill and manpower a superintendent has to bring a course through this most critical period. A friend of mine in Westchester (Bob Hope called this metropolitan New York County a "populated golf course" because of the many courses) was fond of saying "Anyone can run a golf course . . . up to the Fourth of July." As I have stated, I prefer to roll that back to the first of June.

Wilt

Detecting wilt in early stages is not easy for the untrained eye. In my crew of eight men, only one can be depended on to see it and stop all work until it is under control. He is my fairway man and is in position daily to head off trouble. Although I have never tried them, Polaroid sun glasses will detect wilt much sooner than the naked eye.

The use of wetting agents on turf is still in its infancy. Although they have been used nation wide. In my use on two courses, plus my first-hand knowledge of their use on other courses, I find that they definitely aid in obtaining uniform moisture levels. And, when used with phenyl mercury, they help to control water loss through the stomates. Proper use, in connection with other factors I have mentioned, has almost eliminated syringing on my course. Localized dry spots due to heavy thatch or severe contours have also been eliminated as one of my summer worries.

"X Pounds of N"

Fertilization practices on golf courses are a nightmare to one who attempts to evaluate them by practices used on other courses. No two use the same material in the same way. The text book approach is not much better, with only a guideline of X number of pounds of N, and adequate levels of P and K suggested. With so many variables (soil type, type of turf, timing, area of the country—etc.), is it any wonder that each superintendent has his own individual program and that this often as not varies from year to year? To further confuse things, we have organics, inorganics, synthetics, and their different forms and prices. My early observations led me to believe that most, if not all, superintendents fertilized not for health and growth—but for color. It is understandable to want greens that are pleasing to the eye; but the massive doses recommended and applied (as high as 12 pounds N per 1000 sq. ft.) produced a forced, soft growth. In many cases, this is at a time when the turf is trying to cope with its artificial environment by going into a semi-dormant stage. This leads to excessive disease, scalping, salts build-up, slow putting qualities and that "old debil", wilt.

I do not claim to be the first to go on a low nitrogen program for greens; indeed, many low budget courses use one through no choice of their own. This is one reason why the smaller courses often have less trouble

than the plush layouts. After much trial and error (too much of the latter), my fertilizer program for *all* golf course turf has evolved in two pounds of Actual N (in organic form) on dormant turf in early winter, and another pound in mid-September. During the summer season, a very small amount of water soluble fertilizer (in the weekly fungicide spray) is used on greens and low cut tees. Color? Iron Sulfate in the same spray gives me all the color I need or want. This program is minimum in cost and labor but, more important, it produces a slightly hungry turf which is more disease resistant, less prone to wilt and yields just enough growth to replace natural wilt (golfers are natular to a golf course). My rates may be too low for some of the newer, more aggressive bents. My greens are fairly typical of older courses in this area—South German bent plus overseeding through the years with whatever was fashionable or least expensive. *Poa annua* is present, although not a problem percentage-wise, and is on the decline. As is typical with other older courses of this area, the collars are almost 100 per cent. *Poa annua* as are the low cut tees and fairways. I am on no program to eliminate *Poa annua*. There has been much discussion about living with *Poa*, but, to the best of my knowledge, no one in this area has actually gone all-out on a program with this goal in mind. It has been done successfully on greens and low cut tees—why not fairways? If I can hold collars of 100 per cent. *Poa annua*, why not 40 acres of fairways? Last season was easy; nature co-operated. Water was put in the fairways in the fall of 1964 and my *Poa annua* is now fat, healthy and aggressive. I believe O. J. Noer said, "*The little grass plant wants to grow; let it.*" That is exactly what I plan to do.

Summary

Turf, as we maintain it, is seldom a natural growth and its most critical period is the 100 days from June first on.

The only way to handle "extra "

work in this period is to have extra men and money—over and above your working crew and working budget. Better still, contract out all special jobs.

Another serious error is never leaving well enough alone when the course *is* in good condition. I have been as guilty of this as anyone else. Our pride in our work and our intense personal interest tend to make us try to make things just a little bit better—or try to please everyone. It is done every season—verticut to make the greens faster for the member guest—an extra shot of fertilizer when you host the local meeting—lowering the cut because the club champ had a bad round and went to the chairman (who came to you). I see, and have made, the same old mistakes every year. A good mid-season rule to follow is: If In Doubt, Don't Do It! Turf can be lost through too much attention, as well as the lack of it.

