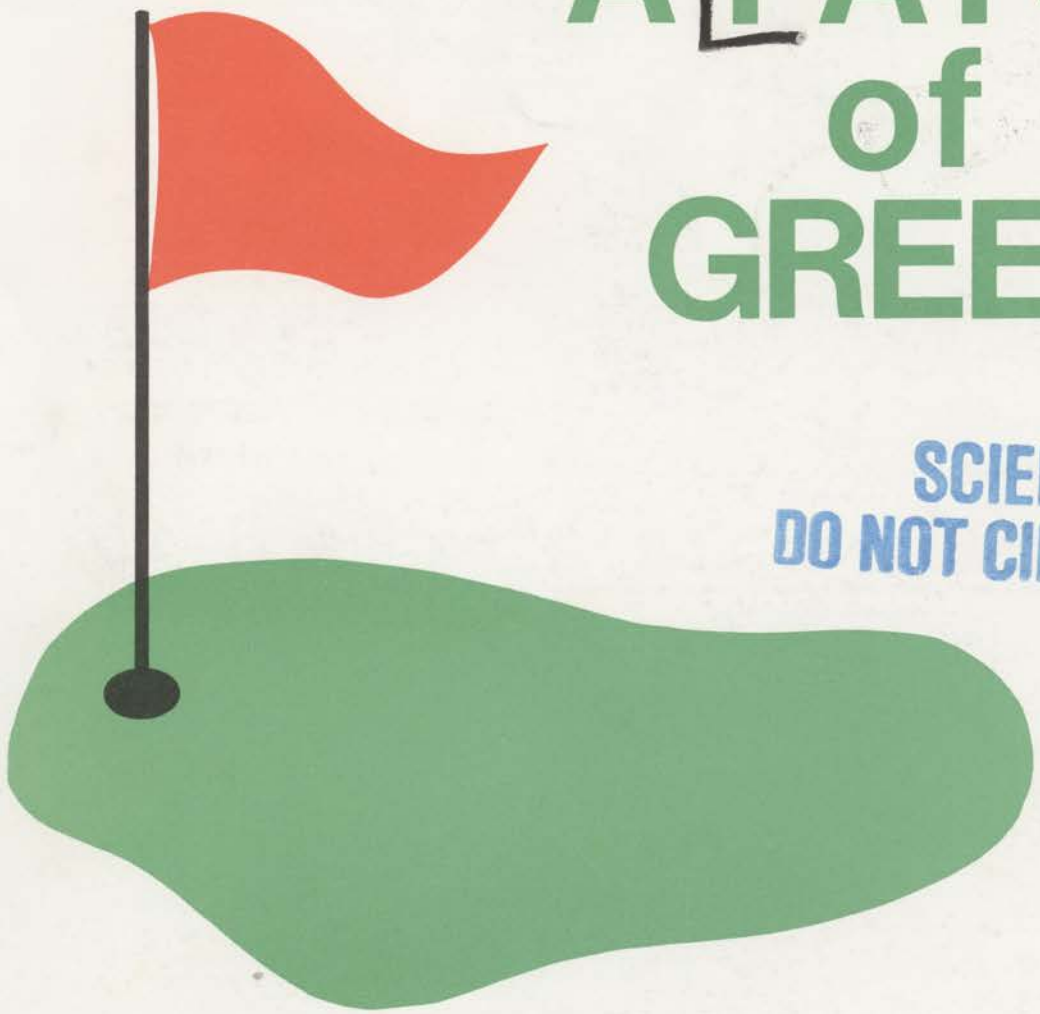
January/February 1991

r 66th Year

A PATCH of GREEN



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THE EDUCATION COMMITTEE

With the help of Steve Kolongowski and myself, an Education Committee was formed this year. The members of this committee are: Doug Boyle, Ed Hock, Mark Jackson, Doug Johanningsmeier, Marty Miller and Tom Stark.

The purposes of this Committee are:

I. To build a strong Education Program for the purpose of keeping the membership informed, updated and involved in our association.

II. To set goals for each year for our meeting sites.

III. To select topics that concern our association for the purpose of educating our membership.

Some of the concerns of this membership are: lack of membership participation in our meetings; lack of attendance at each meeting site; the topics being addressed for each meeting.

The goals of this Committee are:

I. To get membership attendance and involvement by selecting strong topics for each meeting.

II. To select topics and members to address topics at certain meetings.

III. To allow the membership to get involved in selecting topics for each year — by a survey, a suggestion letter.

The committee met on December 15, 1990 and has selected topics for each meeting. The sites are lined up for the up-coming year. We will publish a list of the topics and sites in the **Patch of Green.**

I hope that the topics we chose will be of interest to our membership. We are always looking for more participation in our program. Please feel free to contact any of the committee members with suggestions for topics and meeting sites.

The Education Committee looks forward to a very informative year and more involvement from our association. We believe that the topics we have chosen will be of great benefit to our membership.

We look forward to seeing your face at each meeting.

Education Co-Chairperson
Michael E. Bay

"A PATCH OF GREEN"

Published Bi-Monthly by the
MICHIGAN AND BORDER CITIES GOLF COURSE SUPERINTENDENTS ASSOCIATION

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MARTY MILLER
MBCGCSA SURVEY

TED WOEHRLE
PATCH OF GREEN EDITOR

MTF PRESIDENT, FRITZ McMULLEN, discussed MTF news and the coming Turf Conference.

Meeting host RICK MURPHY (far right) talks with (L to R) ED HOCK, TOM STARK and JON SHREVE.

MARTY MILLER, KENTWOOD COUNTRY CLUB, discussed his survey results.

GCSAA DIRECTOR (and VICE-PRESIDENTIAL CANDIDATE) BILL ROBERTS talked about the environmental issues.

MEETING UPDATE

The first meeting of the 1991 MBCGCSA season was held January 14 at Bay Pointe Golf Club. Our host, Rick Murphy, and Bay Pointe provided a very nice continental breakfast at 8:30 a.m. for all AA, A and B members. The early meeting for these members was to discuss the results of a survey done by Marty Miller concerning Golf Superintendents in the MBCGCSA.

Approximately 120 surveys were sent out and 55 responses were received. The questions on the survey dealt with types of golf courses, budgets, employee and Superintendent's salaries and benefits. The associates would like to thank Marty for all the work and time he spent putting this together. Also, in order to achieve a better idea of where we stand in the industry, a larger participation by our members in answering surveys in the future would give us more accurate information.

Lunch was served at 12:00 and the meeting of all members started at 1:30. The President, Tom Mason, introduced all of the officers and members of the Board of Directors. Bill Roberts was put in charge of environmental issues and Marty Miller was placed in charge of surveys.

Tom informed the members that the hospitality room at the Riviera in Las Vegas would be open on Friday from 1:00-5:00 and 8:00-11:00, closing three hours for the Opening Ceremonies. Saturday, Sunday, and Monday's hours were 5:00-11:00.

The National elections were discussed and Tom Mason was appointed to represent the MBCGCSA and to give our full support to Bill Roberts for Vice-President. Tom was also going to investigate the proposed By-law change and vote in the best interest of the association.

The February 25th Meeting will be held at Links of Pinewood with guest speaker Rena Pomaville from Envirotherm. Rena will discuss chemical safety and at the end of the session she will show us how to properly fit our respirators. Please bring your respirator for this part of the program. The March Meeting will be held at Salt River and will be our annual bowling/meeting.

The Educational Committee's goals this year are to: 1) have quality representatives from our industry as guest speakers and 2) seek a more active involvement from the membership. We feel that there are many members within the MBCGCSA with years of experience and knowledge who through their participation would help increase all of our knowledge and ultimately improve our profession.

Ed Hock and Doug Johanningsmeier,
Educational Committee Members

ASSOCIATION NEWS

MICHIGAN AND BORDER CITIES
Golf Course Superintendents Association
1991 MEETING AND SEMINAR SCHEDULE

Date	Location	Topic/Speaker, Meeting Notes
2/23	Dearborn C.C.	Gam Leadership (553-4200)
3/11	Salt River	Bowling/Social
3/23	Detroit C.C.	Gam Seminar
4/29	Grosse Ile	Round Table with Canadian Members
5/17	Links of Pinewood	Special Olympics
6/17	Lakelands	Hiring Help(& Firing?)
8/12	Barton Hills	Waste Disposal
9/?	Bay Pointe	Budgeting
10/7	Meadowbrook, Pine Lake, Forest Lake & C.C. Detroit	Golf Day
10/27	Maple Lane	Annual Meeting

COMING EVENTS

USGA REGIONAL SEMINAR
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Saginaw Country Club
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We would like to acknowledge the following as new members to our association:

Sam Van Dusen
Randy Rogers
Robert Volland
Gary Bartsch
Timothy Dark
John Nowakowski
William Hull III
Matthew Ashton
Keith Hietanen
James Keller
Randy Caniff
Alex Greenacre
Doug Berzack
Doug Francis
Earl Cummins
Scott Schellpfeffer
Robert Milosch
Glen Miller
Dennis Nordling
Michael Guiffre
David Pawluk
Gregory Seago
George Beck
Gary Johnson
William MacInnis
Donald Elliot, Jr.
Rena Pomaville
Dwight Peirson
Bruce Jacobs

Hope to see all of you at future meetings and events!!

