This is my last message to you, the members, as I relinquish my position as President after 2 1/2 exciting years. It is quite a challenge starting an organization versus joining one. Historically speaking, we produced a newsletter which has been widely distributed. Our first issue was produced in the Autumn of 1987. Using information obtained from a questionnaire, we are compiling statistics on the amount of sports turf maintained and what maintenance practices are used. We need to find a method of doing this job more quickly! We see a need for an executive secretary to not only handle the administrative workload but also to give the Association some continuity plus headquarters to work from.

There are many challenges for the 1990's. The idea started by CGSA's Bob Brewster of getting groups with similar interests to consolidate their conferences is a good one and one we have benefited from. As Cindy Code, editor of Lawn and Landscape Magazine says, "Consolidation is not only natural but necessary. Attendees would be able to preview a much wider variety of products, attend a medley of educational sessions and share experiences with a wider range of their peers."

Not many organizations will ever have the means to install or even think about artificial turf for their programs. The challenge is to get to them and help them provide better and safer natural grass. There is a need to learn more about sand based fields and their water and nutrient requirements. We need to look at the use of more trickle type irrigation systems to cut our labour costs and put the water where it is needed. Provincial chapters of the S.T.A. are a definite possibility and needed to address local needs and problems.

I have been well pleased with the dedication and commitment of our founding Board Members. Their work, time and effort is much appreciated and I have enjoyed our work together.

To Uwe Sehmrau of the Ministry of Tourism and Recreation my thanks for his considerable help since our beginnings, in both an advisory and monetary role.

Last but my no means least to Annette Anderson who has not only provided us with advice at our meetings but also helped by obtaining quality speakers for our field days and conferences. Her assistance has been invaluable.

In closing I leave you with the words of Dr. Fumio Kitamura the organizing chairman of the Sixth International Turfgrass Research Conference. He said, "Today the more civilized and peaceful a country is, the more (formal) turf is used. When our lives become more comfortable, the importance of grass increases as a place where we can get close to it, enjoy it, play and relax on it. Turf is now a symbol of civilization, peace and affluence."

I look forward to the 90's as your past president.

Yours for better, safer sports turf

Sincerely,

Michael J. Bladon
SPORTS TURF ASSOCIATION
CONFERENCE

SUNDAY, DECEMBER 10, 1989
(offered as part of CGSA pre-conference seminars)

SEMINAR: Construction and Maintenance of Athletic Fields
Dr. Lee Burpee, University of Guelph

MONDAY, DECEMBER 11, 1989  (JOINT SESSION WITH CGSA)

8:30 - 8:45  Opening Ceremonies
8:30 - 9:45  Keynote Speaker: Jack "The Coach" Donahue
9:30 - 10:15  Judith Brede, Jacklin Seed
              Seed Priming
10:15 - 10:30  Coffee Break
10:30 - 11:15  Dr. Nick Christians, Iowa State
              Water Quality and Soil Testing
11:30  Trade Show Official Opening
11:30 - 4:30  Lunch
              Visit Exhibits

TUESDAY, DECEMBER 12, 1989  (SPORTS TURF ASSOCIATION)

8:30 - 9:15  Judith Ferguson-Gockel, Agri-Systems Inc.
              Construction and Topdressing Materials for Athletic Fields
9:15 - 10:00  Field Renovation – Panel Discussion
              3 Turf Managers, 10 - 15 minutes each with question period. ‘Hands-on’ tips.
              1. Mr. Bill Harding, City of North York
              2. Mr. Dave Chapman, City of Toronto
              3. Mr. Jim Galbraith, University of Western Ontario
10:00 - 10:15  Coffee Break
10:15 - 10:45  Dr. T. Senn, Clemson University, South Carolina
              The Use of Natural Products on Turf Management
10:45 - 11:30  Dr. N.M. Rogers, Michigan State University
11:30 - 12:15  Ball Diamonds – Panel Discussion
              3 Turf Managers, 10 - 15 minutes each. ‘Hands-on’ tips.
              1. Mr. Bob Williams, City of Mississauga
              2. Mr. Chris Marks, York University
              3. Mr. Mike Regan, Labatt’s Park, London P.U.C.
12:30 - 2:00  STA Annual Meeting Luncheon