Perhaps the most important tool you have is your watering system. If you have a fully automated system that is in perfect working order with all the water you need—God Bless You—not many can make that claim. The rest of us must accept the system we have (at any rate, for this season). The vital concern here is to get the turf in the best possible shape before its peak use. This is clearly the responsibility of the man on the job. Indeed, no other person will know or care about your pumps, pipes, valves, hoses and sprinklers. The system should deliver every possible gpm, with no flaws to sap its potential. All portable watering gear should be in plentiful supply. And if I did have an automatic system, I would check and recheck it well beforehand.

Most authorities refuse to be pinned down on watering practices. We are all aware of the stock phrases: "*Apply an inch a week*"—"*Go as long between watering as possible*"—"Overwatering is bad, and underwatering is just as bad." After trying every method I could think of, I have come to the conclusion that what I am after is a uniform, constant moisture level—and

this is best done by a short watering period *every morning*. On the silty loam greens of my experience, about 10 to 15 minutes would seem to be about right—but like all the “experts”, I would like to qualify this by common sense factors. These include expected weather, past weather, presence of *Poa* green construction, gpm of the sprinkler and on and on. This early AM watering will wash in any possible accumulation of salts, aid in fertilizer break-down, reduce disease development and help keep the day-time surface temperature down. Most important, however, it should give your greens protection from sun, wilt and wind for just *one more day*. Multiply this by 100 and you are through the season. But, don’t count on it alone. A greens check just before noon is good insurance. In some cases a light syringing can be made after lunch. This is one operation for which the rule is: “If In Doubt, Do It.” No turf was ever lost due to a light mid-day watering. In true stress periods, check again in time to repeat before your men are through for the day. Over 75 per cent. of my time during a normal (dry) summer is spent in some type of watering activity—this, of course, includes supervision of those who are doing the watering. I feel that some of the reaction to this will be, “But I don’t have the time or men to do this”. My reply to this is, “I can’t imagine anything more vital to the course or your own welfare”.

Another annual error is lack of

proper instruction on syringing greens. On many courses it amounts to, “Joe, you take the back nine—and Louie, get the front”. Many greensmen feel that this is a casual, rather foolish operation and can be done any old way and get on with more important work. Then there is always the man who is gone for hours and reports back, “I really gave them a good soaking”. I have made it a point to syringe once early in the season as sort of trial run, to remind the old-timers what it is all about and to instruct the new men. One minute to a thousand square feet, at my course, is enough during stress periods. The aim is to replenish the moisture through the surface of the leaf and to lower the soil level temperature. This is *not* the time to build up moisture in the root zone; this is the job of normal irrigating. Hand syringing leaves the most margin for error and this system needs careful and constant supervision and instruction. In quick coupling systems, the use of sprinklers will eliminate coverage problems but is somewhat bothersome to players. With pop up, semi or full automatic, the only concern need be with timing; many superintendents give instructions in terms of “let the head revolve six times”.

For hand syringing, a 75 foot light-weight, high quality hose makes a durable outfit to transport from green to green. Fogg-It nozzles, drilled out to $\frac{1}{4}$ inch, are inexpensive, unbreakable and pocket size. I keep three 75 footers, coupled and nozzled, ready to go at all

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times. They are not used for any other purpose.

You are the only person who knows what your watering system should be. If it is not right, fix it—remodel it—update it . . . this fall. For the present, care for it as if your job depended on it . . . and it does. Instruct others that their job also depends on it.

A little watering every morning may be wrong culturally, but so is our close-chopped golf course turf. Does it make sense to wait till mid-day and perhaps be forced to syringe to save wilting turf, with probable root loss that takes weeks to recover . . . or would you rather plan an hour's work in the morning that will give you peace of mind and insurance all day?

Four Discoveries

H. W. Meusel's work at Yale proved that stomates in the grass leaf can be closed by chemicals, and thus retard wilt. It is neither mysterious, expensive, difficult or dangerous. Nor is it a cure-all.

I consider that there have been four

major turf developments in the past 25 years: (1) selective weed control by the 2, 4, D materials, (2) chlorinated hydrocarbon insecticides, (3) broad spectrum fungicide concept plus iron sulfate, and (4) use of wetting agents on turf.

It is too early to judge, but I suspect that I will be adding low nitrogen dormant feeding to this list.

If your course is in good shape at the end of May, (and it should be) make a resolution to keep it that way for the next 100 days. Don't try, at this late date, for any "improvements"—save them till after the 8th of September—the end of the 100 days. The nights are longer and cooler and you will have made it through another season.

If I have stimulated your thinking or struck a nerve, I would be happy to hear from you. Do not write and expect an answer between June first and September the eighth!!

With acknowledgements to "Golf Superintendent"



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