A LOVE-HATE RELATIONSHIP WITH POA ANNUA

An extract from a talk given at the New Hampshire Turf Conference at Bedfore, N.H., on January 15, 1981.

For too many years the thrust of work with Poa Annua has been in the area of chemical or cultural control in an effort to decrease the Poa population and encourage other grasses. This could be termed a hate relationship. Almost without exception this has proved to be a failure, and in many cases an expensive failure - in terms of money, time and personal reputations.

Judging from the current printed matter and personal observations I feel that the attitude is now undergoing a complete about face. Slowly but surely the emphasis is being directed toward finding out more about the Poa Plant and how to grow it. This could be termed a love relationship but at this stage of development is more of a, "If you can't beat 'em - join 'em" solution.

There is no doubt in my mind that if I had good healthy "Desirable" turfgrass with a small percentage of Poa Annua that I would discourage the annual bluegrass by any means at my disposal, chemical or cultural. Unfortunately, turf of this description is the exception and not the rule.

With the previous in mind I offer the following thoughts on how to cope with Poa Annua.

I don't think that many Turf Managers will argue with the premise that proper watering is the key to summer survival of Poa - and in fact all turfgrasses in the Northeast. Just **what** is proper is the subject of much off-hand discussion. It never ceases to amaze me that such an important phase of turfgrass culture has had so little research that there is almost no written data to refer to. Phrases such as "Apply one inch a week, water infrequently and deeply, don't water in the Spring 'till the turf shows signs of stress, and syringe lightly once or twice a day" are often seen in turfgrass literature when in fact they are impractical; if not actually misleading.

Needless to say your water system should be as good as labor, love, and your available money can make it. Don't waste time dreaming of the perfect water system - there is not such animal. Face up to another fact - no one really cares about your irrigation system except you. Not your golfers, the people who use your park, your Green Chairman or your Park Director. It is up to the turf manager to add some lines, change a head, develop a better water source and in total to make the water system the best possible tool he can. Desire and interest are far more important here than a lot of money.

Early morning watering, from dawn to mid or late morning seems to be the most desirable time to water turf that is in use during the day. Even an automatic system should be activated in the dawn or pre-dawn hours to give a cooling effect to the turf as close to the peak heat hours as possible.

This will in most cases carry the turf through the stress periods with little or no additional water or syringing. This would be especially true in the early and mid-season but would need use of judgement later in the year as the deeper roots tend to be reduced due to summer dormancy. At any rate, if syringing is a normal operation the watering practice should be reviewed to allow it to be a controlled operation and not a panic situation. It is much easier to obtain water personnel for the dawn to noon time frame than it is to hire for night operation. Running water in the dark is counter productive in that it is difficult to see, is dangerous, and is impossible to personally supervise. All this is a poor trade for the one advantage - not interfering with the use of the turf - and early watering **can** stay ahead of the player most of the time.

Watering in the Spring should begin at the **first** sign of need, droughty signs on light or poor soil areas. If this is very early consider it a test of the system and watermow a "Dry run" before the real life and death test. Put your brightest and most dependable greensman on this and impress on him that his is the single most important job on the course. Tell him this every day and listen to his ideas and thoughts. If it rains for two days give him three days off - with pay. Within reason let him develop his watering method within the broad outline you have laid out. Above all make him feel it is **his** job and you are holding him 100% responsible for the moisture profile in the turf. He should have no other duties that are not somehow connected with his basic job.

The amount of water applied should be directed toward getting the turf at field capacity; or put another way it should be just short of being able to press free water out of the turf with your foot. The minute the water application stops natural functions (air/water movement, drainage and temperature) will attempt to bring about conditions as they were before you started to water. Your water program should attempt to keep a uniformly moist soil at all times. Due to the limitations imposed by your water systems, turf use, climate conditions and cost, this goal is seldom attained for any length of time - nevertheless it should be your target. Detractors will say that it will lead to overwatering - and I agree. It is a fact of life that seems to be overlooked or ignored that almost all turf in the northeast with a half-way decent water system **is** overwatered by August. To keep fine turf (that should be semi-dormant if grown in its natural environment) in the condition its use dictates it is far better, in fact necessary, to err on the side of too much water, rather than too little. Too much water may make for unhealthy growing conditions at least on a temporary basis. Too little water may result in death on a permanent basis. Do we have a choice?

