VOLUME 4
ISSUE 2

JUNE
1991

SPORTS TURF Newsletter

...for better, safer Sports Turf

COMING EVENTS

June 19, 1991

5th Annual Sports Turf Association Field Day
Milliken Mills Community Centre
Markham
Contact: Chris Mark
(416) 736-2100 ext. 22373

July 31 - August 2, 1991

American Sod Producers Association
Summer Convention and Field Days
Portland, Oregon
Contact: ASPA (708) 705-9898

August 12, 1991

OTRF Fundraising Golf Tournament & BBQ
Contact: OTRF office
(416) 274-3109

August 22, 1991

GTI/OTRF Research Field Day
Cambridge Research Station
Contact: Annette Anderson
(519) 824-4120 ext. 2597

TURF HOT LINE (519) 767-1211

The Turf Hot Line is up and running for the 1991 growing season. It has proven to be a very effective way to provide seasonal information on turfgrass management on a regional basis. The Hot Line is in operation 24 hours a day and the 3 minute message is updated each Friday morning by 10:00 a.m. Please help to spread the word of this information service to others in the commercial turf industry. Your feedback is also welcome. Contact Annette Anderson at (519) 824-4120, ext. 2597 if you have information on turf problems that are developing in your area.

RECOMMENDATIONS FOR TURFGRASS MANAGEMENT NOW AVAILABLE

OMAF Pub. 384 Recommendations for Turfgrass Management contains information on insect, disease and weed control on turf.

There is also a section on fertility and turfgrass species and varieties. This new publication is an excellent reference for commercial turf managers. Copies of this publication and other OMAF publications listed below are available from your local office of the Ontario Ministry of Agriculture and Food.

OTHER PUBLICATIONS

Pub. 529 *Weed Control in Lawns & Gardens*

Pub. 383 *Production Recommendations for Nursery and Landscape Plants*

Pub. 75 *1991 Guide to Weed Control*

IN THIS ISSUE

CONFERENCE HIGHLIGHTS

DAMAGE CONTROL ON COMMUNITY SPORTS FIELDS

This article is taken from a presentation made by Al Higgs, Executive Director of Parks for the City of Etobicoke, and focuses on the positive effects improved growing conditions provide to the quality of a premier sports field.

Parks and Recreation Services in Etobicoke permit approximately 200 ball diamonds, soccer and football fields, cricket pitches, etc. Our maintenance varies from cutting the grass and marking the field, to a very extensive program that I will talk about on our Centennial Park Stadium.

The Stadium is located in Etobicoke Centennial Park which was started in 1966 as a Centennial project. The park is presently 525 acres and includes ski hill and chalet, twin pad arena, stadium, and outside sports fields, Etobicoke Olympium, our olympic pool and gymnasium facility, our greenhouse conservatory, picnic area for up to 10,000 people, 12 acre man-made pond, privately operated golf course, indoor soccer arena, two sets of tennis courts, etc.

Centennial Stadium was built in 1967 and contains a regulation irrigated football/soccer field, complete track and field facility, including a 400 meter, eight lane synthetic, state of the art running track - seating for 2,200 + berm seating, two snack bars, washrooms, 12 change rooms. The track is sanctioned for world record competitions. This facility is very heavily used and during 1990 we held 144 soccer games, 16 at professional level, since this facility is the home of the Toronto Blizzards of the C.S.L., 31 semi-professional (Metro Italia and Metro Crotia of the Metro Toronto Soccer League). In addition, there are 97 community level soccer games; we hosted a total of 57 Track and Field meets; ten football games and five miscellaneous events.

Compare this use to most stadiums used by professional teams. Our first booking was the week of April 16th (Track and Field) and our last event was the High School Football final Nov. 6/90.

In the past the intensity of use of this facility has required that we re-sod from 2/3 to the entire field each year. Sodding took place after the high school football final in the first 10 days of November and the field was opened for use the first week of May the following year. There was only one year when the weather prevented our sodding the field that late, and the following spring we were lucky and sodding was completed the first week of April. Each year special arrangements were made with our sod supplier to receive sod this late. We had even gone so far as receiving sod a week or ten days prior to the last use and storing it on pallets in an unheated storage building.

The conditions for sodding were usually so poor that no attempt was made to rototill or incorporate, sand, peat, etc., because if we opened up the soil and got any kind of moisture, we would not get the sod down. The practice resulted in severe compaction and poor growing conditions.