EDITOR'S NOTE

The articles appearing in **A PATCH OF GREEN** do not necessarily reflect the views or opinions of the editors. We present articles for their informative value and it is up to each reader to evaluate the material presented.

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ORGANIC AMENDMENTS TO SOILS

by
Dr. Michael J. Hurdzan, ASGCA
Kidwell and Hurdzan, Inc.
Golf Course Architects

Soil organic matter is roughly defined as those soil constituents which are carbon based, are of plant or animal origin, and are in various stages of decomposition. One of the major contributors to the organic proportion of the soil is plant root systems, which are continually producing new roots and sloughing off old ones. The amount of organic matter in the soil normally varies between 0% to 20%, with 5% most commonly found in mineral soils, and soils with over 15% generally classified as organic soils. The most desirable range depends on the use of that soil, and in cultivated soil there is a continual fluctuation in the percentage of organic matter; as well as a slight seasonal variation.

THE IMPORTANCE OF THE SOIL ORGANIC FRACTION

If organic matter only makes up a relatively small percentage, why should we be concerned about this particular constituent? The reason is that organic matter contributes to or influences the following critical soil properties:

1. Tilth
2. Cation exchange capacity
3. Moisture retention
4. pH
5. Porosity
6. Resiliency
7. Aggregation
8. Soil color and temperature
9. Plant nutrition
10. Population levels of beneficial soil organisms

So, while the soil organic fraction may be small, **it is vitally important and requires sophisticated and sensitve management.**

PROPER MANAGEMENT OF ORGANIC MATTER

Proper management of organic matter begins with a clear understanding of what it is and how it works; particularly the **decomposition** process. The decomposition cycle usually starts quickly and proceeds rapidly until the decomposing organic matter has lost its original identity as a plant or animal part, and is simply called **humus**. Then, it slows down to a bacterial process called **mineralization**, during which the little carbon that is left is digested, leaving only minerals or very complex carbon structures.

The rate of humus decomposition and mineralization is strongly influenced by:

1. Temperature
2. Soil pH
3. Moisture
4. Soil organisms
5. Essential elements
6. Available nitrogen

Although many of these factors can be **influenced** by the golf course superintendent, a far more prudent management approach is to **control** the **types** of organic matter applied to the soil.

BASIC TYPES OF ORGANIC MATTER

In general, organic matter can be classified as **slow** decomposers and **fast** decomposers. Usually, fast decomposers are thought of as organic fertilizers such as sewage sludge, bone meal, and blood meal. These materials avoid organic matter accumulation, are good for stimulating plant growth, reduce disease potential over slower decomposition types, and have little residual effect. These materials are best used for topdressing or safe stimulation of plant growth.

Slow decomposers are best used for adding organic matter to a planting medium such as during greens construction. These materials are more stable and predictable in their rate of decomposition and provide longer-term effects. Further, as these slow or humus-type materials continued to degrade, they will release many trace elements which are vital for optimal plant growth. Several factors determine whether a particular form of organic matter will be a fast or slow decomposer, but the two most important are: 1) the content of lignin, hemicellulose and cellulose, and 2) the carbon to nitrogen ratio of the organic material.

The amount of lignin, hemicellulose, and cellulose are important in determining the decomposition rate because they are complex forms of carbon requiring complex decomposition processes. Generally, vascular and support tissues are hign in lignin, hemicellulose and cellulose, which is why the veins of a leaf remain long after the inter-veinal tissues are gone.

The carbon to nitrogen ratio (C:N) is important in determining decomposition rate because the nitrogen serves as an energy source for the organisms doing the decomposition. Therefore, organic matter with a ratio that is wide (100:1), will decompose more slowly than organic matter with a C:N that is narrower (20:1); at least until the point where mineralization begins on the most stable of organic

CONTINUED PAGE 23

ORGANIC ADDITIVES AND THE ROLES THEY PLAY

Turfgrass areas, especially new golf courses, are located on sites with many varied soil conditions. The terrain maybe be hilly, flat, swampy and the soil gravelly, sandy, heavy clay or peat. In some cases, there may even be little or no soil.

Organic matter will increase the water holding capacity of sandy soils and improve the air-water relationships of heavy clay types of soil. Examples of organic matter for turfgrass areas are: peat, sawdust, rice hulls, gin trash, bagasse, sewage sludge, manures and compost. Leaves, grass clippings, straw and other similar materials may be used in the compost. Local availability is frequently the determining factor in the choice of an organic amendment. However, choice should always be based on an understanding of the characteristics and behavior of the material.

Organic additives may be classified on basis of rate of decomposition as dynamic and static forms. Static types like peat, sawdust and some types of hulls, require a much longer time to decompose than the dynamic types like manure, spent mushroom soil and compost. Sawdust and peat are two of the more widely used organic additives for turfgrass soils. Both are satisfactory materials when used in accordance with their known properties.

SAWDUST

Among others, Burton and Associates at Tifton, Georgia and Waddington and Associates at Massachusetts have shown the value and limitations of sawdust. The desirability of using material that has undergone partial decomposition is generally recognized. Sawdust from hardwoods decomposes more rapidly than that of softwoods, thus nitrogen tie-up and, therefore, need for supplemental nitrogen, is greater than hardwood sawdust.

Waddington reported germination and seedling growth were suppressed by some fresh sawdust materials. Ash and red oak sawdust produced the more severe toxic effects. Abnormal seedlings and stunted roots occurred when extracts from these were used. Nitrogen added to the mix did not overcome these deleterious effects. Merion bluegrass was more susceptible than Pennlawn fescue, Highland and Seaside bentgrasses. These adverse effects are not apparent in sawdust weathered for two to seven months. When fresh sawdust must be used, Waddington suggests mixing with soil, potting, seeding and comparing germination with seed planted along.

PEAT

Peat is probably the most widely available of all organic materials. It is an easily obtainable, usually uniform source of stable organic matter. Frequently there is confusion with regards to peat terminology and classification. Problems associated with peat use may be avoided if the characteristics of the various kinds of peat are known.

Peat is the remains of plants that have accumulated and undergone partial incomplete decomposition in water or excessively wet areas such as swamps and bogs. Among the more important differences in physical and chemical properties are botanical composition, water-holding capacity, stage of decomposition, organic matter content, nitrogen content and chemical reaction (pH). Peat is brown, reddish brown or black, depending on its state of decomposition and moisture. It may be fibrous or non-fibrous, depending on its botanical composition and its state of decomposition. Criteria for purchasing peat are generally available and should be taken into account when they are purchased.

SEDIMENTARY PEAT

Sedimentary peat accumulates on the bottom of the comparatively deep water zones of the swamp or bog. These peats are derived from algae, plankton, water lillies and various other pond weeds. Tissue from these plants decomposed rather completely. This, along with the type of decay, produces a highly colloidal, almost black, rubber-like peat. Because it accumulates on the lake bottom, this material often contains large quantities of mineral matter such as marl, silt and clay. Such material has very poor physical properties and is undesirable as a soil conditioner. Musser points out that this material is sometimes used in golf course construction with disastrous results.

MOSS PEAT

Moss peat is formed principally from sphagnum, hypnum and other mosses. It is sometimes called "peat moss". It is derived mostly from sphagnum and is light tan to brown in color, lightweight, porous, high in moisture-holding capacity and highly acidic. Hypnum moss peat is darker brown and its physical properties are similar to reed-sedge peat. When incorporated into soil and lime is added, moss peat will decompose at a moderate rate.

SPHAGNUM MOSS

Sphagnum moss or "top moss" is the yound residue or live portion of the plant and should not be confused with the partially decomposed moss peat. Top moss is marketed for packing, for use as a mulch and for starting cuttings rather than for soil improvement.

REED SEDGE PEAT

Reed sedge peat is formed principally from reeds, sedges, cattails and similar plants. Commercial lots of this peat differ in their degree of decomposition, acidity and organic matter content. Partially decomposed lots are reddish brown to brown and are somewhat fibrous. Those in a more advanced stage of decomposition are darker in color. They are intermediate in their moisture-holding capacity and nitrogen content. They usually contain moisture and mix readily with sand or soil.

PEAT HUMUS

Peat humus is peat that is at an advanced stage of decomposition and one of the plant remains are identifiable. This compares to the cultivated peat classification used by Musser. It is dark brown to black, low in moisture-holding capacity and has a medium to high nitrogen content. Peat humus has a high lignin content and is more resistant to further breakdown than moss or reed sedge peats.

Other peat-like soils that are high in organic matter and are offered for sale in a general category, are placed in the **ORGANIC SOIL** category by Lucas, et al. They include sedimentary peat, "black-dirt", (muck) soil, topsoil and black humus. The authors caution against the use of such materials for soil improvement unless they have been tested for and have acceptable levels of acidity and mineral content. Much has undergone extensive decomposition and in comparison with peat, is low in organic matter.