Making allowance for natural rainfall there is nothing wrong with applying water every day during the 100 day period from June first to Sept. eight. It certainly makes more sense to me to apply water in the early morning light than to run around between golfers in the heat of the afternoon.

This "Hot One Hundred" also coincides with the school vacation and the peak golf period. A bright college or high school lad is the usual answer to keeping the turf in shape for the short but hectic season.

There is more agreement on fertilizer useage than on water management. Poa Annua responds well to three to four pounds of nitrogen per season. More than this would be a waste of money and time - except in unusually starved and neglected turf. There is also general agreement that two pounds in November and one in September will give all fine turf good but not excessive growth. An additional pound in late May and early June might be applied on well drained areas where the leaching would warrant this action. On greens this might provide too much growth for good putting qualities. At any rate the old axiom to keep the greens somewhat on the lean side is good advice.

To avoid a salt build-up and possible fertilizer application stress use as low as salt index fertilizer as is possible in your program. Natural organics and some of the synthetics give the turfman a slight edge in this area.

Iron sulfate is so inexpensive and easy to use, it is hard to understand why it is not standard operating procedure on all fine turf areas. One ounce per thousand square feet in the spray tank is standard for combating yellow insipid looking turf. Up to four

ounces can be used and at the higher rate can produce a startling growth and turn turf a very dark (almost black in some cases) green. For fairway use, as little as one pound per acre seems to promote good growth but no visual color change. For small nozzle application it is necessary to make a slurry and strain the result through a fine mesh sive or nylon stockings before adding to the spray mix. This fine chemical tool can be used to offset yellow induced by over-watering from natural (rainfall) or artifical (sprinkling) sources. No ads will be seen extolling the virtues of iron sulfate, it is too cheap and easy to come by to be worth the expense. (Note: See Iron Application in this issue)

A good fungicide program is a must for all good turf, Poa or otherwise. All fungicides work as indicated on their label. Choice will be dictated by past use and cost factors. Do not expect a fungicide to perform on a disease it is not labeled for and change your material from time to time to avoid creating a resistant strain of fungi.

While bent is much more prone to thatch problems than Poa, Poa can also have a stemmy buildup especially if fostered by high cut, infrequent cut and high nitrogen. Studies show that the single biggest aid to thatch reduction is topdressing. An all out reduction program would be aerification, shatter the cores with a verticut (an effective topdressing) use of brush and comb on greens mowers and correcting the maintenance methods that encourage thatch. Aerification is best done early in the Fall while brushing, combing and topdressing can be done in any of the cooler months.

Wetting agents have been around since 1954 but are still not widely accepted by turf managers and have almost no advocates among the academic turf people. Only recently has the United States Golf Association Greens Section suggested that wetting agents "might" be of value in some cases and are worth a trial. Many chemicals and materials have come and gone since World War II. One soil admentment that was in every turf program in the 1960's is scarcely mentioned in print today; and if it is found in the maintenance building today is more likely to be used for soaking up oil and grease than in greens application.

It is ironic that part of the reason for the lack of wide spread acceptance of surfactants (wetting agents) is that they work so well that a statement of what they will do (by someone who has had practical experience with them over a period of time) is greeted by almost universal disbelief by non users; so much so they would feel foolish even making trial use of the material.

Wetting agents **do** work. The fact that they are still around after over twenty years attests to that. My own use of over 140 gallons per season of this rather expensive material out of a very tight budget also makes a statement - as does my use since 1954.