Back in the mid 70's we actually went as far as investigating the possibility of putting a synthetic surface, such as Astroturf, down in order to meet the demand, and help reduce the annual cost associated with the re-sodding.

Our investigation very quickly showed that we could not, in fact, save any money and that the cleaning and repair costs on artificial turf were nearly as great as the maintenance costs on natural turf. Our information showed that installation costs at that time would be in excess of 1 million dollars, and that most facilities with artificial turf were having to replace surfaces after 7 to 10 years. A 1 million dollar expenditure at 10% interest equates to $100,000 carrying cost per year without paying any of the capital. In addition, and equally important, was the fact that most athletes do not like to play on artificial turf, and the incidence of injury is greater.

The frequency of use has meant that in order to maintain a good surface for this sports field, an extensive maintenance program has been developed. In addition, we have made some repairs and modifications to the irrigation system to make it more efficient. We have also spent a considerable amount of time with staff so they understand the principles and are constantly thinking of the health of the field. The net result of our efforts for the 1990 season was that we only re-sodded approximately 175 metres of sod after the November 6/90 high school football final.

1990 was very much a learning year; however, we found that we could substantially reduce the amount of re-sodding that is required. We used light tech sod, supplied by Bellhaven Sod Farms as an experiment. The areas re-sodded were the two goal mouth areas and centre field. We excavated these areas to a depth of 3-5", replaced the material with 70% sand, 30% topsoil, rototilled, raked, applied superphosphate, and rolled. The light tech produced root, even in the cold November soil and completely knit in April.

For the light tech sod we have used two different types at each end of the field - one end in 40% fescue, 60% rye, the other end is 100% fescue. Performance of each product will be assessed over the 1991 playing season.

Field Specifications

The growing median is a soil mix and is crowned approximately 20" in the centre. There are two drainage systems below the field, the original system was installed at a depth of 3 or 4 feet, and has proved to be very ineffective. A second surface system was put in and the trenches were filled to within several inches of the surface with coarse stone. There is also a continuous drain along the inside edge of the running track.

The irrigation system is a 10 station *valve strip zone system*. Modifications have been made so that all sprinklers are on swing arms. Watering is generally 2 or 3 times per week, except after aerification, and overseeding when it is done nightly to prevent desiccation. We are applying between 1/2" and 3/4" per application. This amount is adjusted to reflect the weather and drying conditions.

For 1991 our plan is to aerify, in two directions, once a month. We are using both core and slicing equipment. We are attempting to modify the surface tension or resilience by either aerifying and topdressing, or in some cases, rolling. For example, just prior to the football final last year we had two days of heavy rain and the surface was very slippery and soft. Staff rolled the surface with a mott mower, tilted back on the roller, and then topdressed all areas where the turf was thin, with sand. This resulted in a good tight surface for the game and we had very little damage to the field. Intense aerification was performed immediately following the game to again relieve compaction. We are presently applying three complete topdressings of sand each year; however we will need to convert to a mix using sand, soil, peat, etc., in future years.

In 1990 we used a general seed mix, a rye and bluegrass mix, and turf type tall fescue. For 1991 we intend to use a mix of 12% Touchdown or Baron Bluegrass, 13% Haga or Nugget Bluegrass and 75% of two of the following rye grasses - Pinnacle, Palmer Two, Omega Two. Last fall, as a result of our 1990 overseeding program, we had semi-mature plants to new plants of several types of varieties and we wanted to monitor what happened over the winter. We particularly observed how the turf type tall fescue sod over winters and how seedlings at the third to fourth leafstage performed. The tall fescue weathered very well and showed new root production in the first week of April. The seedling grasses wintered well until mid-February. At this time we had no snow cover and very cold windy weather. As a result, virtually all seedlings desiccated and by April 1st had melted out.

GRASS CUTTING

In the past, our cutting height has been as long as 2 3/4". This has been reduced to 2" except for football when we let it go to 2 1/2" - 2 3/4". We cut twice per week using a triplex reel mower.

Our fertilizer program in 1990 consisted of six application. The first two were 32% nitrogen product applied at 2 lb. of N/1,000 sq. ft. The last four were 12% nitrogen product applied at 3/4 lb./ 1,000 sq. ft. The schedule for applications was at 1 to 1 1/2 month intervals. Early in the season extensive damage from use and a very low drought tolerance was observed. Since our fertilizer was a 10-1-1 ratio we associated the damage with our feeding practice.

