

**THE BULL SHEET, official publication of the
MIDWEST ASSOCIATION OF GOLF COURSE
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PRESIDENT'S MESSAGE

The golf season is well under way and now is the time to be using good public relations and communication skills with your members or with the golfers at your course. These next three or four months provide the highest demand on our abilities to explain, promote, encourage, discourage, relate, or in short communicate the events that take place in order to provide the best golf turf possible. We should all strive to improve these skills in order to provide a smooth and successful golfing season. What about the employees that work directly under you? How are you doing in the area of communication with these people? A superintendent is only going to be successful if the lines of communication are open between he and his staff. Listen to what your staff tells you with an attentive ear. Some of the best ideas at the Grounds Department at Riverside Golf Club have come from members of my own crew.

What about public relations? This is the time when we can and should be as visible to the players as possible. This means having conversation with them on the course, in the grill, or in the Pro Shop. Speaking of the Pro Shop, how well do you communicate with this person? Remember, he sees almost every golfer that plays your course, and that means he can be an excellent vehicle of communication to them for you. What about the Manager? Certainly the same case holds true for this department head as well. His support for your operation can be very important and his lines of communication to the members or golfers are as many and varied as that of the Golf Pro. Good working relations between department heads is crucial to a successful golf season, not only for you but for the golfers as well.

One last thing I would like to mention. I remember back a few years ago when Bob Williams gave a talk at a Midwest Clinic in which he advised us all not to forget to "stop and smell the roses". We tend to be a very intense group during the season, often by necessity concentrating so strongly on our jobs that we may overlook the fact that it is summer and we too have a right to enjoy that time of year with our family and friends. So this year, when work at the course seems in a whirlwind, try taking some of Bob's advice before the roses fade and summer passes you by!

Roger A. Stewart Jr.
Roger Stewart, CGCS

MAGCS Directors Column

What's in Store for '84

by Julius Albaugh, Supt.
Westmoreland Country Club

Recently, while reviewing weather data from the Spring of 1983, I ran across some not so welcome similarities. Another cold, miserable spring; if one can call it spring at all. We have had but one different twist, which occurred on April 29th and 30th with 24 hours of 45 to 60 mile per hour winds - which resulted in a repeat of our just finished spring clean up. What a wonderful way to start a season, another two weeks behind schedule. Sometimes we forget, often we are all in the same boat. What bothers me is are we headed for a repeat of 1983?

In this modern world of today, with our advanced technology in weather forecasting and all, many of the old sayings or predictions on forecasting weather have been lost. After all, they have no scientific backing. But, is it only because of coincidence that makes some of them come true? Let us review some I have heard recently.

A late Easter, a late Spring. This year has certainly verified that statement. Hopefully, the late Easter is the reason for our cold spring. I would like to hope the similarity thus far to 1983 stops there.

When the **Poa annua** seed production is unusually heavy, look out for an unusually hot summer? I first heard this one last June; it had come from an "oldtimer" in our Golf Course Superintendent's ranks. We had just had a bumper crop of **Poa annua** seed, but yet my feeling at the time was, "How could a **Poa** plant know anything?" To me the Summer of '83 placed some merit to that tale. We should look to see what the 1984 **Poa annua** seed crop is trying to tell us.

Hot summers run in three year cycles. I've heard this one from several sources lately. The sources point to our last real hot spell, the mid-1950's, three record breaking heat and drought years in a row. This one concerns me; I've heard it from several sources, non-related. It makes me wonder, could it happen again? If it happens again, would we be better prepared than last year?

In some ways it is doubtful if we are better prepared than last year. As we look at the problem areas of 1983, especially those that were renovated after mid-September, we still see a potential problem. In many cases the turf is still thin, and recovery is not to the point we would like to see. The traffic areas that suffered last year to turfgrass wear and compaction still have not recovered. In fact, the early season traffic is starting many of these areas on a downhill slide in early May. By contract, the problem areas of 1983 that were renovated prior to September 15th show new vigor, are well healed, and have an excellent stand of desirable turf. Early renovation seems to have been the key. We must take advantage of the warm soil and early fall growing conditions for better seedling establishment.