For information contact: Sports Turf Association, (519) 824-4120 Ext. 3460, or
Canadian Golf Superintendents Association, (416) 249-7304

ACCOMMODATION
The two official hotels for conference use are L’Hôtel which is located next to the convention centre,
and the Venture Inn at 88 Avenue Road, just north of Bloor.
Venture Inn (single – $69.00, double – $74.00) or L’Hôtel (single or double – $110.00)
Jack Donohue is best known as the architect of a winning Canadian Olympic basketball program. He coached the Canadian team from a position of relative obscurity to one of the top-rated teams in the world — virtually always a medal contender.

When it comes to competing and winning, "The Coach" knows what he is talking about. For almost four decades he has been instructing, inspiring, and motivating teams that win. A member of the New York City "Coaches' Hall of Fame", Jack Donohue coached a record 250 wins in 300 games in two different high schools (Lew Alcindor, now Kareem Abdul-Jabbar of the Los Angeles Lakers was one of his pupils).

Using his valuable experience, Jack now coaches business organizations and industry on leadership, motivation, teamwork and commitment.

In addition to his coaching duties, Jack has worked with both the federal and provincial sport ministries and has served as a board member of the Sport Federation. He is a current member of the Coaching Association of Canada and President Elect of the Canadian Association of National Coaches.

The following is an abstract from a talk given in July to the CPRA by Rob B. Thibodeau, Litigation Lawyer with Bassel, Sullivan & Leake. It serves as a useful guideline for those who have no inspections of their fields or are thinking of implementing a system.

1. Always ensure that a properly qualified and responsible person with good judgment is put in place to inspect and oversee the maintenance, repair and use of your recreational facilities. This individual will be your key witness at trial and his record-keeping ability and supervision of your grounds keepers and other employees will be subject to concerted attack by the Plaintiff's solicitor;

2. You must ensure that an established written schedule of inspection is created, followed and enforced so that the facilities and playing surfaces under your jurisdiction are inspected as regularly as your budget and manpower will allow. It is my suggestion, as Defence Council, that significant playing surfaces and facilities be inspected every morning by a designated individual and that brief, written or typed, inspection reports or records be maintained by that individual indicating that he in fact attended at the facility or playing surface; what he did when he attended there; and noting particularly any possible or potential problems that he became aware of because of his inspection. Of course, if any problems are noted, then the inspection or maintenance report should indicate who this individual designated to repair the problem and, as part of the paper trail establishing your system, the actual repair invoices or reports are to be completed by the individual employees or the responsible management person after the repairs or alterations have been completed;

3. You should ensure that a training program for your inspection and maintenance supervisor and your actual grounds keepers and other responsible employees is implemented, even if it is only one to two hours per year. My preference would be to see a brief one- to two-hour training program before the commencement of each season of activity relating specifically to the facilities and playing surfaces in that season that would be most in use, e.g. you might hold a training session for one to two hours in September of each year providing special emphasis with respect to your arenas and your football fields, if that is relevant to your particular set-up. Notes should be kept by the individual conducting the training session and an attendance list of all employees at the training session should be kept and any instructional films or materials provided to the employees should be noted;

4. Great effort should be made to keep daily diary journals or notations on employees' daily time cards of all inspection, maintenance and repair work involving facilities under your jurisdiction. In particular, your supervisor, or the staff person appointed by you as primarily responsible for inspection and maintenance, should complete a journal entry every day, which entry should evidence the completion of the inspection and should outline in brief form any repairs, alterations or problems;

5. As previously mentioned, when repairs or alterations are undertaken and completed, a full detailed report should be prepared if those alterations or repairs are significant. The decision on what is significant will have to be left to you, however, I suggest that if it is in an area of a facility where there is any possibility of injury to a user then of course the report should be detailed;

6. Post warning or notice signs in all facilities setting out rules for the use of these facilities and advising of any particular problems or potential dangers inherent in the facility that you are aware of. Although this may sound like an invitation to a potential lawsuit, if an injury occurs because of hazard that you have warned about, as Defence Counsel, I would certainly rather be