As a result the fertilizer schedule for 1991 has been modified. In early April an application of 10-1-1 ratio 32% nitrogen product was applied at 2 lb./1,000 sq. ft. From May to September we plan to apply a 3-1-2 ratio, 14% nitrogen fertilizer at 3/4 lb. N/1,000 sq. ft. on a monthly schedule.

Here in Etobicoke we feel we have proved that an extensive maintenance system can effectively compensate for the high volume of use. This procedure does not save money, however the expenses normally applied to the re-sodding of the field at the end of the season have been redirected to the enhanced maintenance program. The net result has been a safer field for athletes to play on. Staff education and involvement in the decision making process is important and should be a part of any program.

TURFECS

Guelph, Ontario. March 23 & 24, 1991 - TURFECS conducted a highly successful pesticide safety training seminar at Springfield Golf & Country Club. Over 40 attendees were represented from all areas of the turfgrass industry including golf courses, parks and lawn care. The goal of the two day seminar was to effectively introduce pesticide applicators to the study material for M.O.E. Land Classes 1 & 3 Exterminators Licences. Upon completion of the seminar, attendees were well informed on the basic safety of pesticide application in the environment. For further information on future seminars, contact TURFECS at 519-767-1611.

For Additional Information, please contact:

John Gravett or
Michael Kernaghan
45 Walman Drive
Guelph, Ontario N1G 4G8
(519)767-1611

PLEASE NOTE: TURFECS is an educational consulting service in the turfgrass industry. TURFECS is available for detailed interviews and is available to write professional articles for the turfgrass industry. Please contact either John Gravett or Mike Kernaghan.

UNDERSTANDING TURF MANAGEMENT

The first in a series by
R.W. Sheard, Ph.D., P.Ag.

THE SOIL

The logical place to begin an understanding of how to grow better turf is to start with the soil on which the grass grows.

While the turf manager may provide protection against insects and disease, the primary management function, with the exception of mowing, is the correction of the soil conditions to those which optimize turf growth.

The first function of a soil is to provide an anchor for the roots of the plants. Anchorage is dependent on the depth of grass rooting and density of the roots in the soil.

Anchorage may not seem important for such a low growing plant, but the anchorage provided by the roots in the soil is very important in athletic turf. The turf must be well anchored to prevent the turf from being torn loose by the short turns and sudden stops of the players. A field built on a sand base is particularly susceptible to this damage if put into play before the grass has fully developed a root system. Likewise a newly sodded or seeded field is subject to the same damage.

The second function of the soil is to provide the three essential ingredients for good plant growth. They are plant nutrients or food, water and air.

With the exception of carbon from the carbon dioxide in the atmosphere, all of the elements required for grass growth are obtained from the mineral material and organic matter in the soil. The water absorbed by the root system comes from the soil. Furthermore, the elements in the soil that the plant requires for growth must be dissolved in the soil water before they can be taken up by the grass. Air is necessary in the soil to allow the root system to exchange oxygen and carbon dioxide in the process of respiration, an essential life process in plants as well as in animals.

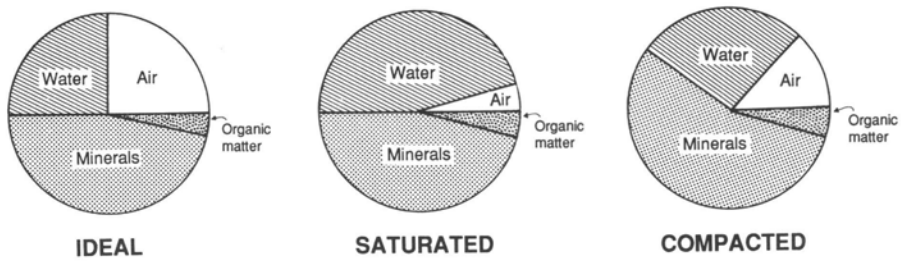
The air and water in the soil are found in the pore spaces; those cavities between solid particles. A perfect soil would contain 50% pore spaces and 50% solid material on a total volume basis. Through the intricate formation of the soil structure, however, such a porous material is still supportive of great weights, i.e., tractors and mowing equipment.