Over all, we have learned by the experience of 1983. A repeat, although dreadful, will be handled differently. Many have been able to increase their budgets to provide more labor and materials to combat the extremes. Several have improved irrigation systems by renozzling to correct problems that developed last year due to uneven coverage. Others have been

successful in acquiring new equipment to change their fairway mowing techniques. One of the factors that stood out in 1983 was the use of lighter equipment and clipping removal on fairway turf. We have used the experience of an extreme year to our advantage.

As for forecasting the future weather conditions, it remains to be anyone's guess. The old predictions observed from nature or past experiences sometimes are more accurate than the modern day scientific 5, 10, 30 or 90 day forecast. They are interesting to note and follow at times and to be compared to today's satellite forecasting. But regardless of whether we know what the future holds in store, we must take our weather conditions as they develop; it is one thing over which we have no control. We can only continue to learn and improve our maintenance techniques to better cope with what nature deals us. So don't sell the farm yet, the old predictions have no scientific backing. Just take note of the 1984 **Poa annua** seed crop.

A Letter From "Herb Graffis"

Dear Roger,

You and your teammates have really thrilled the lead out of my dead fanny and put spring in my heart with the Honorary Membership.

My warmest gratitude to you all. And to think that my brother Joe and I were in when the Midwest was being born and had the honor and worry of participating in the work of the Midwest fellows who were modest, even virtually anonymous pioneers in the immense and comprehension of fine turf development that eventually qualified all of us in the game's Green Section to make the boast no other sport can make "Golf Keeps America Beautiful."

No other working group in sports has contributed nearly as much to the environmental, social, and economic national progress as the fellows in charge of golf courses and the collaborators in their work. And for you all to remind me that Joe and I have been members of your team when you were starting really thrills the hell out of me and at my time of life, I rarely am thrilled.

I can remember playing golf at Riverside with that most amusing of all sports writers, Ring Lardner. I think Bob Lessley, a pioneer in bent grass nursery business around Chicago, also was a member there as were other fond pals of mine.

I continue to be very much interested in the "Bull Sheet". It maintains the high and helpful standard Ray Gerber set. As my sight is bad I have the "Bull Sheet" read to me. It gives me a bright close-up on what's going on. That story of the superintendent telling of his pride in a fine small course and sharing the headaches and joys of stretching the budget with the greenchairman of the great sort, a club is lucky to get.

I miss the older members and I'm mighty proud to have known them and saw them make courses in the Chicago area so beautiful. The old boys who were at Sunset Ridge, Glen Oak, Knollwood are gone but their successors continue to make America beautiful and the golfers happy and first rate.

Again my thanks to you all.

Herb Graffis

Vertical Mowing of Fairways for Improvement or Renovation

by Bruce R. Williams
Bob O'Link G.C.

Vertical mowing is a cultivation procedure involving the use of vertically oriented knives mounted on a rapidly rotating horizontal shaft. Vertical mowing may be done alone or in combination with a slit seeding program.

Thatch populations can be greatly reduced through vertical mowing and should be a standard practice when thatch accumulations reach a depth of .6 inch or greater. Thatch removal should be accomplished when (1) the turfgrass growth is vigorous, (2) atmospheric stress is minimal, and (3) a sufficient period of growing conditions exists for recovery of the turf. Avoid periods when weed invasion is likely i.e. during **Poa annua** seedhead formation. Soil and thatch should be dry when vertical mowing is practiced. This minimizes the disruption of the turf and facilitates cultivation of the soil from vertical mowing.

Now that I have mentioned the physical aspects of vertical mowing, I feel it is important to look at the subject of thatch which is the main target for vertical mowing. Dr. Shearman of the U. of Nebraska listed the disadvantages of thatch when found in excessive amounts greater than 1/2 inch.

