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A Patch of Green

Official Publication of the

Michigan & Border Cities Golf Course Superintendents Association

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CITIES GOLF COURSE
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4 DAY SPECIAL - CHEMICALS FOR TURFGRASS USAGE

Beginning at 1:30 P.M., January 17, and closing at 12 Noon, Friday, January 21, 1972, four days of intense lecture study, testing and discussion will be conducted on CHEMICALS FOR TURF USAGE.

This is sponsored by Midwest Regional Turf Foundation and Purdue University. All sessions will be held in the Memorial Center. Enrollment is limited, with a minimum of 30, and a maximum of 60. Applications will be accepted on a "first come" basis, subject to confirmation.

Cost will be \$50.00 - \$100.00 for the course (exact cost later) which will include printed material as available. Rooms and meals must be arranged with motels and other facilities on your own.

The purpose is to do indepth work with the current materials available for turf care. Fertilization, fumigation, fungicides, insecticides, herbicides, growth regulators - would be among those considered. Lecturers will be from the University and from industry.

2. 43rd International Turfgrass Conference and Show - Convention Center, Cincinnati, Ohio, February 13 thru 18, 1972

Schedule will be: lecture in the afternoon, lecture and discussion in the early evening, testing next morning, coffee break; then lecture late morning and repeated. Four tests - 1 for each major area. Those attending and passing the test will receive suitable certificate. Those not passing the test will not receive certificate, but would have their information and printed material. Attendance to all sessions is expected, and all tests must be taken.

This indepth, concentrated study is a supplement to the normal Turf Conference. The testing, the indivi-

dual and team study should challenge the best in every attendee. Let's get ready for the future in turf care! Write to: Dr. William H. Daniel, Department of Agronomy, Purdue University, Lafayette, Ind. 47907



THE PRESIDENT'S MESSAGE

From my family to all of yours - Joy and happiness to all of you during the holiday season. May next year be the greatest year in your life.

President,
Ted Woehrl

Editor's Note -

While we don't always remember to give credit where credit is due, we are most appreciative of our commercial friends and realize that without them, our chances of success would be minimal.

In our coverage of the Golf Day, we forgot to list two suppliers that donated gifts and prizes to our ticket raffle.

Gene Johaningsmeier and Doug Forier - We are sorry for the oversight.

Also, we listed Bill Madigan as Superintendent of Country Club of Detroit. He is Superintendent of Country Club of Jackson. Bill Milne is the Superintendent of the Country Club of Detroit.

ARTHUR HILLS

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REPORT OF THE GREEN COMMITTEE OF THE GOLF ASSOCIATION OF MICHIGAN

After a slow start because of the cold spring, the 1971 turfgrass season turned out to be a very good one for Michigan's golf courses. Winter damage was nominal, and was generally associated with poor drainage conditions. Severe dryness prevailed throughout most of the summer. This lack of rainfall enabled courses with adequate irrigation systems to maintain turfgrass moisture at optimum levels so as to minimize disease and maintain a sufficient root system for healthy turf. Furthermore, those who followed judicious irrigation practices, used just enough moisture to hold the bent and bluegrass but discourage the encroachment of *Poa annua*. Unirrigated turf, such as roughs, were severely impaired and did not begin to recover until fall when favorable moisture and temperature conditions again prevailed. These damaged areas may require additional weed control next year.

The problem of parasitic nematodes is continuing on some bent grass greens. General turfgrass symptoms include thin, chlorotic, restricted shoot growth which will not respond to nitrogen or iron fertilizations or fungicide applications. G.A.M. courses suspecting this problem should submit soil samples to the Nematode Diagnostic Laboratory, Department of Entomology, Michigan State University for confirmation. If high populations of parasitic nematodes are found, there are several nematicides available for control. Cutworm damage to greens was more prevalent in 1971. Commonly used insecticides proved to be useless but Diazinon was most effective. In spite of the Japanese beetle quarantine, Michigan golf courses are now under attack. It may become necessary to treat fairways and tees with chlordane or equivalent

to avoid losing large patches of valuable turfgrass. Those who have not already done so should consider some form of reforestation program in order to replace the many elms that have been lost throughout the state of Michigan.

No formal action has yet been taken on the use of fungicides containing mercury. The Environmental Protection Agency has just recommended to Congress that the use of mercury in fungicides be banned completely. At the present time, there are four known alternate materials for brown patch control, namely: (Daconil-2787), (2) Dyrene, (3) Acti-dione-thiram, and (4) Fore. The first effective systemic turfgrass fungicide (benomyl) became available in 1971. Since this material is taken in through the plant itself, it need only be applied every 4-6 weeks, whereas, older type materials required applications every 5-7 days.