ADDITIONAL CHARACTERISTICS

Peats with a pH below 5.0 are called "low lime"; above 5.0, "high lime". Many local peat deposits are often quite hign in acid content, and may be high in salt if the bog is located in marshy seacoast areas. Before these peats are used on turfgrass, they should be tested.

Reed sedge and peat humus deposits may sometimes contain weed seed. The surface layers of such deposits, especially if they have been under cultivation, may be heavily infested. Care should be exercised to avoid bringing in such materials to a sports field or golf course. Subsoil peat and moss peat are usually free of weed seed.

From **Thru The Green, of Northern California,** Sept, 1990

Article by Dr. Jim Watson,
Vice President/Agronomist
for the Toro Company.
The feature was originally prepared for the
Midwest Regional Turf Conference
at Purdue University

Evaluating Organic Amendments For Sand-Based Turf Systems

by Charles R. Dixon

Natural turfgrass surfaces are experiencing a comeback in several sports applications, including soccer, football, baseball, and thoroughbred horse racing. The success or failure of this movement will depend upon proper construction and maintenance of the turfgrass system.

The main type of turfgrass system leading the comeback is the sand-based rootzone. The golf industry has been one important source of sand-based technology. The United States Golf Association (USGA) method of constructing putting greens has been adapted to provide a high-performance surface for a wide variety of sports. With proper management and good construction materials, a USGA turfgrass system delivers a well drained, quality surface that is healthy and suitable for many types of sports activities.

Turfgrass systems that are not healthy can be a financial burden to the owner and/or a threat to the local environment. Because of the demands placed on high performance sports turf surfaces, a sound agronomic approach should be employed during construction that takes into consideration geographic location and available materials. Facilities constructed with the wrong technological approach or with poor quality materials can be a serious problem for the participants of the sport as well as the owners.

Lab evaluations concerning the selection of construction materials and the testing of materials during construction need to be performed by qualified individuals to make sure that the facility is installed correctly. For sand-based systems, the evaluations should include the sand, as well as all amendments.

Sometimes the initial cost of the materials, regardless of the quality, is the criterion used by decision makers to evaluate and select rootzone components. With such a limited selection process, serious technical mistakes can be made that impair the establishment of the turf system and result in poor quality turfgrass that is expensive to maintain. Inferior materials, selected by untrained individuals with an economic bias, may leave a problem that can plague superintendents and groundskeepers for many years. A full-scope evaluation of all materials will lower the risk of poor performance or total failure.

The USGA system consists of a gravel drainage field with a one-foot layer of a sand-based rootzone on top. In the early years, the rootzone consisted of sand, loamy soil, and an organic amendment such as peat. The use of soil in the rootzone has declined due to the compaction and restricted drainage that have been associated with the silt and clay in the soil.

Components of Four Amendments As Received

Component	Reed-Sedge	Can. Sphagnum	Rice Hull Comp.	Fir Bark
Moisture	41.6	31.3	41.0	42.9
Carbon	53.4	66.4	46.3	49.6
Nitrogen	2.3	1.0	0.7	0.4
Mineral	2.7	1.3	12.0	7.2

Dry Weight Values For Amendments

Amendment ID	Total Carbon %	C:N Ratio	Moisture %	pH
Dakota Reed-Sedge	90.1	23	41.6	6.6
Canadian Sphagnum	96.7	65	31.3	4.3
Rice Hull Compost	78.5	74	41	5.9
Fir Bark	86.7	142	42.8	3.2

The rootzone specifications used most often today include sand and an organic component. The sand contributes to the physical support of the surface and, more importantly, to the drainage characteristics of the rootzone. However, it has very little to offer the turfgrass system, especially during establishment. The interaction of the organic amendment with the sand contributes to the utilization and retention of fertilizer and water.

The main advantages of sand-based systems are the ability to move water through the rootzone profile to keep the surface dry during the high rainfall and to allow adequate movement of air into the rootzone. The ultimate success of the turf surface in a sand-based rootzone depends on vigorous rooting. Deep-rooted turf will provide a more stable and durable surface. Good aeration and drainage are necessary to maintain a deep root system.

A valuable reference on specifications for selecting materials is the USGA publication **Turf Management for Golf Courses** by Dr. James B. Beard. The criteria for selecting sand and gravel components are fairly cut and dried. However, those for the organic amendment are not. They should receive more attention.

Most organic amendments used today are commercially available peat mosses or composts of various materials. The main criterion that has been utilized to evaluate organics is the total carbon or ash content.

The ash content represents the amount of minerals and silt/clay particles in the sample. The remaining portion of the sample is the carbon content. The recommended total ash content should be 15 percent or less. The carbon should be 85 percent or greater. The purpose of the low ash requirement is to keep the introduction of silt and clay to a minimum.

Other requirements for the organic amendment pertain to its texture and state of decomposition. The amendment should be finely ground to achieve maximum surface area and coverage of the sand grains. The texture and complexity of the organic component also affect the microbial population of the soil, an important factor in decomposition. Complex organics contain chemical compounds that are resistant to degradation by soil microbes.

The state of decomposition of the amendment is very important. Soil microbes require oxygen and nutrients to break down undecomposed organic amendments. Plants also require oxygen and nutrients to grow. An undecomposed organic amendment can place a demand on the available oxygen and nutrients in the rootzone that can slow the establishment of the turf system or cause it to fail altogether.

There are several ways to assess the state of decomposition. The easiest and most direct is the carbon-to-nitrogen ratio. Laboratories calculate this ratio for total carbon and total nitrogen (dry weight basis). The percentage of carbon in the sample is then divided by the percentage of nitrogen.

Carbon to nitrogen (C:N) ratios greater than 30:1 are believed to promote the immobilization (tie-up) of nitrogen. Ratios higher than this may result in an insufficient amount of available nitrogen in the rootzone. Ratios less than 20:1 promote the mineralization (release) of nitrogen. Low C:N ratios may lead to salt burn or to leaching of nitrogen before the turfgrass plant can utilize it.

The amount of nitrogen tied up is roughly equal to the amount released when the C:N ratio is between 30:1 and 20:1. Ideally, the ratio for rootzones should fall within the 15:1 to 30:1 range.

Although competition between the establishing turf and the microbial population for nitrogen can stunt turf, so can competition for oxygen. Many chemical and biological reactions occurring in the rootzone require oxygen. When oxygen is depleted faster than it can enter and diffuse into the rootzone mix, these reactions change. When this occurs, obstructions to water and air movement can develop within the mix, and toxic gases are produced. Both can lead to a poor turf stand and higher maintenance costs.

Humus is a desirable component of any soil system. The more humus present, the better the nutrient retention and cation exchange capacity of the mix. Nutrients such as ammonium, calcium, sodium, and magnesium bind to humus instead of leaching through the rootzone. The carbon to nitrogen ration of humus is also a favorable 15:1. The humus content of the organic component is an important indication

CONTINUED NEXT PAGE

of its value in the mix.

The moisture content of organic amendments is another consideration. Dry organic materials may not rewet to their original moisture content. In general, the moisture content of an amendment should not drop below 30 percent. This level should also be consistent within the material prior to mixing with the sand. Steps should be taken to maintain moisture content prior to mixing with sand.

For the purpose of comparing various organic amendments for sand-based turf systems, four commonly used products were evaluated for their suitability. They are a reed-sedge peat from North Dakota, a Canadian sphagnum peat, a rice-hull compost, and a fir bark product from California. All four are frequently submitted to soil labs for evaluation.

The two tests usually performed for this purpose are total carbon and pH. In this case, tests were also performed for C:N ratio and humic acid content.

The moisture content of all four amendments was adequate, ranging between 31 percent for Canadian sphagnum to 43 percent for the fir bark.

The nitrogen content of the reed-sedge peat was more than twice that of Canadian sphagnum and three times that of rice hull compost. The mineral content of the rice hull compost and the fir bark is high but only a small amount is nitrogen.

The two main components supplied by organic amendments are carbon and water. The nitrogen and

Nutrient Reactivity

Organic Amendment	Humic Acid %	Fulvic Acid %	CEC meq/100 grams
Dakota Reed-Sedge	21.1	12.0	118.0
Canadian Sphagnum	8.3	8.6	74.8
Rice Hull Compost	5.8	6.9	16.5
Fir Bark	3.1	5.8	18.3

Physical Data For The Amendments In a Mix

Organic Amendment Mix	Infiltration Rate in/hr	40 cm Water Holding %	Bulk Density g/cc
Gillibrand Sand 100%	108.9	4.3	1.6
90% Sand:10% Redge-Sedge	19.9	17.1	1.5
80% Sand:20% Sphagnum	65.1	13.1	1.3
80% Sand:20% Rice Hulls	101.0	14.9	1.4
80% Sand:20% Fir Bark	71.9	12.2	1.4

mineral content are indicators of the organic material's nutrient value. The nitrogen content, when compared to the carbon content, also shows how well decomposed the organic fraction is.