The solid portion of the soil has two components, organic matter and minerals. Of the total volume of a soil only 2.0 to 2.5% may be organic matter, however, it is so vital to the growth of grass that its importance for soil properties and turf growth far exceeds the small proportion found in the soil. The remainder of the solid portion is mineral material ranging in size from the smallest clay particles, only observed in photographs by electron microscopes, to stones and gravel. It is the mineral material in the soil which provides most of the elements the grass requires for growth.

The pore space or empty space between mineral particles is occupied by air and/or water. In the perfect soil half of the space would contain air and half would contain water. As the soil dries more and more of that space becomes filled with air, whereas when the soil becomes wetter the soil pores contain less and less air. Eventually the soil would contain no air, a condition known as waterlogged or poorly drained.

Because the soil contains little air when it is saturated with water, normal root respiration is reduced. Without respiration uptake of plant food is slowed and in turn plant growth is retarded. If this condition is allowed to persist in sports fields a shallow root system develops, reducing the anchorage of the turf. The relationship between soil water and soil air is the reason why a adequate drainage system is essential in a sports field.

In a well aerated soil the composition of the air is similar to that of the atmosphere which is 79% nitrogen, 20.9% oxygen and .03% carbon dioxide. Normally the soil has slightly higher carbon dioxide levels than the atmosphere. Within 48 hours of the soil becoming saturated with water, however, the concentration of carbon dioxide increases and the amount of oxygen decreases sharply. The soil is now said to be anaerobic [lacks oxygen] in contrast to a normal or aerobic soil. In addition other gases such as methane and ethylene begin to be formed. Ethylene a low concentrations acts as a plant hormone, interfering with



The relationship between soil minerals, organic matter, air and water under ideal, saturated and compacted soil conditions.

normal plant growth.

The aeration of the soil is also decreased by compaction. Continued traffic, particularly when the soil is excessively wet, causes the soil particles to move closer together. The water actually facilitates the process, acting as a lubricant for the movement of soil particles. When compaction occurs the larger pores are compressed first. It is these larger pores that are important in the free transfer of gases in and out of the soil. Similarly the rapid movement of excess water from the soil is dependent on the larger pores.

Compaction also increases the physical force the root must exert to penetrate the soil. Experiments have shown, however, that if adequate oxygen is provided the physical limitation is greatly reduced, indicating the first limitation to root growth in compacted soils is aeration.

Hence the understanding of the relationship between pore space, air and water is critical to the proper management of turf.

OUR MEMBERS

PROFILE OF G.C. DUKE EQUIPMENT LTD.

G.C. DUKE EQUIPMENT LTD. was incorporated in 1955 under the trade name of Duke Lawn Equipment. Prior to this incorporation, its founder and President, G.C. Duke, operated for several years as a proprietorship. In 1983, the company's name was changed to its present form. This change was necessitated as the company's name suggested that its business had to do with lawn equipment only when, in fact, the company has, over the years, greatly broadened its product range. The company's diverse range of products includes 750 h.p. airport snowblowers, 95' aerial devices, large municipal streetsweepers, large municipal-sized sewer cleaners, and, of course, a full range of lawn equipment.

The company is situated on a 5 acre site in Burlington where it maintains a large warehouse and parts facility which is backed up by its separate, modern service facility.

G.C. Duke Equipment Ltd.'s major market area is in the Province of Ontario where it markets its industrial products on a direct basis to golf courses, parks departments, municipalities, and Provincial and Federal Government Departments.

The company also has a group of dealer salesmen who market many of the company's products through lawn and garden, and farm equipment dealers throughout the province.

In 1982, the company formed Turfco Inc., a Quebec corporation, to duplicate all of the sales, service, and parts activities in the Province of Quebec. This company has been enormously successful in serving the equipment needs of its customers in "La Belle Province".

The Duke/Turfco organizations sell a wide range of grounds maintenance equipment. Included in these equipment ranges are well-known manufacturers such as Athey, Mott, National, Kut-Kwick, Ryan, Cushman, Ransomes, Sweepster, Super Products and the Hi-Way Equipment Company.