The use of modern and more efficient equipment and materials may help to offset the rising cost of golf course labor. Substantial savings have resulted from the use of tri-plex type mowers on both greens and tees. Newly designed power and sand trap

Next Page

GOLF COURSE CHEMICALS

Donald Benham
NATIONAL CHEMSEARCH CORP.
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626 - 1111

rakes are also becoming available. Since improved irrigation equipment is also becoming available, many courses are planning to convert to fully automatic systems in order to provide improved control.

The Department of Crop and Soil Sciences, Michigan State University held a very well attended Field Day on September 9, 1971. Their next annual Michigan Turfgrass Conference is being held at Kellogg Center, East Lansing on January 19 and 20, 1972.

The Michigan and Border Cities Golf Course Superintendents' Association held their Sixth Annual Benefit Golf Outing at Bay Pointe Golf Club on September 17, 1971. The one-day charitable activity, limited this year to a single golf course, added another \$5,000 to the funds of the Michigan Turfgrass Foundation.

Our Green Committee is asking the Golf Association of Michigan's Board of Governors to participate in a joint venture with the Golf Course Superintendents' Association in order to pro-

mote a Michigan Golf Day, thus enlarging upon this worthwhile fund raising event, all for the benefit of The Michigan Turfgrass Foundation. Perhaps it should be noted that Ohio and Pennsylvania held their first similar events this year and Illinois is planning their first one for next year.

Our committee suffered the loss of a former colleague and member of this committee with the sudden death of Norman W. Kramer on June 3, 1971. He was the Green Superintendent of the Point O'Woods Golf and Country Club and was the immediate past President of the Golf Course Superintendents' Association of America. He had a tremendous impact on progressive development in his field. We shall miss this most capable associate.

Respectfully submitted,

ROBERT W. HANCOCK, Chairman

CHARLES G. CHAPMAN, Honorary
Chairman

Season's Greetings

To Our Friends,

The Holiday Season is the nicest time to send warmest greetings and to think of those whose good will and friendship mean so much.

It's a real pleasure to take this opportunity to show genuine appreciation for the pleasant relations of the past year.

In this spirit, the Season's Best Wishes are sent with the hope that a bright New Year will bring a full measure of Happiness, Good Health and Prosperity to you and yours.

Sincerely,

C. E. Anderson Company

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Dr. James B. Beard
William Buettner
William E. Holt, Jr.
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Ted Woehrl
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COMING EVENTS

1. 42nd Annual Michigan Turfgrass Conference - Kellogg Center, MSU January 18 & 19, 1972
2. 43rd International Turfgrass Conference and Show - Convention Center, Cincinnati, Ohio, February 13 thru 18, 1972
3. 54th PGA Championship - July 31 thru August 6, 1972, Oakland Hills Country Club, Birmingham Michigan
4. Pictures of Christmas party in next issue



A COMPANY ON THE MOVE

This has been a dynamic year for the W. F. Miller Company. It was just ten years ago on December 29th, that Harold Vogler purchased the company from William Miller. In January of 1964, the air-cooled engine parts division was added. Over these past ten years W. F. Miller has grown from its original store on Woodward Avenue in Birmingham to its present position of providing service over the lower half of Michigan.

With a rapidly growing turf division and the added air-cooled engine parts division it was apparent that more space was needed. In August, 1969, W. F. Miller Company purchased the Fernlee Warehouse which gave the Company 10,000 square feet to grow.

In 1971, the Company policy "We will give service" demanded more growth. At this time Harold Vogler purchased the Turf Division of Mid-

west Jacobsen Company in Lowell, Michigan.

New facilities were purchased at Grand Rapids to house our newly acquired territory. It was felt that by adding a new complete branch that offered a total sales and service, we would be able to offer the best for the Western section of the state.

With positive policies and management, W. F. Miller Company looks to a continuing upward increase throughout the next ten years.



Above: Grand Rapids Store
Left: Fernlee Warehouse

POTASSIUM "K"

by W. R. Thompson, Jr.

Southeastern Director Potash Institute of North America

Potassium "K" is one of the three major, or fertilizer, plant nutrient elements that are part of the 16 essential elements for plant growth and development. It is absorbed by the plant as the potassium ion "K".

Fertilizer potassium is added to soils in the form of such soluble salts as potassium chloride, potassium sulfate and potassium nitrate. These can be contained in complete mixed fertilizers, such as a 12-4-8 or used as straight fertilizer materials.

Potassium is mobile in the plant and is always found in the young, growing tissue. Potassium is essential for grass growth and while its exact role is not clearly understood, some of the functions that it is involved with are:

*Carbohydrate formation and translocation of starch

*Nitrogen metabolism and protein synthesis

*Activation of various enzymes

*Control of stomate activities and is active in water-plant activities

K-rich grass is more winter hardy

K-rich grass is less susceptible to disease attacks

K-rich grass can withstand hot weather better

K-rich grass can balance high nitrogen fertilization rates and produce fine turf

Many turf areas are low in "K" which means that "K" is often neglected in the fertilization program and the grass is not producing the quality turf that it could - it is not producing its potential.