Reed sedge peat had the only carbon-to-nitrogen ratio (23:1, dry weight basis) that would not tie up nitrogen. It was the most decomposed, and also had the highest cation exchange capacity and humic acid content. Canadian sphagnum ranked second in these areas.

Based on the test data, the Dakota sedge peat has several attributes that make it appealing as an amendment for high-performance rootzones.

The most significant test is for the characteristics of sand mixes containing these amendments. The infiltration rate of the sand, supplied by P.W. Gillibrand Co., is very high without an amendment, while the water-holding capacity is very low.

The interaction of an organic amendment with the sand component will vary slightly from one sand to another. All amendments enhanced the mix physically to some degree. All the mixes met the USGA criteria for water holding and decreased bulk density. Based on the C:N ratio and total carbon content, the rice hull compost does not fit USGA criteria. The fir bark product contains a better total carbon content but has a high C:N ratio.

The lowest infiltration rate, still almost 20 inches per hour, was for ten percent reed sedge peat and 90 percent sand. It is interesting to note that this mix had a better infiltration rate and water holding capacity at a ten percent volume than the other amendments at a 20 percent volume.

There have been some problems associated with mixes that have high infiltration rates and are made of materials with wide C:N ratios. The combination of nitrogen/air competition, low nutrient retention, and high infiltration rates can make the turf grow-in period a prolonged and difficult process. Even though the grow-in may appear to be going well, the cost of nitrogen and fungicide inputs is usually high. Some of the rice hull mixes observed in the field never achieved full grow-in, even with high nitrogen rates.

Based on the data collected on the four organic amendments, the Dakota reed sedge peat meets all the technical criteria necessary for construction of a high-sand rootzone. The Canadian sphagnum would be the next best amendment.

There are significant differences among organic amendments mixed with sand in high-performance turf systems. By testing amendments prior to construction and following specifications such as the USGA's, a turf system will establish quickly and perform well for years under reasonable maintenance levels.

From **Golf & Sports TURF**

GCSAA NEWS

Remember Safety When Handling Pesticides— From Beginning To End

By Teri L. Linder
GCSAA Communications Specialist

Increased public awareness of the environment has meant new and complex responsibilities for today's professional golf course superintendent — and federal, state and local governments have stepped up their scrutiny of rules and regulations controlling pesticide usage. During its first year of publication, **Briefing** has addressed many of these laws and their impact on maintenance practices. Always paramount in this coverage, however, has been the recognition that the health and safety of golf courses should remain primary concerns for every superintendent.

In addressing those concerns, and in looking back over the first year of **Briefing**, here are some basic thoughts to keep in mind when handling pesticides:

When using pesticides as a part of your overall maintenance program, remember that safety and regulatory compliance go hand-in-hand. Make sure that everyone invovled in your operation is aware of the safety considerations of each task he or she performs. Integrate these considerations into your hazard communications training program.

Scrutinize the packaging of pesticides you purchase and properly document each delivery. Look for water-soluble packaging, which means fewer containers for disposal. Consider higher-percent active ingredients materials and mini-bulk containers to reduce the amount of material needed and the number of times it is handled. When you receive pesticides from your distributor, make sure that an up-to-date material safety data sheet (MSDS) is provided for each product. Some superintendents now specify on their purchase orders that delivery will be refused unless the product is accompanied by an MSDS.

ALWAYS read the label. Pesticide labels contain vital information that educated you and your employees on handling, application and disposal of the product. NEVER allow a product to remain in your facility without a label — if a box or carton must be split up, be sure to re-label any container that will store excess product.

Store your pesticides safely. The Environmental Protection Agency has proposed new rules governing the storage of hazardous substances, including turf chemicals. These rules include requirements that pesticides be stored in a building that is securely locked, has an impervious floor, is properly ventilated and is in compliance with local fire codes. As a ground-water protection measure, make sure that all drains located within storage facilities can be quickly and easily plugged in the event of a spill or fire. Remember to separate turf chemicals by type (insecticide, herbicide, fungicide, etc.) to prevent accidental misuse or contamination. Make sure that you check often for any signs of container corrosion or leaks. Finally, post the telephone numbers of your local fire department, state environmental agency and spill resonse team in a conspicuous place within your storage facility and make sure your employees are trained in proper spill procedures.

Exercise extreme caution when mixing and loading turf chemicals. Federal and state regulations require, at a minimum, that either a certified applicator handle or apply restricted-use pesticides or that a certified applicator directly supervise a non-certified worker. GCSAA strongly recommends that only properly trained pesticide applicators be allowed to handle and apply pesticides. Certified applicators, because of the education they receive, are knowledgeable about label requirements and are trained to safeguard against pesticide misuse, accidents and injuries. NEVER mix turf chemicals near a well and make sure that any drains in proximity to the mixing or loading area are in proper working order and flow into a catch basin. Personnel involved in the mixing and loading operation should be properly clothed and equipped with appropriate safety gear.

NEVER dispose of pesticide waste down a drain, sink or sewer, or into a well, lake, pond or lagoon. Protection of groundwater and surface water is a primary concern in using pesticides. When possible, recycle pesticide wastes. If possible, field-apply diluted pesticide rinsate to reduce stored hazardous waste. Properly dispose of unusable products right away — don't procrastinate. Triple-rinse or pressure-rinse containers as soon as they are empty. Do not reuse a pesticide container unless it is specifically designed for that purpose.

Basic concepts in pesticide safety are often easy to forget. It's even easier to take for granted that all of your employees have the same knowledge base as you. A primer such as this is an excellent tool to use with both new employees and experienced workers who need a quick "refresher" to bring home key points. Take a few moments to review these simple reminders with your staff — it can help ensure the safety of your employees, your golfers, your community and your environment.

Reprinted from **Briefing**, a GCSAA publication

USGA GREEN SECTION ANNOUNCES ADDITION OF TWO TO STAFF

FAR HILLS, N.J. — The United States Golf Association Green Section has appointed Kimberly Erusha to the position of manager, technical communications, and Nancy Saldon as environmental specialist.

The appointment of Mrs. Erusha allows Green Section to better provide the most current information available concerning turfgrass science and golf course management programs to its 15 regional agronomists and the more than 7,100 USGA member clubs and courses.

The selection of Mrs. Saldon comes at a critical time for golf and the environment. The USGA announced earlier this year it would allocate $5.4 million in research grants over the next three years to evaluate the impact of golf courses on the environment.

Mrs. Erusha and Mrs. Saldon will be based at the USGA's headquarters in Far Hills, New Jersey.

"Golf course construction and maintenance practices, and their effects on the environment, increasingly draw the attention of regulatory agencies, environmental groups, and the public," said Jim Snow, national director of the USGA Green Section. "The addition of an enviromental specialist and a technical communications specialist to its staff will put the Green Section in a much better position to address golf's environmental challenges in the 1990's."

A native of Walford, Iowa, Mrs. Erusha was graduated from Iowa State University, where she earned a bachelor of science degree in horticulture. She completed her M.S. and Ph.D. degrees in the Department of Horticulture at the University of Nebraska.

She served previously as extension associate in the Turfgrass Integrated Pest Management program at the University of Nebraska, where she was responsible for coordinating the pest surveillance program, and for preparing training programs, publications, audio-visual materials, and other educational materials and programs. She has a number of research and extension publications to her credit, and she was responsible for the production of a videotape concerning the control of thatch on home lawns.

Mrs. Saldon will be responsible for coordinating the USGA's environmental education activities. She will work in close cooperation with the New York Audubon Society in expanding its Audubon Cooperative Sanctuary for Golf Courses program. She will also visit golf courses, write articles for newsletters and other publications, and participate in turf and golf-related meetings and seminars.

She was employed previously as supervisor of the Environmental Department in The Chester Partnership, a consulting firm in Laurence Harbor, New Jersey, where she provided clients with environmental and landscape architecture services, including environmental impact statements, wetland delineation reports, wetland mitigation plans, and landscape design plans.

"By developing education programs and encouraging the golf community to participate in conservation practices," says Snow, "we hope to mitigate potential pollution problems, enhance the beneficial impacts of golf courses on the environment, and educate the public about these benefits."

DEADLINE FOR LEGACY AWARDS

THE LEGACY AWARDS application deadline is **April 1, 1991** and interested GCSAA members may contact the Office of Scholarship at 913-841-2240 to get a copy of the application or to find out more information. The Legacy Awards were created to give college scholarships to academically talented children and grandchildren of GCSAA members. The awards are based on academic ability, community and extracurricular involvement and an essay. Awards amounts can range up to $5,000, depending on financial need.

greentips

Facts from The Golf Course Superintendents Association of America, Office of Government Relations

The Facts About Golf And The Environment

As someone involved with the game of golf, you may already be aware that golf courses are being criticized for "damaging the environment." The use of turf chemicals, the impact on water and soil quality, and the amount of irrigation water are cited most often as public concerns about the golf industry.

Although most authorities agree that the maintenance of golf courses has comparatively little negative impact on the environment, we at the Golf Course Superintendents Association of America believe that these issues must be addressed. And, through a comprehensive effort combining research, education and communications, GCSAA is leading the golf community's efforts to minimize the potential for ecological harm resulting from course maintenance.

