THE BULL SHEET, official publication of the MIDWEST ASSOCIATION OF GOLF COURSE SUPERINTENDENTS.

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President's Message

As July passes and we begin the month of August we will soon know how well we have prepared for summer. It is now that skillful handling of chemicals, irrigation cycles, and people will keep our turf in top condition through these stress periods.

On the same note we as superintendents also have an opportunity to keep our skills and knowledge at a peak level. We can do this by attending the University of Illinois Turfgrass Field Day on Thursday, August 7th. I personally have attended the field day every year since 1978. I can attest to the fact that the U of I has made great strides in doing experimental research and in proving us with the back-up information needed to insure the continued success of our proven programs. I can also assure you that your attendance besides showing support for the U of I will also provide you with current information on disease and insect activity throughout the state, along with updates on research projects that have been in progress for several years. Your attendance also offers you the unique opportunity to discuss one on one any questions you might have with the top men in their respective fields. I hope to see many of you there.

On another note, I recently penned a letter to the GCSAA nominating committee; nominating Leonard Berg, CGCS as a candidate for the Board of Directors of GCSAA. As most of you well know Lenny is an outstanding individual. As past president of the MAGCS, as a GCSAA national committee member, as voting delegate for our association; to name only a few of his activities he served us well. It was indeed an honor for me as president to nominate Lenny. Now we as an association must show our support for him to insure that he receives a place on the ballot and to see that he is then elected a director at the national conference in Phoenix.

We are behind you all the way Lenny!

David R. Behrman

David R. Behrman, CGCS

Director's Column

Cup Changing

by Dennis Wilson
Sunset Ridge Country Club, Northbrook, IL

Most golf course superintendents treat cup changing as a foreign disease or punishment for a lazy crew member, but in fact cup changing can be an art.

After changing his own cups for 40 years, Dom Grotti, former superintendent of Sunset Ridge Country Club, handed me his hole cutter and said "This is the most important job on the golf course". At first I did not realize what he meant but now, after changing pins for 11 years, I know he was right.

In the short time it takes each morning to change cups and move markers, you can check every green and tee for signs of fungi, insects, fertilization level, thatch, moisture level, how your irrigation system is working, what kind of cut your mowers are giving you, and traffic control. Important? You bet if you're trying to maintain consistant greens.

I always carry a putter with me and putt around a new cup just to see the breaks or grain, if any. This too is very helpful in setting up the course for that special day.

Because of the demand of our jobs, I'm not able to change 18 cups a day so my assistant, Jerry Cooper, and I alternate 9 holes a day, six days a week. At first Jerry did not understand why he had to do such as "low-life" job, but after several years of changing cups he now knows this can be the most important job on the golf course.

Bryn Mawr and Evanston to Co-Host Northern ITF Golf Day

September 15th will be a fun filled golf day for ITF fund raisers. We are very fortunate to have Superintendents, Mike Nass and Carl Hopphan hosting their fine golf courses this year. This cooperative effort, of two courses in close proximity, will not only attract more golfers, but will make a popular event even more enjoyable as the field can be split to 80-100 golfers per course. As many of you already know, last year's event at Glen Oak Country Club attracted almost 170 people. Although we had a perfect day, it was six hour round of golf. This year's event has been designed to make the golf go more quickly with plenty of time to socialize at the end of the day.

Here is the run down of the day's event.

— Tickets can be purchased from ITF headquarters in advance for $75. This includes: lunch, golf, cart, 12:30 shotgun start and a special hors d'oeuvres party on the lawn at Evanston that evening.

— Prizes and raffles for golf clubs are part of the event, so bring along some cash for ITF research.

— This is the inaugural Dom Grotti trophy event for Superintendents and their Assistants; so get your handicaps registered for a partners best ball. A fine traveling trophy will go to the winner, donated by Sunset Ridge Country Club.

— Guests are welcome, but tickets must be ordered and paid in advance. Sorry, no refunds.

Reservations and billing can be handled through Russell Schneider, ITF Headquarters, Phone 644-0828.

How to Determine the Actual Products Being Applied in Your Fertilizer Program

by Tom Skinner
Par Ex Territory Manager

In determining a fertility program, there are as we know, many factors to consider. Some of which are: How much N.P.K. will be the most beneficial in our management program? What nutrient sources do we want to use? How long do we want the nutrients to be available? What ratio of N. to P. to K. do we want? Do we need minors? The list of decisions can go on and on. As we all know the fertility program is only a part of the overall management practices used in promoting quality turfgrass, however fertilizer used properly can enhance desired results and aid in the overall success of our programs. Everyone has their own criterion used to monitor the success of their fertility program. It may be turf color, density, growth rate, root depth, tolerance to stress, or the ability to recover after stress. All of these are good, but the criterion used can only be made by the turfgrass manager in their particular circumstance.