In Pennsylvania more than 5,500 turf samples tested at Penn. State show that 84% of the greens and 65% of the lawns need more potash. How is the potash level in your soils?

Benchmark your potash levels (also tour pH, "P" and "Mg" levels), with a good soil test. Determine where you are and how you are doing in building and maintaining good "K" levels.

Turfgrasses must be fertilized to produce the quality playing conditions golfers and other athletes demand. Fertilizer will do more to build high quality turf and maintain quality turf than any other nutrition. Do NOT apply any one element out of balance with the others. This is easy to do by over applying nitrogen and neglecting phosphorus and potash. N/K balance is essential.

Researchers at North Carolina State University, recently reported on some of their research with fertility ratios and bermudagrass cold tolerance. They said that turf plants that were fertilized only with nitrogen were least resistant to low temperature damage. The addition of "P" and "K" improved cold tolerance.

Their research indicated that a balanced fertilization program with emphasis on adequate "K" in late summer would improve the cold resistance of Tifdwarf and Tifgreen bermudagrass.

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NEW PHILOSOPHY OF APPROACH TO TURF MANAGEMENT ON GOLF COURSES

by V. J. Zolman

Turf management on golf courses has progressed through several distinctly identifiable stages of developments. Each stage can be characterized according to the basic principles that constituted the dominating philosophy of the approach of the golf course superintendents in achieving their universal goal - a quality turf.

Stage 1 can be identified by the following relationship:

Potassium & Better Turf Cont.

Apply potash by using a complete mixed fertilizer that contains potash (potash is the third number on the bag). Potash can also be supplied through the use of potash fertilizer materials such as muriate of potash or potassium sulfate.

Potash should be applied at times when the plant can take it up and use it. To promote summer tolerance to heat and drought, apply potash in the spring - don't wait until hot weather to do it. To increase winter hardiness apply potash in early September, not in December when the grass is growing slow or is dormant. Potash can be applied anytime, but it is best to do it when the grass has time to take it up, use it and harden itself for stresses.

Nitrogen gives turf a deep green color and good growth. Phosphorus is essential for growth and especially in turf establishment. Potash is the quality nutrient. It helps grass withstand the stresses of disease attacks, stresses of winter and summer and winter kill.

Be wise - fertilizer with nitrogen, phosphorus and potash.

Reference: Gilbert W.B. and D.L. Davis, 1971 *Agronomy Journal* 63:591-593.

Rules = Quality Turf

The origins of this approach date back to the origins of golf - a game played on pasture fields. Initially, and even later as golf course gradually gained its own identity, the approach to golf course turf management evolved parallel to the evolution of the husbandry of pastures. The main emphasis in achieving satisfactory turf conditions was on following traditional rules concerning frequency and heights of grass cutting, soil aeration, etc. First natural, and then, increasingly, chemical fertilizers were applied mostly in a haphazard fashion, in accordance to rules that had very little or no relationship to the actual soil conditions and requirements of plant grasses.

This stage came gradually to an end as, with the increasing popularity of the sport, the demand for ever better playing condition increased, and the ability of superintendents to meet the demand decreased. Virgin soils that by its natural resiliency withstood the indiscriminate onslaught of chemical fertilizers became unbalanced and depleted by monoculture plant grasses and the golf course turf became increasingly susceptible to diseases, fungi, and weeds invasion. These developments set the stage for the inception of Stage 2.

Stage 2 has been characterized by the belief in the success of the following relationship:

Formulas + Chemicals = Quality Turf

It is the approach most prevalent today. To combat problems encountered increasingly in golf course turf management, the superintendents turned to rigid chemical formulas established for all factors believed to

Continued on Page 11

Bob Kirkpatrick
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CITY _____ STATE _____ ZIP _____

Or you may contact the next golf course supplier that calls on
you and give him the information needed for application.

Management Approach Cont.

influence the conditions of turf. These were applied to soil structure (1/3 peat, 1/3 soil, 1/3 sand), fertilizers (10-10-10 or 12-3-8), pesticides and herbicides.

To the extent that the development of this trend was based on scientific research, combined with conventional soil-testing techniques, the approach has produced good results. In an increasing number of instances, however, problems gradually reappear. Despite systematic application of "proven" formulas of fertilizers and pesticides, attacks of fungi and weeds are becoming more prevalent.