However, the biggest problem we have is public perception — or, more accurately, public misperception — about the environmental impact of courses. These inaccuracies, if left uncorrected, could pose a serious threat to the vitality and integrity of the game.

You can help GCSAA change perceptions about our industry by reviewing the following Overview and sharing this information with elected officials, decision-makers and others with whom you have contact. Please do not hesitate to pass this information to others who share our belief that golf is good for the environment.

OVERVIEW

1. Research has shown that golf courses do not contribute significantly to groundwater contamination. Several university and government studies (in Massachusetts, New York and Florida) indicate that, when properly applied, pesticides and fertilizers used on todays golf course do not leach into groundwater

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The Ohio Turfgrass Conference and Show completed its successful stay at the Cincinnati Convention-Exposition Center with an attendance of 4,000 and 300 exhibitors filling 500 booths. By all measures the Conference and Show was a success retaining its status as the #1 regional turf conference and show in the country.

The conference portion of the show was a complete success with 80 different subjects, a dozen workshops and two evening sessions.

An important announcement at the conference was Dr. Sporleder's summation of the Ohio Turfgrass Survey that was sponsored by the Ohio Turfgrass Foundation. He announced the business to be a 1.16 billion dollar industry in Ohio which is an amount equal to 44% of the total agricultural expenditures in the state of Ohio. The survey will be available in printed form in March.

The 1991 Ohio Turfgrass Conference and Show will be held again in Cincinnati.

USING PERENNIALS IN YOUR DISPLAY BEDS

The trend of instant show in plantings is taking on a new angle. Using annuals along the front border, and filling in with perennials, gives the blend designers need for a solid show all summer. The problems of replacement, added labor, and reinvesting more added cost each spring, is starting to wear thin. Consequently, the use of perennials is being rekindled.

The beauty and endurance of perennials has been appreciated as far back as early China, Japan, and England, for a mass display of rich texture, vivid hue, and lasting impact year after year. Designers and ground keepers are well pleased with this classic form of gardening, and the improved image they are creating.

Perennials are a hardy lot. Few have problems with insects and disease. Perennials for the most part are a low maintenance plant. Once established they soon become a joy to work with. It is important to note, as with any living entity, there are a few rules to follow. Patience and mulching the first year are a must. This should render you 3 to 5 years of vivacious color for your efforts.

Naturalizing projects can be left for several years. Naturalizing projects are wonderful for low damp sections and for steep hills which are hard to keep up. One should chose an experienced grower, with a good eye for design. They can walk you through most any problems, and be there down the line, should you move your plantings. Be sure plants you buy are hardy for your zone. Do not buy single-eyed divisions as they take around 2 years to establish (you get what you pay for). Perennials can be the frosting on your design and a plus to your budget.

Mary Englerth Herrema
Grower and Perennial Designer

in any significant amounts.

2. Modern turfgrass management practices (such as the use of slow-release nitrogen formulations) can greatly reduce the potential for nitrogen leaching or run-off into water supplies. The organic (thatch) layer in healthy turfgrass also significantly reduces the potential for nutrient "movement."

3. An 18-hole golf course averages 140 acres. Pesticides and fertilizers are used only on portions of the golf course. The majority of the property often consists of natural areas that are not maintained with chemicals. These unmaintained areas are usually a home for wildlife, a diverse variety of native plants and large stands of trees.

4. Golf course superintendents are among the best--educated and most judicious users of chemical management tools. Today, most superintendents have university degrees in agronomy, horticulture or a related field. More than 3,500 superintendents also pursued continuing professional education through GCSAA last year. Although most golf courses do not apply "restricted-use" pesticides, virtually all courses with GCSAA members have at least one staff person who is state-certified in the safe handling and use of these chemicals.

5. Because turf chemicals are often expensive, golf course superintendents have an economic incentive not to apply them. What's more, many superintendents entered the profession because of a love of nature and the outdoors and are strongly committed to conservation. In a recent survey, superintendents said they give extremely high priority to selecting maintenance practices that do not have a negative impact on the environment.

6. Golf courses do not contribute to the "yard waste" problems at America's landfills. Grass clippings and leaves are virtually always composted in unmaintained areas of the course. In some cases, the compost is recycled for use as a natural soil amendment.

7. The water used on golf courses is an excellent investment in both economic and environmental terms. Irrigated golf courses generate billions of tourist and property tax dollars for state economies. (America's golf courses are also bringing an increasing number of international tourists to the United State, thus helping to counter the foreign trade imbalance.)

When effectively irrigated, healthy turf provides numerous environmental benefits. Properly maintained turfgrass:

- Produces oxygen (carbon dioxide exchange)
- Removes pollutants from the air
- Cools the atmosphere (acts as a heat-sink)
- absorbs sound and glare
- prevents erosion

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Pruning Deciduous Trees

by
Nancy Pierce
Turf Researcher, University of Guelph

Pruning is a horticultural practice that is as old as the history of cilvilized man. Ancient Babylonian, Egyptian, Greek, Roman and Chinese cilivlizations developed their own unique pruning styles - ranging from the Greek and Roman art of trimming plants into unnatural, ornamental shapes (called topiary) to the Japanese art form of bonsai. Their pruining skills and creativity helped to capture and preserve the very essence of each civilization's culture.

Despite its antiquity, or perhaps because of its mysterious and facinating history, the purpose and proper procedures of pruning are not well understood. Today, pruning is done for more practical and economical reasons. Trees, shrubs and vines are pruned to eliminate dead and diseased tissue, control and direct growth, promote structural strength and to increase the yield of flowers and fruits on crop bearing plants. A woody plant will not require pruning unless it fits into one of these groups. Once you've decided which group a particular plants belongs to the "whens" and "hows" of pruning are simple.

A Little Plant Biology

Understanding the nature of plants and how they will respond to different treatments is the key to pruning with confidence. In the sketch the basic parts of a deciduous tree are shown. The trunk is the main stem of the tree. The leader (or central branch) is a continuation of the trunk. Scaffold (or main) branches are those which are joined to the trunk. Lateral branches arise from scaffold branches. Spurs are short, compact twigs found on fruit trees on which flowers and fruit are produced. These five branches form the structure of a deciduous woody tree. The structure of a deciduous tree is much more apparent in its leafless state.

Buds are a critical component of pruning. A terminal bud is always found at the tip of a stem or branch and its direction of growth is upwards or outwards. Lateral buds are found along the length of stems and branches in a distinct pattern. Lateral buds develop into either leaves or branches depending on the size of the plant. Some lateral buds do not break when the others do. These are called latent buds and they're often found on the lower portion of a branch. They are much smaller than other lateral buds and won't break unless the wood above them is damaged or removed. Flower buds appear on spurs and can be either in a lateral or terminal position. Adventitious buds are found in unusual locations on a stem or branch (i.e. they don't follow the regular pattern produced by the lateral buds) and their formation is often the result of some injury. Severe cutting will stimulate adventitious buds to break forming "suckers" and "water sprouts".

When to Prune

The time of year is important in determining how the plant will respond to pruning. The traditional time for pruning is late winter or eary spring when the buds are still dormant and the temperature is not too cold. Pruning done during this time will elicit the most vigorous response in most species. Although most deciduous trees can be safely pruned anytime during the period between leaf fall and spring growth, pruning should not be attempted if the temperature drops below 20 degrees F (-7 C) since the dieback may result. Some deciduous trees (like birch and maples) should be pruned in late winter as they tend to "bleed" profusely in the spring. Evergreens will be set back the least if they are pruned just before spring growth occurs.

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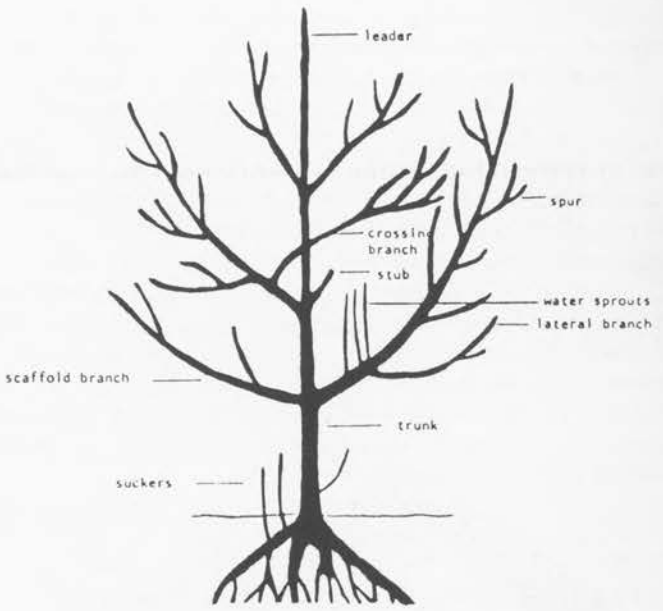


Pruning after spring growth has occurred will have a general dwarfing effect on the plant. This type of pruning is required when a plant has outgrown its alloted space — indicating that perhaps a more suitable plant could have been chosen for that area. Summer pruning usually encourages the plant to produce new growth to replace only that which has been removed. Pruning too late in the summer can be dangerous as the new growth seldom has time to harden before frost arrives.