It becomes apparent that with all the decisions to be made, a thorough knowledge of the plant nutrients you are applying to the turf and what you can expect by them is most important. You must decide what nutrients you want to apply and then purchase product based on anticipated results, and cost according to what your budget provides. It is not uncommon to determine the cost of a fertilizer program based on the number of weeks the nutrients are available. Also the amounts of each nutrient is important. Example: Should a nitrogen source release over a period of twelve weeks, you could base the cost factor by taking the cost per acre and divide by 12 the number of weeks of feeding. This would determine a weekly cost per acre. In the case of a three week material divide the cost per acre by 3 to determine a weekly cost. The question then has to be, in a fertilizer analysis with a ratio of 20% slow release nitrogen that feeds for twelve weeks and 80% of the nitrogen that feeds for three weeks considered a three week or a twelve week material? The answer is that it is neither a three week or twelve week material. A product or a portion of a product has to be judged and cost accounted for by the results delivered to the individual. The reason this is mentioned is because with the literally hundreds of fertilizer analysis available, the purchaser must have the ability to look at a product breakdown and compute the percentages of the nutrients they will receive based on the label or the literature description. Purchases have been made based on cost with the intent of purchasing a slow release type material that in reality has a very low percentage of slow release.

In a future article I have been invited to discuss plant nutrients and their use in turfgrass management, in particular slow release nitrogens. In this article my objective is not to compare one source of plant food to another or to compare one product line to another or to suggest one particular analysis over another. My objective is to provide some information and math formulas that can be used to breakdown a fertilizer analysis. Product information is provided by all fertilizer companies on their analysis and can be found on the bags, on the specification sheets and on the literature. With this information we can determine exactly what's being applied to the turf areas. That coupled with knowledge of what to expect from each plant food will allow

the individual to take any product and equate a cost based on what they are receiving. In dealing with cost it is impossible to compare one fertilizer analysis to another based on cost per bag, cost per ton or cost per acre, without knowing the breakdown of the product you are using, or are planning to use. I will illustrate by using two Par Ex analysis for examples. I suggest looking at the products you presently use to determine if you're getting what you want and what you are paying for.

All fertilizer analyses are based on percentage per ton of the plant nutrients listed in the analysis. Example: Par Ex 24-4-12 is 24% of 2,000 lbs. actual nitrogen. 4% of 2,000 lbs. actual phos. and 12% of 2,000 lbs. actual potash. The same holds true for all nutrients listed in a fertilizer analysis. The analysis itself does not determine the cost of the material. The cost is determined by the products that make up the analysis. Example: Par Ex 24-4-12 the nitrogen percentage is 24%, however, the make-up of nitrogen is derived from three different sources. We are 1.6% ammoniacal, 10.8% W.I.N. from IBDU, and 11.6% urea W.S.N. This information is listed on the bag as well as our literature and specification sheets, as are all fertilizer companies. By totaling the three nitrogens that make up Par Ex 24-4-12 you see they total 24%. With this information you can now mathematically compute how much of each nitrogen source you are applying to your turfgrass. The first step is to find out how much total N.P.K. and other nutrients are contained per bag. The second step is the coverage per bag and the number of bags needed per acre to apply the amount of plant foods or total N. you desire. The math formula to determine N.P.K. plus other nutrients is to take the nutrient percentage x the weight of the bag, and divide the total by 100. Note: make sure you have proper bag weight as there are a number of different bag weights available. Step 1: Par Ex 24-4-12, 24% N. x 50 lb. bag = 1200 divided by 100 = **12** lbs. actual N. per bag. 4% P. x 50 = 200 divided by 100 = **2** lbs. actual P. per bag. 12% K. x 50 = 600 divided by 100 = **6** lbs. actual K. per bag. .7 MG x 50 = 35 divided by 100 = **.35** lbs. MG per bag. 5% S x 50 = 250 divided by 100 = **2.5** lbs. S per bag. .4% Fe x 50 = divided by 100 = **.2** lbs. Fe per bag. Step 2: Determine actual N. desired and multiply amount by 43.56 the number of 1,000 sq. ft. per acre, for instance .5 lb N. desired per M x 43.56 = 21.78 lbs. actual N. needed per acre. We know that there is 12 lbs. actual N. per bag 24-4-12, so to compute the number of bags needed per acre we would take the desired N. 21.78 lbs. divided by 12 the number lbs. N. per bag and find that we need 1.81 bags of 24-4-12 per acre to apply .5 lbs N. per 1,000 sq. ft. 1.815 bags per acre x 50 lb. bag = 90.75 lbs. material divided by number sq. ft. per acre 43.56 = 2.08 lbs. material per M. to apply .5 lbs. actual N. per M. The same math holds for all nutrients contained per bag. To deliver 1 lb. actual N. per M. the same math holds true. If we want 1 lb. actual N. per M. take 43.56 divided by 12 the number of lbs. actual N per bag to see that we need 3.63 bags per acre. Bags per acre 3.63 x 50 = 181 lbs. total material divided by 43.56 = 4.16 lbs. material per 1,000 sq. ft. to deliver 1 lb. actual N. The cost per acre is determined by the cost per bag x the number of bags being used. To this point we know how much actual N. is being applied as well as how much other nutrients are