The company is headed by its President and founder, G.C. Duke, who for many years has made it a policy to make sure that the company was actively involved in the associations of its various customer groups. A few of the organizations in which the company holds a membership are The Ontario Parks Association, The Nursery Sod Growers Association of Ontario, The Canadian Golf Course Superintendents Association, The Alumni Association of the Niagara Parks Commission School of Horticulture, Landscape Ontario, etc.

In 1963, G.C. Duke Equipment Ltd. began offering two scholarships yearly to the University of Guelph. Similarly, in 1983, the company began offering two scholarships to the Niagara School of Horticulture. The company also sponsors an annual golf tournament for Assistant Golf Course Superintendents in the Province of Ontario.

For many years, the company has received "Best Distributor" and "Quota Buster" awards from many of its suppliers. All of the plaques of recognition from its various suppliers are proudly displayed in the company's showroom.

SLOW RELEASE NITROGENS

By: Adrien Gallant, P.Ag.
-agrologist with Nutrite Inc.,
Elmira, Ontario.

Nitrogen requirements for sports turf must be sufficient to maintain proper turfgrass density, acceptable colour, and adequate recuperative ability. The specific application intervals depend largely on the type of nitrogen source used.

Water Soluble Sources

If the fertilizer nitrogen source used is from a water soluble material such as ammonium sulphate, ammonium phosphate, ammonium nitrate or urea, more frequent applications must be made to maintain acceptable growth and colour.

The disadvantage of using only fast release nitrogen is a greater chance of burning the turf during hot weather, higher loss through volatilization from urea and higher loss through leaching, especially in course textured soils. Since fast release nitrogens do not last long, more frequent applications are required and thus higher labour costs.

Slow Release Nitrogen

Sports turf managers now have a very wide range of slow release nitrogen sources to help them achieve superior results. There are two main groups of slow release nitrogen; those that come from organic sources and those that are derived from inorganic sources.

Natural Organic

The Canadian fertilizer industry had its beginnings by processing what was at the time by-products of the meat-packaging industry. Organic fertilizers always held an important place in the turf grass industry even after the introduction of synthetic nitrogen.

Agriculture Canada defines "organic" as a substance that originated from plants or animals.

Following are some commonly used organic nitrogen sources.

Milorganite (R)	6-3-0
Vitorganic (R)	8-2-0
Blood Meal	12-0-0
Feather Meal	12-1-0
Leather Meal	12-0-0
Organiform (R)	25-0-0

(R) = Registered Trademark

NOTE:Only 50% of the nitrogen in organiform is derived from organic sources.

The Benefits of Organic Fertilizers

- enhancement of microbial life in the soil
- minimum nutrient loss to the air (volatilization)
- minimum loss through leaching
- even feeding of turf without the stress of surge growth
- organic fertilizers are perceived as being environmentally friendly

Disadvantages

- repeating the low nutrient content requires higher total amounts for turf response
- organics are slow to react during cooler weather
- cost per unit of nutrient is higher

Synthetic Slow Release Nitrogen

There are two types of synthetic slow release nitrogens:

a) those made by coating (example - Sulphur Coated Urea),

b)those made by reacting materials with a nitrogen source to create complex structures called polymers (example - Nitroform and Nutralene).

Sulphur Coated Urea

Sulphur coated urea is made by coating urea fertilizer with sulphur to form a slow release source. This is one of the most commonly used slow release nitrogen sources.

Advantages

An economical source when compared to other organic and inorganic slow release nitrogens.

Disadvantages

Not all sulphur coated ureas are created equal. That is sulphur coated urea is only as good as the weakest point on the coating. If this coating is cracked during transportation and blending, the content is released as water soluble urea. Some independent studies have shown that as much as 50% of the nitrogen from sulphur coated urea could be released within 7 days of application. Ask your supplier to show you independent results of the standard 7 day dissolution test.

Non-coated Slow Release Nitrogen

Following is a list of some non-coated nitrogen sources.

1)Nitroform	39-0-0
2)Isobuthylene Diurea	31-0-0
3)Nutralene	40-0-0

The above materials are not dependent on coating for release as is the case with sulphur coated urea. The mechanism of release varies somewhat.

Nitroform (urea formaldehyde derivative) is released only by microbes. It is similar to organics in that respect. It does not release when microbial action is low (when the soil is cold). Nitroform lasts 12 to 16 months.

Isobathylene diurea 31-0-0, releases only by hydrolysis (water). The release time is 12 to 16 weeks. It releases nitrogen even in cold soil as it is not as dependent on microbial action for release.