1. increased turfgrass environmental stress
2. reduced turfgrass tolerance to heat, cold, and drought
3. increased disease incidence
4. increased insect activity
5. increased puffiness, scalping, footprinting, and spiking
6. increased proneness to localized dry spots
7. increased susceptibility to iron chlorosis
8. reduced activity of certain pesticides
9. increased phytotoxicity of certain pesticides

This list shows us that if thatch is a problem on your fairways, vertical mowing should be a part of your cultural program. For a number of years, the Superintendents used converted agricultural equipment to slice grooves in their fairways. In recent years equipment has been manufactured that vertically cuts the turf and can be set at the desired depth. The most widely used piece of equipment is the Rogers Aero-Blade. Several mower manufacturers now have vertical cutting units that are interchangeable with their gang reels.

The greatest problem with vertical mowing of fairways is the large amount of debris you must contend with when the dead vegetative matter is removed. If the amount of debris is slight, it can be mowed off or blown into the rough. If the amount of debris is considerable then the normal procedure would be to blow the material to the center of the fairway for manual pickup. Several sweepers or vacuums are available to help make the job easier.

With a summer like 1983, many Supts. were busy this fall renovating their fairways. While some used a broadcast seeding after aeration, many used a drill seeder in combination with a vertical mower. The use of Glyphosate with a slit seeding program is commonplace today. The main principle with slit seeding is that seed is placed in a groove. Less seed is used than with broadcasting while results are often comparable or superior.



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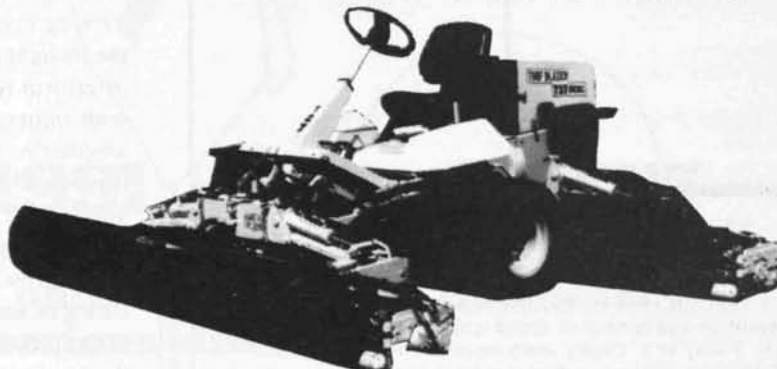
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Using Turfgrass Growth Retardants

by David J. Wehner, Ph.D.
U. of I.

Textbooks on turfgrass management define turf as a covering of mowed vegetation, usually a turfgrass, growing intimately with an upper soil stratum of intermingled roots and stems. The most important element of this definition is the fact that the turf is mowed. There are no other plants that can withstand repeated mowing at low heights of cut. Because we mow turf so often, mowing is easily the largest part of the maintenance budget and the thought of reducing the amount of mowing through the use of growth retardants is quite appealing. I want to present you with information that will help you make the decision as to whether or not you should be using a turfgrass growth retardant. I will address the questions of what growth retardants are, where they can be used, and how to use them.

Growth retardants are a subgroup of a class of chemicals called growth regulators. Growth regulators are naturally occurring or man-made substances that control the growth of plants. Many people use the term plant hormones interchangeably with the term growth regulators. Examples of growth regulators are gibberellins, auxins, and cytokinins. These three chemicals regular various aspects of plant growth such as seed germination, rooting, and cell division. The herbicide 2,4-D can influence plants in a similar manner as does indole acetic acid which is a naturally occurring auxin. Growth retardants, as the name implies, cause the growth of the turfgrass plant to be restricted and thus, reduce the need for mowing.

The main growth retardants that have been used on turfgrass stands are maleic hydrazide (MH) (sold as MH-30 or Maintain 3), chlorflurenol (sold as Maintain CF125) and mefluidide (sold as Embark). In addition, a mixture of maleic hydrazide and chlorflurenol was sold as Po-San by Mallinckrodt. Eli Lilly, Monsanto, and Imperial Chemical Industries are experimenting with growth retardants and may be releasing compounds in the next few years. Maleic hydrazide was the first retardant to gain commercial acceptance and has been joined and in many cases replaced by mefluidide. Research has shown that mefluidide is more effective than MH in retarding growth but that in some cases the appearance of the stand is more adversely affected. The experimental materials appear to be better than mefluidide and MH in both their effectiveness and in how they influence stand appearance.