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contained in each bag. A key point now is to breakdown the nitrogen sources and compute how much of each we are applying to the turf. A note before proceeding, any company can produce a 24-4-12 fertilizer analysis or a 32-3-8 etc., the key is to know your nutrient sources and percentages to determine if the products are equal to one another. The 24% nitrogen in Par Ex 24-4-12 again is made from three nitrogen sources. We are 1.6% ammonical 10.8% W.I.N. from IBDU and 11.6% urea WSN. In order to compute the amount of each being applied to the turf, we must see how much of each is contained per bag x the number of bags applied per acre. We will use as the example 1 lb. actual N. applied per acre. The math series is 1.6% ammonical x 50 weight of the bag = 80 divided by 100 = .8 lbs. ammonical per bag x 3.63 bags per acre for 1 lb. N. = **2.904** lbs. ammonical applied per acre when applying 1 lb. actual N. 10.8% W.I.N. from IBDU x 50 = 540 divided by 100 = 5.4 lbs. W.I.N. per bag x 3.63 = **19.602** lbs. W.I.N. per acre. 11.6% urea WSN x 50 = 580 divided by 100 = 5.8 lbs WSN per bag x 3.63 = **21.054** lbs. WSN applied per acre. Add the totals and you have 43.56 lbs. actual N. per acre.

To determine the long term release percentage of this product we would take the amount W.I.N. being applied, 19.602 lbs. divided by 43.56 total N. being applied to find that 45% of the nitrogen applied is W.I.N. long term release. When looking at a specification sheet or literature you can take the slow release or W.I.N. amount listed and divided by the total N.

percentage and determine the slow release or W.I.N. portion. Example: Par Ex 24-4-12 we show 10.8% W.I.N. divide 24% N. into 10.8% to arrive at total W.I.N. 10.8% divided by 24 = 45% W.I.N. To complete the math for total nutrients being applied we see that there is 7.26 lbs. P, 21.78 lbs. K., 1.27 lbs. MG, 9.07 lbs. S, and .726 lbs. Fe being applied per acre at 1 lb. N. These numbers are important when you are putting your program together, with them you can accurately compare what you are receiving from one product to another. The next analysis we will look at is Par Ex 32-3-8. The math series is the same as before. 32% N. x 50 (Par Ex 32-3-8 is packaged in a 50 lbs. bag) = 1600 divided by 100 = **16** lbs. total N. per bag. 43.56 divided by 16= 2.7225 bags per acre to apply 1 lb. N. 2.7225 x 50 = 136.125 lbs. material per acre divided by 43.56 = 3.125 lbs. material per 1,000 sq. ft. to deliver 1 lb. N. The nitrogen breakdown of 32-3-8 is 1.2% ammonical 3.6% W.I.N. from IBDU 6.1% CSRUN (coated slow release nitrogen) 21.1% urea WSN. Total N. sources = 32% N. To total nutrient sources being applied we again take the total of each product per bag x the number of bags being applied per acre. Math series 1.2% ammonical x 50 = 60 divided by 100 = .6 x 2.7225 = 1.63 lbs. ammonical per acre. 3.6% W.I.N. x 50= 180 divided by 100= 1.8 x 2.7225 = 4.90 lbs. W.I.N. per acre 6.1 CSRUN x 50= 305 divided by 100 = 3.05 x 2.7225 = 8.30 lbs. CSRUN per acre. 21.1% WSN x 50= 1055 divided by 100= 10.55 x 2.7225 = 28.72 lbs. WSN per acre. To determine long term release percentage we take the IBDU W.I.N. 4.90 lbs. per acre plus the CSRUN 8.30= 13.20 lbs. slow release being applied per acre. 13.20 divided by 43.56 = 30% of the nitrogen being applied is slow release, to complete the nutrients being applied we find there is 4.08 lbs. P., 10.89 lbs. K., and 9.52 lbs. S. per acre at 1 lb. actual N. The importance in looking at these two products is that Par Ex 24-4-12 is a higher cost than 32-3-8 when pricing the products on a per acre basis but to further compare the two we find that the slow release portion of 24-4-12 is all IBDU W.I.N. and the 32-3-8 combines IBDU and CSRUN to arrive at the slow release portion of the product. Also to look at the pounds of slow release being applied in the two analysis at 1 lb. N. we find that 24-4-12 applies 19.60 lbs. W.I.N. slow release and 32-3-8 applies 13.20 lbs. slow release N. per acre. To mathematically compute the percentage difference we take the difference and divide by the lower number. 19.60 — 13.20 = 6.4 lbs. difference (24-4-12 applies 6.4 lbs. more actual slow release N. than 32-3-8). 6.4 divided by 13.20 = 48% more slow release with 24-4-12. To look at the potash 10.89 lbs. with 32-3-8, 21.78 with 24-4-12, 21.78 — 10.89 = 10.90 lbs. more potash with 24-4-12 which is 100% more potash being applied.