Nutralene releases by both hydralysis and mircobial degradation. Nutralene releases over 12 to 16 weeks. Recent studies by Dr. Petroyic, Cornell University, has shown Nutralene is the least likely to leach even when applied at 4 pounds of nitrogen per 1,000 sq. ft.

Conclusion

Although organic nitrogen fertilizers continue to receive a great deal of attention, it is important to note that sports turf managers have alternatives to organics. Many of these alternatives areas "environmentally friendly" as organics and their release patterns are very often, more predictable.

As sport tuff managers, you must evaluate your own situation and decide what source(s) of nitrogen best suits your particular needs.

VOLUNTEERS CREATE NEW PLAYING FIELD

-The Daily Mercury, Guelph,
May 13, 1991

By summer's end, the teenagers at Portage Canada near Salem, Ontario hope to be playing baseball and soccer on a field they helped build with their own hands.

The former drug addicts and young offenders at the centre joined volunteers to put their energy to good use, raking, picking up rocks and helping level the field before planting grass seeds this past weekend.

"We'll take care of it, it'll grow this summer and hopefully we can use it at the end of the summer," MaryAnn Chrisjohn, facility director at Portage Canada said.

Portage, located near Salem, is operated by the Ontario Ministry of Correctional Services. Originally a centre for rehabilitating young men, modelled after a Portage centre in Quebec, it's now expanded to include women.

The Telephone Pioneers of Canada, formed by 700,000 telephone employees across North America, funded the project for the sports field.

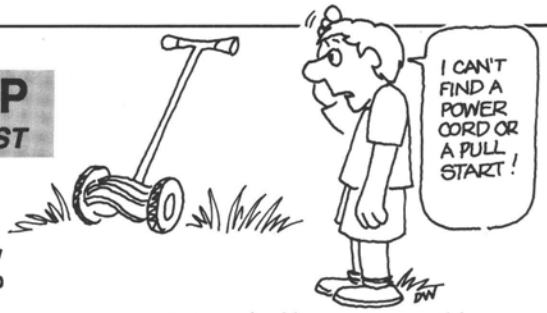
Members from the London-area local of the group were out in full force Saturday to share their energy for the project.

The new sports field will be therapeutic, Chrisjohn said.

"Having a sports field out here is a very big piece of our therapy. We need to know how to enjoy ourselves."

The first Portage Canada was opened in Quebec 50 years ago to treat those with drug dependencies. The facility's headquarters is in Montreal.

SPRING STARTUP
- AN EQUIPMENT CHECK-LIST



-TURF & RECREATION
March/April 1991

Here is a simple check list to follow prior to placing your equipment into service after winter storage.

(1)Check pressure in all tires and inflate to the manufacturer's specifications. Uneven pressures can affect quality of cut.

(2)Check battery, battery posts, and connections. Clean posts and connections and protect them with a thin coating of bearing grease. Check the battery for electrolyte level and fill to the recommended level with distilled water if needed.

Charge the battery if necessary. (Note, always wear safety glasses when working around any lead/acid battery). If it is necessary to remove or replace a battery, always remove the ground (usually black) cable first and connect it last.

(3)Drain any old fuel remaining in the fuel tank and refill with new fuel. This may not be necessary if fuel stabilizer was added to the fuel system when the equipment was put into storage last fall.

(4)Drain old engine oil and remove and replace old oil filters. Refill with fresh oil of the type and weight recommended by the engine manufacturer. Again, this might not be necessary if oil and filter changes were performed during off-season servicing.

(5)Start the engine and check its performance. If it will not start or runs rough it's possible that fuel tar deposits have accumulated in the fuel system. Check and clean the carburetor, fuel pump, fuel lines and shut-off valve.

Check to be sure the engine has "spark". If not, and the engine has a magneto-type ignition system, a thin film of rust may have formed on the flywheel magnets and/or the coil. It may be necessary to remove the fan housing and flywheel so flywheel magnets and coil can be cleaned. If the engine ignition system has a coil, condenser, and distributor, these should be checked and replaced if faulty.

(6)Radiator liquid level needs to be checked. If coolant was drained for the winter or if coolant level is low, add as needed. Use the appropriate type of coolant and water-to coolant mixture recommended by the engine manufacturer. Avoid using more than a 50% concentration of coolant.