Put very simple, surfactants break down water structure and help it penetrate tight knit turf, crowned areas and compact soil with poor air space structure - it aids in moving the excess water down and through the overwatered areas. This helps give us the uniform moisture profile needed to keep the roots healthy and growing. The thatch breaks down more readily due to the constant moisture. This moisture and the better root growth can often make the difference between survival or injury on a hot summer afternoon; and I can state it does a lot for a turfman's peace of mind on those long July and August week-ends.

Poa can be maintained during the Northeastern summers. It is almost never easy. It takes time, hard work and at least some money - but most of all it takes the desire and interest to work with what you have to produce a quality stand of turf.

On the plus side is the fairly short period of stressfull activity - one hundred days, give or take a few days. Within a few years I am sure we will know much more about Poa and it is within reason that this most populus of turf grasses will find acceptance and even love from its former detractors.

Bill Smart - Editor, Foreground

Dear Ray,

Summer's here and so are some of the same old problems. Sound familiar?

"SUMMER DILEMMA"

When mycelium greets you, in the morning dew,
Your greens are fluffing, collars turning blue.
Play is heavy and cut worms start to chew,
Floods had reached to just below your chin.
You find your patience wearing mighty thin,
Like the man says, "What will you do?"
"What...will...you...do?"
Yes! I know! tell him to his face.
You know for sure, you're still in the race.

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"EQUAL RIGHTS"

This is a subject that has created much controversy among the sexes for many years & usually continues to remain somewhat of a unresolved situation with men & women and especially with the politicians. It always seems to be in the NEWS!

Many women have equal talents and abilities equal to men. While others are still content to be totally feminine.

Personally I admire anyone who does anything well and takes personal pride in his or her accomplishments; regardless of the task. These people I applaud and admire very much and they deserve recognition to the fullest degree in every category.

In the sporting world, for the most part; COMPETITION WISE very little or no quater is given because of sex. The same rules or difficulty is the same for the most part. With a few exceptions & golf happens to be one of these exceptions to the general rule.

Now I probably will get a lot of flack for the following thoughts! Everyone today is faced with cost factors. Just stop and try to figure the added dollars and cents that occurs on maintenance & construction budgets for extra LADIES TEES...

Plus the accessories to accommodate those extra tees. It will vary considerably pending the nature of an individual facility.

Why not consider a RED/WHITE COMBINATION marker and the Championship Blue only. Rules can be modified in these changing times to benefit all. Along with some cost cutting on the budgets overall. There is an old saying, "What's good for the Goose is good for the Gander". And I think it should apply in all competitive sports.

Leonard Schnepf, Supt.
Chevy Chase G.C.

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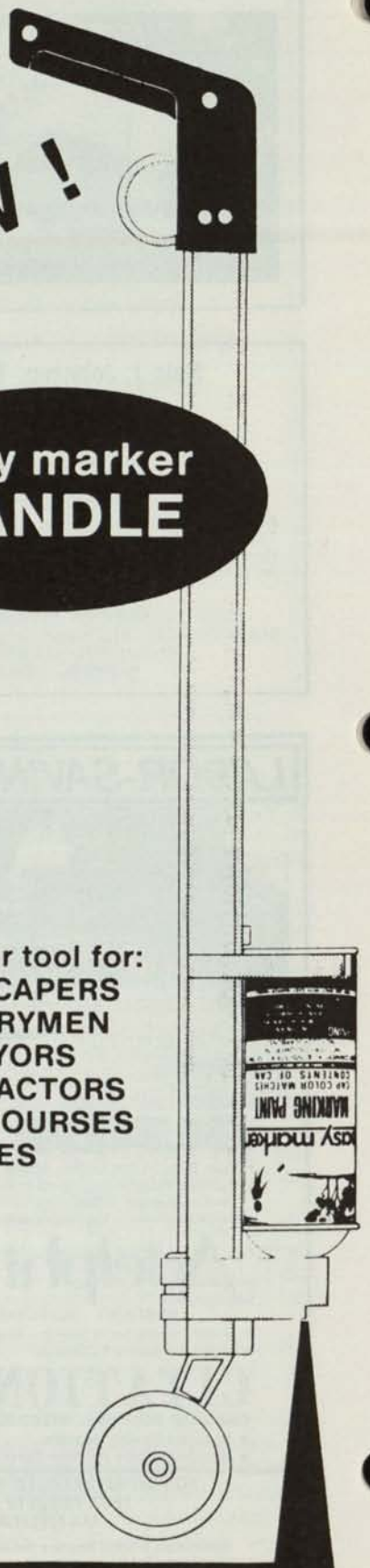