Scientific evidence is coming to light, identifying the problems. For example, in a paper by researcher F. Nicholson of the University of Illinois at the Eleventh Illinois Turfgrass Conference held last December in Urbana, Illinois, presented evidence that favorable results obtained through application of certain pesticides are only temporary and ultimately self-defeating: Plots of turf, after six years of systematic application of a particular pesticide, were more diseased than plots that were not treated. It appears that in this instance, as well as in others, the resulting contamination of soil proved harmful to turf grass, causing it to lose its natural resistance to diseases. Moreover, as was pointed out by Dr. Couch at the same conference, it appears that the laws of "natural selection" apply to grass diseases and fungi just as they do to other organisms: Under the systematic application of pesticides, they probably developed new, more aggressive and immune strains that defy conventional treatment.

Finally, what may be the "closing chapter" of the Stage 2 of turf management, is being written by lawmakers in form of laws banning, for health reasons to American people, the use of effective pesticides compounds of arsenic and mercury and DDT. Such bans will make it even more difficult to deal with increasing

problems encountered in efforts to contain the disease.

Thus, on one hand, the increasing amount of scientific evidence uncovering the shortcomings of the conventional approach, and on the other hand, the increasing dissatisfaction of turf managers with the results obtained through such an approach, are gradually ushering a dawn of a new era in turf husbandry in the United States - the Stage 3.

Stage 3. The major distinct characteristic of this stage is the emphasis on proper natural soil environment of the turf. In short,

Balanced Soil Environment = Quality Turf

The approach is based on scientific principles and natural laws, stressing structure and physical properties of soil, and chemical interaction of elements as a basis of proper metabolism and diseases resistance of turf grasses. (1)

In this context, the focus is not only on balanced soil environment in respect to basic elements such as nitrogen, phosphorus, calcium, potash, elements whose role in a healthy soil environment has long been recognized and identified through conventional soil testing programs. In addition to these, the approach embraces a broad array of chemical elements - the trace elements such as iron manganese, copper, zinc, boron and molybdenum - that for many years have been recognized in scientific experiments as essential for proper functioning and interaction of elements in grass metabolism. Through the development of more conclusive scientific evidence concerning their significance in proper soil environment on one hand, and on the other hand, through the development of better, more sophisticated soil-testing techniques that permit their identification, the approach focuses upon balancing of these elements as means of achieving a healthy soil environment that is conducive to the production of quality turf.

Identification and proper balancing

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Management Approach Cont.

of these elements within the framework of scientifically designed soil testing programs is proving to be an effective means of dealing not only with the turf problems arising from soil contamination due to indiscriminate application of commercial chemical fertilizers, pesticides and herbicides, but also with problems arising from sources less commonly recognized but nevertheless of an ever-increasing importance in our changing environment - water and air pollution. (2)

Trace minerals are catalists, stimulators and inhibitors of biochemical processes as well as sources for production of enzymes. In proper combination, the same trace elements demonstrate systemic ability and protect turf grasses plant tissue against invasion of virus, bacteria and attacks of fungi on chemical and physiological bases. Chemical balance of soil, completed by trace minerals, leads automatically to biological balance of microflora (bacteria, fungi, antinomycetes and their strains) and includes small fraction of micro-organism that produces antibiotics. When properly balanced, these elements interact with major and secondary elements, and stimulate and regulate all nutritional system and metabolic processes within plant grasses; when in deficiency, excess or toxicity, they disrupt these processes.

When trace minerals are properly balanced and fit into total chemically balanced soil they can produce almost "miraculous" results in increasing fertility of soil, health and self resistance of turf grasses, eliminating the need for most pesticides.

Balanced Soil Environment approach to turf management is fast gaining broad acceptance not only among turf scientists, but also among enlightened, practicing golf course superintendents. And for good reasons. In many instances the expenses for pesticides and fertilizer have been cut by 30-70 percent, while the quality of turf has been increased spectacularly.

Season's Greetings

from

Frank & Doug Forier

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Given these results, the new philosophy is gaining new followers among golf course superintendents.

(1) Several scientific papers presented at the Fifth Annual Golf Turf Symposium held in Milwaukee on December 9-10, 1970 strongly reflected the emergence of this new trend. They stressed quantitative evaluating factors: storehouse of nutrients in the soil (Dr. Love), structure and physical properties of soils (Dr. White), chemical interaction (Dr. Reike), soil testing (Dr. Horn), and effect of Pesticides (DDT, chemical compounds of Arsenic and Mercury (Dr. Newman).

(2) See my articles, "Pollution - Main Problem on Golf Courses," The Bull Sheet, March 1970; "The Problem of Contaminated Water," Turf-Grass Times, April 1968; "Atomic Turf Maintenance," The Golf Superintendent, March 1967.

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or dry, with a high degree of consistency which is very important to the players, as most traps done by hand are soft in one spot, hard in another. This makes for difficult shots and unhappy members. The TRAPMASTER will eliminate these problems because with its constant use, it will soon have all your traps with depth and texture consistency.

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