(7)In the hydraulic system, it's a good idea to drain and refill with fresh hydraulic fluid once a year. (This may not be necessary if the unit is still new and has relatively few hours of running time). Check your owners manual for the recommended hydraulic oil change intervals.

Always change the hydraulic system's oil filter before placing the equipment back in service, regardless of the number of hours the equipment has been in use. The filter is excellent and inexpensive insurance.

(8)Check belt drives. Belts can "take a set" if they are held in tension in one position for long periods. With the engine off, move each belt slowly by hand and look for distortions, or "bows", in the belt - these can cause it to slip or come off. Running a belt for a few minutes may straighten it out. If the bows don't go away, the belt must be replaced.

Turf Management Programs

a = graduate program
b = 4 year degree program
c = 2 year diploma program
d = other, which includes short courses and related options

ONTARIO

University of Guelph — **abcd**
Guelph, Ontario
N1G 2W1
(519) 824-4120

Seneca College — **c**
Dufferin Street North
R.R. #3
King City, Ontario
NOP 2CO
(416) 833-3333

Ridgetown College of Agricultural Technology — **c**
Ridgetown, Ontario
NOP 2CO
(519) 674-5456

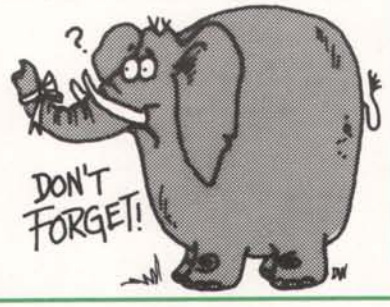
Algonquin College — **d**
140 Main Street
Ottawa, Ontario
K1S 1C2
(613) 594-4577

Humber College — **d**
205 Humber College Blvd.
Etobicoke, Ontario
M9W 5L7
(416) 675-3111

Mohawk College — **d**
P.O. Box 2034
Hamilton, Ontario
L8N 3P2
(416) 575-1212

Kemptville College of Agricultural Technology — **c**
Kemptville, Ontario
KOG 1JO
(613) 258-8359

YOUR DUES ARE DUE!



LAWN AND SPORTS TURF STATISTICS - USA

- The total turfgrass area in the United States is estimated to be 25,000,000 to 30,000,000 acres (size of the 5 New England states), with 81% of this lawns (over 20,000,000 acres). Municipal, county and city parks have close to 1,000,000 acres of turf.
- In a thick lawn, there are 6 turfgrass plants in each square inch, 850 turf plants in a square foot and about 8 million in an average lawn of 10,000 square feet.
- Turfgrass is considered to be a $25 billion plus per year industry in the United States. It is estimated that 500,000 people make their living directly from the care and maintenance of turf. The sale of lawn care items is estimated at $4 billion a year, nearly 1/3 of the total amount spent on gardening.
- Surveys show that a well maintained and designed landscape adds 15% to the selling price of a home. Recovery value is 100% to 200% for landscape improvement compared to an investment in new deck or patio which have recovery values of 40%-70%. Well designed and maintained landscapes add 6% to commercial property value.
- Undesirable noise levels can be reduced 20-30% by grassed areas which absorb sounds.
- Lawns are important in reducing temperatures and can be 30°F cooler than asphalt and 10-14° cooler than bare soil.
- A turf area 50' x 50' produces enough oxygen to meet the needs of a family of four.
- Grasses trap much of an estimated 12 million tons of dust and dirt released annually into the atmosphere.
- An acre of grass will absorb hundreds of pounds of sulphur dioxide during a year.
- Healthy lawns absorb rainfall 6 times more effectively than a wheat field and 4 times better than a hay field.
- One single grass plant can have 387 miles of roots.
- Most of the 58 million children enrolled in public and private schools participate in physical education. It is important to have their playing surfaces well-maintained and resilient to help minimize injuries.
- 20,200,000 golfers play 445 million rounds of golf a year in the United States.
- It is recommended that 6 acres of publicly-owned land be maintained as communal recreational facilities (not including golf courses) for every 1,000 people.

Publication dates 1991

Submission	Publication
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Nov. 12	Nov. 30

Newsletter editor
Michael J. Bladon
185 Edinburgh Road S.,
Guelph, Ontario
N1G 2H8

Production/Design by
Debbie Thompson Wilson
Willustration