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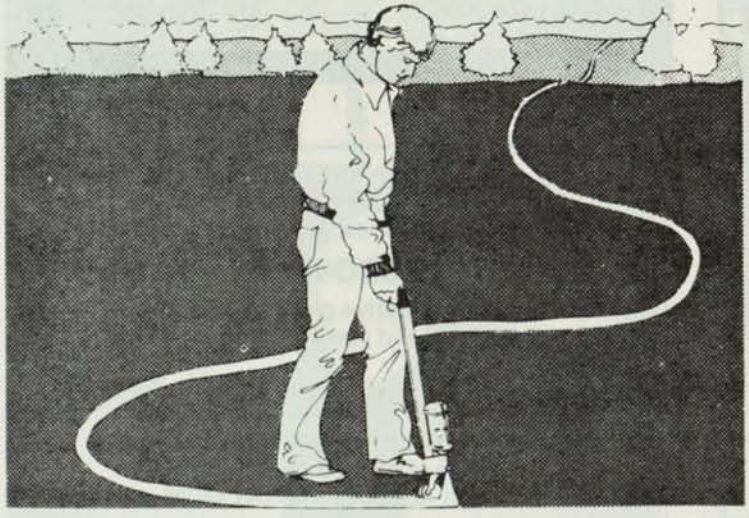

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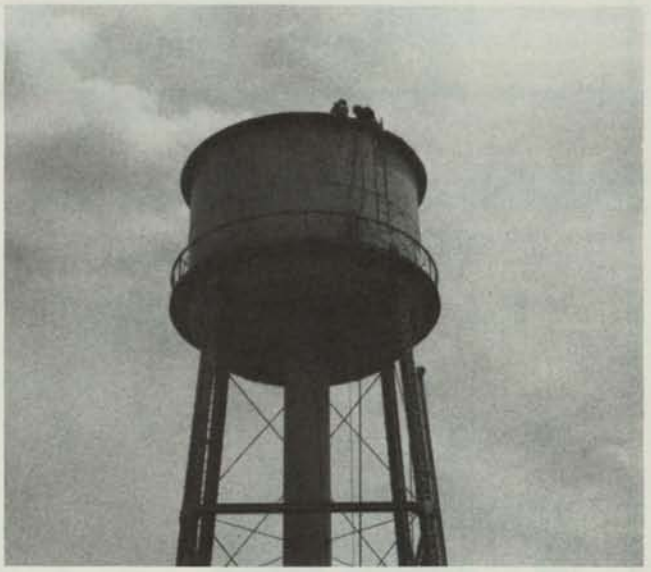
Bob Williams observes the excellent putting surface on the practice putting green at Butler National Golf Club prior to the Western Open.



This water tower has served its purpose at Chicago Golf Club. Note the two men on the top.

A new maintenance building for Butler National Golf Club is in progress.

Does anyone have the correct answer on how to kill algae which is on a lake where the water is used for irrigation?