Some trees that bloom on year-old wood must be pruned after spring bloom if a maximum yield of flowers is important. Removing year-old wood bearing flower buds in the spring will naturally result in a very disappointing bloom.

Response of Plant Parts

Usually, the growth resulting from pruning trees properly is very easy to predict. Removing a segment of stem or branch that bears a terminal bud will stimulate one or more lateral buds on that branch to develop when spring arrives. The end result of removing a terminal bud is a denser, bushier plant.

Removing lateral branches will encourage growth at the terminal end of the mother branch or stem. The end result will be a taller, more open tree.

Pruning Young Trees

The earlier you can start to shape and train the growth of a tree, the less attention it will need in later years when large branches increase the difficulty of pruning and large wounds increase the chance of infection. Ideally, a young tree should be pruned the same day it's transplanted (normally done in the spring). During the transplanting operation, root injury is likely to occur leaving less roots to support the same amount of above ground tissue. Resist the temptation to preserve every branch — pruning about ⅓ of the top growth away will result in a tree that will quickly outgrow one that has not been pruned.

If you have a good idea of the future use of the tree, deciding where to trim off the excess third is easy. First, start with weak or broken branches and any branches that will eventually criss-cross. Never remove the leader as this will result in a stunted squatty tree not true to type. Any branches that angle up too closely to the trunk should also be removed. As the tree grows, sharp angled branches will produce a weak crotch which will probably split sometime during the life of the tree. Generally, the wider the angle, the more sound the structure. Cut any branches you want to keep back if they are longer than the leader. This may have to be repeated for the first few years until the natural shape of the tree is established.

Once this "necessary" cutting is done, you can start pruning to train the tree to meet its intended purpose. Take a good look at it and identify the leader, scaffold and lateral branches. If you want an airy tree with a lot of open space, remove or shorten most of the lateral branches and leave the scaffold branches with their terminal buds intact. You've

retained the length of the main branches while directing their growth outward.

To produce a denser, more compact tree, cut all lateral and scaffold branches back to half their length. Removing the terminal bud in this manner will result in the cut branches becoming stronger and the tree will develop into a more compact shape.

For a tree with sufficient clearance to walk or drive a golf cart under, remove all branches that join the trunk at a height of about 7 feet or lower. This cannot be done until the tree is a little older and will still have 3 or 4 scaffold branches remaining after the lower branches are removed.

Pruning Mature Trees

Pruning mature trees is a difficult, potentially dangerous and time-consuming job. If at all possible, prune trees when they are young to avoid the problems encountered when working on large trees. However, many golf courses have trees on them that are older than the course itself. While most are probably just fine, some may have been lopsided, too dense, diseased or damaged over the years. Before attempting to correct these problems remember that large trees form strong architectural lines and it's well worth the investment in time to stand back and think before cutting branches off in a haphazard manner. Try to retain the natural shape of the tree. The finest comment a person can get after reducing the size or density of a tree is when others fail to notice it has been pruned.

Making the Cut

All that has been mentioned up to now is where and when to make cuts. The following deals with how to make the cuts.

1) Cutting Back to a Bud

It is usually desirable to cut back to an "outside" facing bud as this will form new branches that will grow away from the trunk or mother branch rather than growing inwards and crowding existing branches. If the tree has a large vacant space that needs filling, then you may wish to cut to an inward facing bud. Some deciduous trees like maples and ashes, have their buds arranged opposite one another on the branch. In this situation, it's recommended the cut be made just above one of the double buds, with the slant point outward (the desired direction of growth). Then cut or rub off the inside bud. Always use a slanting cut about ¼ inch above the desired bud. The top of the slant should be pointing in the direction of the desired new growth. If you leave more than ¼ inch above the bud, the stub above the bud will die creating an entryway for decay organisms and insects.

2) Removing Branches

The most important rule when removing entire branches is not to injure the inner bark of the stem or mother branch. This inner bark or cambium forms a scarlike, healing tissue called a callus that gradually grows over the exposed wood. A small wound is often completely healed by the end of the growing season. Controversy arises among experts as to whether or not these larger wounds should be dressed or painted, and if so, what kind of material to use. The most common type of dressings used are asphalt based tree wound paints available under various trade names.

There is also some controversy as to where a branch should be cut off. Some maintain a cut made flush with the mother branch or trunk is desirable. Most people though suggest that a slanting cut should be made close to but beyond the branch collar. If the Branch collar is not visable, cut slightly beyond an imaginary line that would join the upper and lower points of the branch attachment. Branches pruned in this manner leave a smaller wound to heal than if the branch were cut flush to the truck and there is less chance of injury to the cambium. Do not leave a large stub however, as it will rot and be susceptible to diseases which can spread throughout the tree. Pruning large brances may injure the tree if not properly, since the weight of a branch may cause it to break before the cut is complete, tearing away large pieces of bark with it or even splitting the tree. To prevent this, a 3-cut method is used. The first cut is 6-12 inches away from the trunk or mother branch, beginning at the bottom and cutting upwards about ⅓ of the way through. A second, downward cut is made about 1 inch above the first cut until the limb breaks off. The stub is then removed.

Credit **Greensmaster**

- filters natural and synthetic contaminants from rainfall and irrigation
- recharges critical groundwater supplies
- provides crucial greenspace in urban settings.

Beyond these benefits, computerized irrigation systems and improved turfgrass varieties now allow courses to use less water more efficiently to achieve the same level of conditioning. Continuing research will provide even more "low-water" turfgrass varieties in the future.

8. In addition to turf-related benefits, courses provide other important ecological and community assets. Golf courses are:

- key sanctuaries for birds and other wildlife
- disposal and treatment sites for wastewater (effluent)
- attrative and environmentally sound "covers" for closed landfills and other ecologically damaged locations
- sites for non-golf recreational activities, such as jogging, walking, birdwatching, cross-country skiing and fishing
- businesses that provide hundreds of thousands of skilled and semi-skilled jobs
- places for social interaction and community events
- civic benefactors that fund major contributions to charities
- the keystone of a multi-billion dollar industry nationwide
- community improvements that add value to land, thus increasing local tax bases.

9. On golf's behalf, GCSAA has developed a strong and cooperative relationship with the U.S. Environmental Protection Agency and other major regulatory groups. Through governmental affairs, professional education and public information, the association strives to make environmental responsibility a basic precept for its members.

10. GCSAA and the entire golf community are firmly committed to seeking answers through research. The United States Golf Association, in partnership with GCSAA, is funding a three-year $3 million research program that will provide a number of those answers.

Unlike most industries, golf has the motivation, the resources and the willingness to address the issues now, before environmental questions seriously impede the growth of the game. By pursuing this enlightened path, it is hoped that golf will be increasingly perceived as a model environmental industry of the 1990's.

Golf Course Superintendents Association of America, 1421 Research Park Drive, Lawrence, Kansas, 66049-3859, Telephone 800/472-7878 or 913/841-2240.

matter, humus, which has a C:N ratio of 10:1.

Since we tend to group all sources of organic matter together into a term called "peat moss," it might do well to distinguish between the various kinds of organic matter. Listed in order of their speed of decomposition are the following most common.

SLOWEST TO FASTEST

1. Humus
2. Peat humus
3. Reed sedge peat
4. Hypnum moss peat
5. Sphagnum moss peat
6. Green leaves
7. Seaweed

(Green sawdust and straw have very high C:N ratios and poor organic matter qualities, and are thus poor construction materials unless lots of supplemental nitrogen is applied.)

To review briefly,

1. Organic matter contributes much to plant growth mediums.
2. Organic materials require intelligent management.
3. The ideal range for plant growth is between 5% and 15%.
4. There are various types and sources of organic materials that can be practically classified as fast and slow decomposers.
5. Important factors that determine decomposition rate for various organic matter are their cellulose, hemicellulose and lignin content and their C:N ratios.
6. The decomposition process is most active with a C:N ratio around 20:1 and mineralization begins at 10:1.
7. Fast decomposers are best for topdressing and fertilizers, and slow decomposers are best for green construction and planting media.

You should not use the same organic material source for topdressing a green as building it; that would create excessive thatch and would also tie up available nitrogen. You build greens with stable organic material sources, and you topdress with quickly decomposing organic sources; there is no material that can do both.

Just as the ancient practice of sand topdressing is making a comeback as a cultural management technique, so is the use of seaweed materials for fertilizing and as a supplement to pure sand in topdressings. The reason is that seaweed has very little lignin, and a relatively narrow C:N ratio and, therefore, it breaks down quickly, releasing its stored nutrients. Also, seaweed is rich in micro-nutrients found in few other places than in the sea. This is evident by the fact our seashores are not clogged with rotting seaweed, and farmers for centuries have used seaweed as fertilizer. In addition, with one product in particular, Panasea, the seaweed is processed in a unique manner to preserve a growth regulator, cytokinin. This hormone has shown in early research to stimulate seed germination, promote stronger and healthier roots, and delay aging in many plants when subjected to environmental summer stresses. The distributor also claims that the micro-nutrients are chelated with a natural sugar, Mannitol, and thus are more readily available.