An understanding of the nature of turfgrass growth will immediately allow one to decide if he has areas on which a turfgrass growth retardant can be used. A turfgrass stand is a dynamic community of plants in that there is continual death of existing tillers and replacement by new tillers. On a given plant, there is replacement of old leaves by new leaves, and growth of rhizomes, stolons, and roots. The overall health of the plant is a direct reflection of its ability to grow.

Recovery from diseases, insect damage, wear, and stress injury is dependent on growth. Right away, you can think of areas where a growth retardant can not be used. Athletic fields, putting greens, golf course fairways, home lawns, areas that receive foot traffic, and high visibility areas such as those in front of corporate headquarters should not be treated with growth retardants. Areas that could be treated with growth retardants include roadsides, embankments and areas difficult to mow, and

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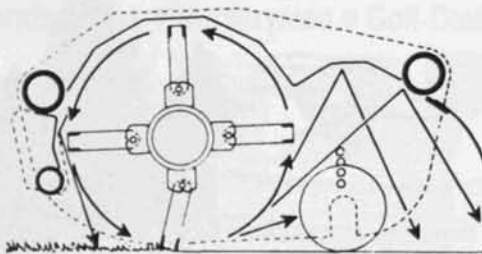
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(Growth Retardants Cont'd.)

low maintenance areas around industrial complexes. Both lists may change as new materials become available.

Two special uses of growth retardants are currently being investigated by researchers at several universities. This is the use of mefluidide to suppress seedhead production on annual bluegrass and application of growth retardants to help reduce plant water use. By preventing annual bluegrass from forming seedheads, additional food that would be normally used to produce seed is available for root growth. Research at Ohio State has shown that the root system of annual bluegrass declines sharply as seedheads are formed in early summer. Researchers in Nebraska and Texas have reported lower evapotranspiration rates for turf treated with growth retardants. This is related to the reduced growth rate and the concomitant decrease in the need for water.

Let's say that you have an area that might be suitable for treatment with growth retardants. There are some things to consider regarding their use. The first and foremost suggestion I have is that, after you have read the pesticide label, experiment by treating a small area so that you know what to expect. I could show many charts and tables from research projects across the country where the color, density, and quality of turfs treated with retardants has been evaluated but they would not convey the picture of what turf looks like after it has been treated with a growth retardant. Only in the case of areas that are extremely difficult or dangerous to mow, would I recommend using a retardant without first experimenting. The turf, quite simply, has a different appearance. If you have gotten along without growth retardants up to now, then there is no reason to rush into the use of these materials. A conservation approach is the best approach with retardants.

The remaining considerations will apply specifically to mefluidide since it is the main commercial product used to retard turfgrass growth. Mefluidide must be applied to green vegetation meaning that the first spray is made in early spring after the grass has started growing. The material should be applied with an accurately calibrated sprayer to avoid uneven appearance from either over and under application of material. If there are any weeds present, a broadleaf herbicide should be included in the tank mix. Mefluidide selectively inhibits the growth of the grass so that without the inclusion of a herbicide, you will end up with giant weeds. The treated area can be mowed one week after treatment to improve the uniformity of the stand. Mefluidide will retard the growth of the plants for four to eight weeks depending on the weather with less retardation during wet years. After the material wears off, there will be a post inhibition stimulation of grass growth which is a burst of growth followed by a resumption of the normal growth rate.

Researchers at the University of Maryland have applied mefluidide to a mixed Kentucky bluegrass-red fescue stand two times per year for four consecutive years. They reported a serious problem with crabgrass encroachment into the treated turf. They also reported that the turf had an unacceptable appearance during the summer months. The turfgrass stand did recuperate, however the year after the applications were discontinued. This would lead to the recommendation that the turf should not be treated continuously with a retardant but should be allowed to have periods of normal growth.

The use of mefluidide to suppress seedhead formation on an-

(cont'd. pg. 11)

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