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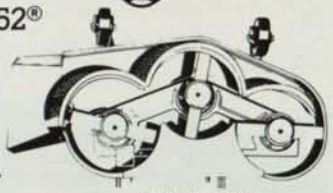
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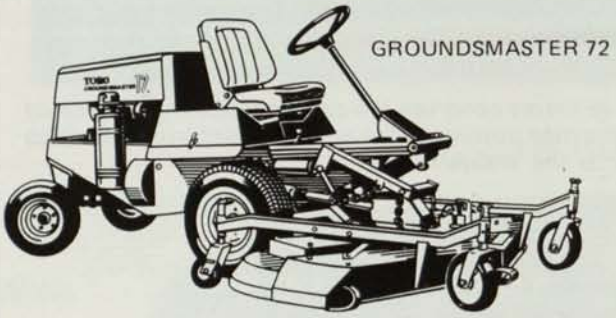


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IRON APPLICATION - RATES, CARRIERS, & TOXICITY COMPARISONS

The micronutrient most commonly deficient on turfgrass areas is iron. Deficiencies appear as an intervenial yellowing of the youngest actively growing leaves. Under a continued iron deficiency, the chlorosis spreads to the older leaves and the plants become weakened. An iron deficiency occurs on the youngest leaves while yellowing from a nitrogen deficiency occurs first on the oldest leaves. Iron deficiencies are associated with soils having high calcium and magnesium contents.

Correction of an iron deficiency can be accomplished by a foliar application of ferrous sulfate ammonium sulfate.

Soil applied complete fertilizers with iron and activated sewage sludge materials also contain significant amounts of iron. Reports of problems with foliar burn following applications of water soluble iron as a spray are not uncommon. Thus, this study was initiated during the summer of 1976 to evaluate the effects on the pronness to turfgrass phytotoxicity. Four iron sources were utilized in the test: ferrous sulfate, ferrous ammonium sulfate, Chelated 138, and Chelated 330. Rates of application were 0, 4, 8, 12, 16, 20, and 24 pz. of material per 1000 ft.^{2} Applications were made by means of a hand sprayer to four square foot plots. There were three replications utilized in two tests during 1976 and one test during the 1977 growing season. Visual estimates of foliar burn to the bentgrass and bermudagrass were taken along with any positive responses to the iron application.

Results. No foliar burn or noticeable response was observed at the 2 oz. per 1000 ft.^{2} application of iron sulfate to creeping bentgrass. The 4 oz. and 8 oz. rates showed a definite greening response with no foliar burn evident. There was a slight burning at the leaf tips from the 12 oz. rate with the extent of foliar burn becoming greater as the rate of application was increased above this level.

No burning or greening response was noted from the 2 oz. application of ferrous ammonium sulfate. The 4, 8, and 12 pz. rates produced a significant enhancement of green coloration with no foliar burn. However, phytotoxicity was evident at application rates of 16 oz. per 1000 ft.^{2} and above at temperatures of 75 to 80°F. At warmer temperatures of 90 to 94°F, foliar burn from ferrous ammonium sulfate was observed at a rate of 10 oz. and above.

Chelated 138 caused a distinct reddish coloration which persisted on the leaves and was fairly objectionable at application rates of 12 pz. per 1000 sq. ft. and above. Chelated 138 did produce a slight greening at the 2 oz. rate and substantial enhancement of green coloration at 4 oz./11,000 ft.^{2} and above. Foliar burn was first noticed at the 16 oz. rate of application and became progressively more severe as the rate was increased to 24 oz.

Chelated 330 produced a slight greening at the 2 oz. rate with a major enhancement of green color at higher rates similar to that reported for Chelated 138. However a slight foliar burn was evident at the 6 through 14 oz. rates. Objectionable degrees of foliar burn were evident at rates of 14 oz. per 1000 ft.^{2} and above.

Summary. Results from these investigations indicate that foliar burn is occuring at relatively high application rates compared to those commonly in use. Frequent reports of foliar burn at substantially lower rates, suggest that the iron is being applied with the other chemicals, which in combination, are causing foliar burn. The rate of application at which foliar burn occurred did vary among the four materials and increased as temperatures increased. However with temperatures up to 95°F. on a creeping bentgrass turf, iron applications can be made in the range of a 4 to 8 oz. per 1000 sq. ft. without concern for foliar burn.

J. B. Beard, J. H. Eckhardt, & Gerald Horst [From "Patch of Green"]