Another form of seaweed that I use in greens construction is a dry form called Sand-Aid. This material has most of the micro-nutrients needed for predictable turfgrass establishment and management, but breaks down quickly to the mineralization stage so as not to complicate routine maintenance. I recommend about thirty to forty pounds per one thousand square feet, lightly tilled into the green mix before seeding, as a supplement to the 15%-20% of slow decomposing organic matter added to give the sand other properties. As the greens mature, the superintendent can either spray on a micro-nutrient supplement, or add micro-nutrients through Sand-Aid as a topdressing.

Soil orgainc matter management — which can often spell the difference between success and failure — is often overlooked in turfgrass maintenance. As one old famous superintendent said, "I don't know much, but I do have a good sense of humus" — perhaps that is why he is famous.

AN INDUSTRY FIRST

RedMax Forerunner In Both Innovation and Training:

IDEAL attends first product/sales training

John Botsford, Jr., Sales Manager for Ideal Mower Sales, Inc. and Matthew Botsford, Commercial Turf Consultant, attended a first of its kind, two-day training session August 20 and 21, 1990 at RedMax headquarters, a division of Komatsu Zenoah, in Atlanta, Georgia, manufacturers for consumer and commercial needs. RedMax technology integrates the future into its products such as the reciprocator and auto start back pack blowers, along with its full range of line trimmers, brush cutters, hedge trimmers, chainsaws and drill augers.

RedMax is not only a forerunner in innovative product development, but also in education and training as illustrated by this sales training program. During these meetings distributors were able to start up, demonstrate, read about, put through the paces and evaluate equipment from RedMax and all its major competitors. Classroom discussion seminars allowed Ideal salespeople to understand all feature and benefits of all brands of products in the marketplace.

RedMax and Ideal agreed that getting back to the basics is the seed to success for the 1990's. Training programs will be an ongoing part of RedMax support programs and they are the only company in the outdoor power equipment industry to educate its sales people in order to better serve its customers.

During a hike in the woods a troop of boy scouts came across an abandoned section of railroad track. Each, in turn, tried walking the rails but eventually lost his balance and tumbled off.

Suddenly two of the boys, after considerable whispering, offered to bet that they could both walk the entire length of track without falling. Challenged to make good their boast, the two boys jumped up on opposite rails, extended a hand to balance each other, and walked the entire section of track.

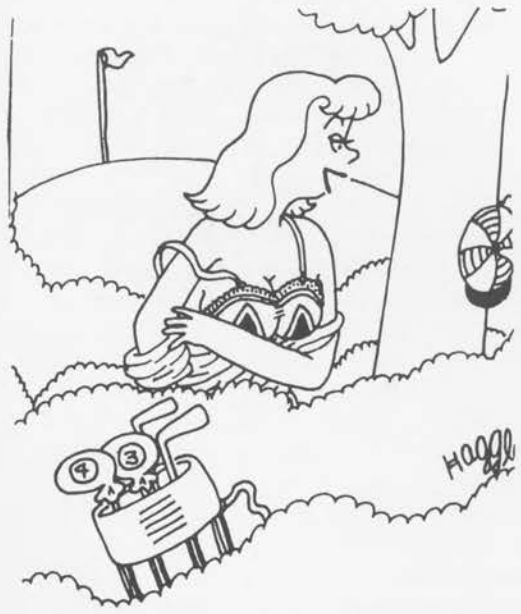
There, in a nutshell, is the principle of modern business and community living. The day of the hermit and the lone wolf are gone forever. We do things better, we produce more, and we live better by helping each other. The fellow who lends a helping hand benefits himself at the same time as he helps the other fellow.

The difference between a good company and a poor one, an effective department and an inefficient one, is often reflected in the cooperation, or lack of it, among the people who work there. When people help each other, freely and voluntarily, there's a spirit of teamwork that makes a department or company really go — a pleasure to be associated with. When there's no cooperation — no spirit of the helping hand freely given — what might have been pleasant jobs become grudging chores.

Do you recall when Edmund Hillary and his native guide, Tenzing, made their historic climb of Mt. Everest? Coming down from the peak Hillary suddenly lost his footing. Tenzing held the line taut and kept them both from falling by digging his ax into the ice. Later Tenzing refused any special credit for saving Hillary's life; he considered it a routine part of the job. As he put it: "Mountain climbers always help each other."

Should the rest of us be any different?

From Bits and Pieces, Vol. D/No. 1B



"Well, there's certainly more to this game than I thought!"

Professionalism Through Participation

BY TED WOEHRLE

What is professionalism? How do we achieve it? How do we improve it? If we sit down and ask ourselves the question "what is professionalism?" some interesting thoughts will crop up.

We all have images of people who are generally considered professionals in our eyes (doctors, lawyers, dentists, teachers, ministers, etc.) and people who are not (tradesmen, office workers, farmers, etc.).

Next, we ask ourselves "are WE professionals?" We would like to think so. I think we appear to ourselves as professional, but does the general public consider us professional? Perhaps not.

What makes one man a professional and another a non-professional? In my opinion, it has to the standards that one projects. Standards of conduct, standards of dress, standards of ethics and standards of behavior. There are others to be sure, but in the final analysis, it is a matter of image that is projected. It is a matter of being viewed in a favorable light. To be sure, there are as many variations of this image as there are people, but throughout the years certain groups or job categories have become known as "professional" and basically it is a matter of image and the standards they have met.

Professionalism and image are synonymous and if we project a good image, we are far ahead. How has this image of us formed, and how can we improve it? Who sets the standards? The answer to all of these questions is your PROFESSIONAL ASSOCIATION. There is, of course, some governmental involvement; but even the government has to reason with the American Medical Association and the American Bar Association, for examples. So, in the final analysis, it is ones professional association that plays the major role in establishing the image that will prevail, that plays a big role in setting the standards which will be acceptable, and that which acts as a catalyst for all activities relating to a PROFESSION.

(There are exceptions to this professionalism and that would be the rather rare person, or persons, who projects a professional image because of special qualifications earned through experience or education.)

What has participation in these associations done for the turf management industry and for the professional turf manager? Participation in the collective activities of an association by individual members has taken turf managers out of the shadows into the sunlight. PARTICIPATION has helped to move turf managers from tradesmen to professionals.

All of this has been accomplished by those in the turf industry giving of their time, money and efforts toward a common interest within a fixed code of rules and conduct, the purpose of which is focused toward the upgrading of the industry and the professionalism of the turf manager.

Fundraisers such as "Golf Day" (and others) are an important part of upgrading the industry. The monies given to research help find answers to the many complex problems facing us today. The need for the superintendent to stay abreast of changes in the field has always been important. But the need is increasing with alarming speed. The superintendent who does not keep abreast of new developments in turf management, of changing technology in science, or of the restrictions and regulations in chemical usage will be about as effective as the man who tries to cut fairways with a hand push mower.

CONTINUED NEXT PAGE

IN MEMORIUM

DR. FRED V. GRAU
1903-1990

Fred V. Grau started with his avid interest in turfgrass while a student at the University of Nebraska, and continued for a Master's degree in pathology at the University of Rhose Island and a Ph.D at the University of Maryland in weed control.

Dr. Grau became the first Extension Turf Specialist in the United States, working with D. Burton Musser at Pennsylvania State University in 1935. He found that crown vetch was a solution to highway roadside erosion control and helped develop the first hydraulic seeder. Penngift crown vetch was later developed.

In 1945, Dr. Grau became the first director of the U.S. Golf Association Green Section. In 1953 he joined the Nitroform Agricultural Chemical Corp. promoting Nitroform. In 1959, Dr. Grau became executive secretary of the Pennsylvania Turfgrass Council. He helped create the Musser International Turfgrass Foundation and the National Sports Turf Council. His work led to the formation of a separate division (C-5) for turfgrass and in 1987 the society created the Fred V. Grau Turfgrass Science Award to recognize the significant contributions by Dr. Grau to the field.

Dr. Grau was a prolific writier about turfgrass subjects and soils. He was always excited about pushing on to achieve the potential he believed the turfgrass industry might reach. Dr. Grau not only had an important impact on the industry, but also on many individuals and he will be greatly missed.

Every professional does not have to have a Ph.D or have spent most of his life as a lawyer or doctor to earn the respect and esteem that comes with knowing his job. It was not too long ago that very few universities offered professional training for golf course superintendents. Today, numerous institutions offer some sort of training for those interested in pursuing a career as a golf course superintendent. (The secret is the application of the knowledge gained from education and research.)