In conclusion, it is not my intention to suggest one Par Ex product over another, or to suggest one product line over another. The importance is to have the knowledge to completely breakdown a product analysis to see number 1: If it fits your needs, and number 2: to accurately determine what's actually being applied with any product and what per portion of each material you are receiving.

Protect Apples From Maggot Damage Now

Growing apples in Chicagoland is a trying experience for a number of reasons. But, according to James A. Fizzell, University of Illinois Extension Horticulturist, Rolling Meadows, Illinois, apple maggot probably destroys more apples and causes more people to give up than any other single factor.

This is because apple maggot is a late summer pest and most people give up on their spraying just about the time the insect starts causing trouble.

The adult maggots are slow moving flies, slightly larger than house flies, and with black bands on their wings. They start to appear in late June and females may begin egg laying at that time. However, the peak period of egg laying is early to mid-August and will continue into September.

Eggs are laid in punctures in the skin of the apples. The punctured area ceases to grow, creating a dimple. Many such spots on the fruit cause the apple to look uneven or lumpy. Not all of the eggs hatch, but many do, and the maggot feeding inside the apple makes it unfit to eat. Many maggot-infested apples drop to the ground. Red varieties are particularly susceptible to damage.

For successful control, there are some practices that will reduce maggot injury. Picking up all of the dropped, infested fruit will reduce the number of emerging adult flies and, in turn, the egg laying. Spraying with an insecticide at regular 10 to 14 day intervals from late June until early September will greatly reduce the damage from apple maggots. Use an all-purpose fruit spray containing imidan, malathion plus methoxychlor, imidan 50W, or diazinon 50W. Sevin 50W will control the maggots but will often increase the mites on fruit trees.

Avoid using emulsifiable or liquid-concentrate insecticides. They often cause the apple skin to be rough. Follow the label directions for mixing and handling precautions for any insecticide you use.

Keep Those Annuals Looking Good

It's already mid-season for our gardens, but that doesn't mean the work stops. According to Cindy Garber, summer Horticulturist with the University of Illinois in Rolling Meadows, now is the time to rejuvenate over-grown annuals which have probably become spindly and growing out of bounds.

Start by shearing back overly long stems of petunias, verbena, coleus, pansy, bells of Ireland, wax begonia, alyssum and ageraturm.

New growth will begin at the base of each plant resulting in vigorous new compact plants and improved flowering.

For continued flowering it is important to remove spent blossoms on snapdragons, pansies, zinnias, cosmos, and tall marigolds. If you let these plants go to seed they stop blooming.

Removing old flowers from petunias, annual phlox, verbena, moss rose, and dianthus is tedious and does not seem to affect flowering.

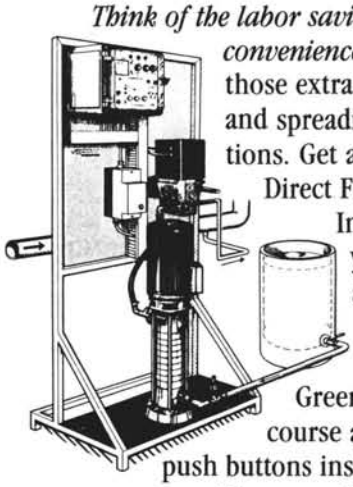
A good time to rejuvenate your flowers is just before you leave on vacation. When you return your plants should be well on their way to recovery.

If you plan to be away for an extended period, make arrangements for someone to water the plants should the dry weather continue.

Feed my entire course by push-button?

FERTILIZE

No kidding.



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