Additional help for us comes from universities and industry research. In many cases we control the direction of research through our requests. Our needs are attended to by those we support. The complexities of todays standards, which are always more demanding, cause us to look for all the help we can get. Some of the most active associations involved in the distribution of monies for research are GCSAA, USGA, O.J. Noer Foundation and Musser Foundation. Additional research is done by individual states. In all cases, the majority of the monies raised is the result of superintendent involvement in fundraising projects. Some state raise $30-50,000 per year (Ohio and Michigan) and certain state legislatures support turf research if all turf interests are satisfied.

Projects presently being worked on include: Grass breeding (drought resistance); transition zone problems; soils; irrigation and drainage; aerification and compaction; nutrition; weed killers - selectively (Poa annua eradication); plant growth regulators; disease control; insecticides; development of disease models (in conjunction with computers); water shortage; new cultural practices; mowing (height of cut, picking up clippings, etc.); cultivating; and sand use (topdressing, sub-soils, bunkers, etc.).

Examples of turf research include the USGA Green Section, 1953 and GCSAA S & R Funds, 1956. Midwest Regional Turf Foundation originally provided professional guidance for seven states — Wisconsin, Michigan, Iowa, Illinois, Indiana, Ohio and Kentucky. As the years went by, all six states outside of Indiana started their own turfgrass research programs to solve individual problems. This holds true for all 50 states. Extension programs take care of most problems, but concentrated research must still be conducted in individual states.

Changing our "vocational occupation" to a professional occupation is important — become active. Your professional association is more important now than ever, and your participation is necessary to support the programs that are proposed for the successful future of GOLF.

Some of the association activities include educational opportunities at conferences, seminars, and through correspondence courses ultimately leading to **certification**, which most of you know will eventually lead to the equivalent of a college degree. By offering a Continuing Education Program, you will be able to earn a "Certificate of Professional Education". This, coupled with Professional Internship requirement for the apprentice superintendents, will insure quality in the next generation of superintendents.

By the year 2005, the requirement of a Bachelor of Science degree in an applicable major, or its equivalency, will be necessary for entrance into professional certification. College graduation or equivalency will be required. Completion of the GCSAA Continuing Education Program is considered as equivalent to a B.S. Degree.

The **association** is making our profession more recognizable with strong public relations programs, evident during cable and network television broadcasts of major golf tournaments. During a recent televised U.S. Open Allied Golf Associations recognized our profession and its importance to the well-being of the game of golf.

Your association is the catalyst. The forum for expression of your ideas. The source of your education. Your growth. Certain members in your profession will gravitate to leadership within your association and by representing the will of the other members, will set the standards, the consensus, the image.

I charge you to allow your association to tell your story to the nation in order that YOUR image will be established in the public eye. In turf management, professionalism is already here for some, near for others. You and your association are the only ones who can make it happen. **Associations** large or small, national or local, technical or social, give you an avenue to professionalism through **Participation**. Continue to participate. You and your **profession** will be better for it.

NEWS FROM SOUTH OF THE BORDER

The only place in Canada that is south of the US border is Essex County and the locales of Windsor, Amherstburg and a few other places so I could not resist the above introduction. The Province of Ontario is much like Michigan in that geographically it is widespread and diverse. As a result Golf Course Superintendents are joined together regionally by small associations. The Ontario Golf Superintendents Association, a province-wide group, hosts a joint Spring meeting, but because of the long distances and resulting climatic differences a new, regional, association was formed that includes Kent and Essex Counties, all within an hour drive of Detroit. Mark Schneider, Superintendent at Beach Grove Golf Club was the founding member. The group has become known as **KEGS**, the Kent Essex Greenkeepers Society. We have just completed our first year of existence. Rob "Mitch" Mitchell of Seven Lakes Golf Club has been appointed President for the first term of office. One meeting each month is arranged and the format is always 2:00 p.m. nine holes of golf and an informal gathering with a topic of the day at 4:00 p.m. convened at the Turf Maintenance area of the host club. At this writing the 1991 scedule has not been finalized but the first meeting is likely to be hosted at Dan Uzelac's 19th Hole. Dan is pleased to continue his long standing relationship with both sides of the border and is looking forward to hosting the kickoff meeting.

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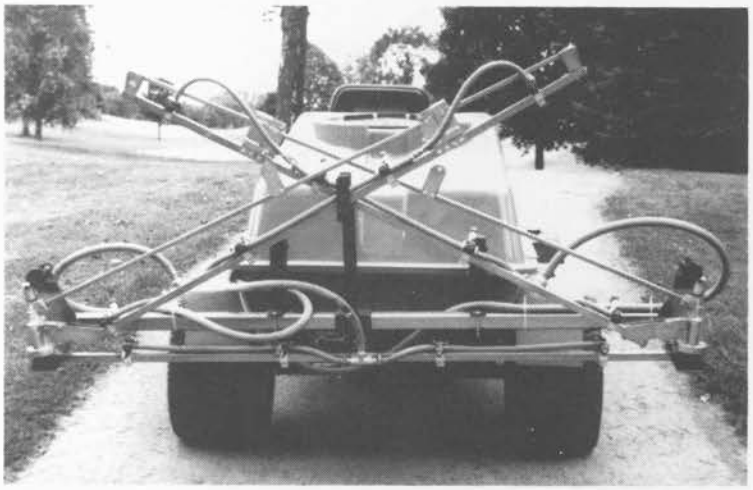

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3-Cylinder piston, diaphragm, 25 gpm, 0-200 psi

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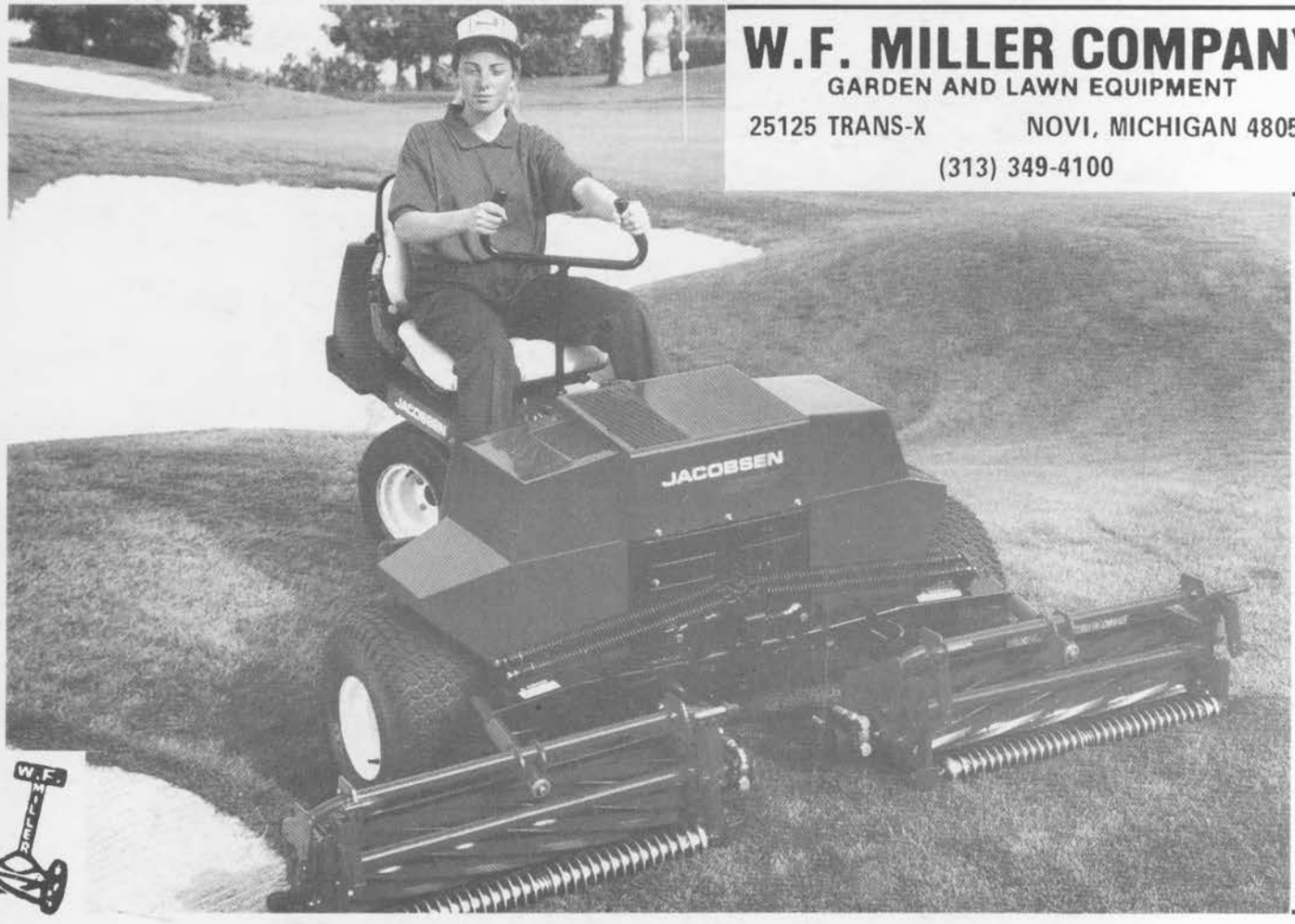

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