(Continued on Page 7)
Membership Listing

ONTARIO
PARKS AND RECREATION

Mr. Allan Seabrooke
The Corp. of the City of Mississauga
Parks & Recreation
3235 Mavis Road
Mississauga, L5C 1T7

Mr. Steve Blaney
Parks & Recreation
City of Mississauga
255 North Christine Street
Oakville, L6J 5A6

Mr. Murray Glassford
City of Mississauga
Parks & Recreation
3235 Mavis Road
Mississauga, L5C 1T7

Mr. Willy Jenson
City of Mississauga
Parks & Recreation
3235 Mavis Road
Mississauga, L5C 1T7

Mr. Danny Bacon
City of Mississauga
Parks & Recreation
3235 Mavis Road
Mississauga, L5C 1T7

Mr. Tom Holloway
City of Mississauga
Parks & Recreation
3235 Mavis Road
Mississauga, L5C 1T7

Mr. Larry Christian
City of Mississauga
Parks & Recreation
3235 Mavis Road
Mississauga, L5C 1T7

Mr. R. Kelth Davidson
Recreation Director
Town of Kincardine
P.O. Box 581
Kincardine, N2Z 2Y9

Mr. Fred K. Bockel
Parks Maintenance Manager
Town of Markham
Parks and Recreation
8911 Woodbine Avenue
Markham, L3R 1A1

Mr. Mark Palenchar
Town of Oakville
1225 Trafalgar Road
Oakville, L6J 5A6

Mr. Leo Ostner
Town of Oakville
1225 Trafalgar Road
Oakville, L6J 5A6

Mr. Peter Kieschnitzki
Town of Oakville
1225 Trafalgar Road
Oakville, L6J 5A6

Mr. Dan Gutteridge
Sarnia Parks & Recreation Dept.
255 North Christine Street
Sarnia, N7T 2N4

Mr. Jim Blaxall
The Public Utilities Commission
Labatt Park
P.O. Box 2700
London, N6A 4H6

Mr. Mike Regan
Facility Maintenance/Operator
The Public Utilities Commission
Labatt Park
P.O. Box 2700
London, N6A 4H6

Mr. John F. de Ronde
Development & Beautification Co-ord.
Department of Parks & Recreation
P.O. Box 364
504 Fourth Street East
Cornwall, K6H 5T1

Mr. Richard J. Spragg
Town Engineer
Corporation of the Town of Leamington
85 Wilkinson Drive
Leamington, M3H 1A4

Mr. Jim Hayward
City of North York
Parks and Recreation Department
5100 Yonge Street
North York, M2N 5V7

Mr. Dave Garrlock
City of North York
Parks and Recreation Department
5100 Yonge Street
North York, M2N 5V7

Mr. Doug Hanson
City of North York
Parks and Recreation Department
5100 Yonge Street
North York, M2N 5V7

Mr. Andre Swensen
City of North York
Parks and Recreation Department
5100 Yonge Street
North York, M2N 5V7

Mr. Bill Harding
City of North York
Parks and Recreation Department
5100 Yonge Street
North York, M2N 5V7

Ms. Llaine McKenna
Director, Parks Division
City of Scarborough
Parks & Recreation Department
Scarborough, M1P 4N7

Mr. P. O'Connell
City of Toronto
Parks and Recreation
123 Edward Street
Toronto, M5H 2N2

Mr. Victor Portelli
Director of Operations
Metro Parks & Property Department
365 Bay Street, 9th Floor
Toronto, M5H 2V1

Mr. R.J. Standish
Manager of Parks, Trees & Sewers
Corporation of the City of Ottawa
1355 Bank Street, 6th Floor
Ottawa, K1H 8K7

Mr. Cliff Turner
Facility Director
Grillwik Parks & Recreation
20 Mississauga Street West
Oshawa, L1V 6K8

Mr. J.D. Rowe
Parks Superintendent
Department of Recreation Services
Town of Ajax
65 Howard Avenue South
Ajax, L1S 2H4

Mr. Vic Hergott
Superintendent of Parks
City of Cambridge
73 Water Street North
P.O. Box 669
Cambridge, N1R 5W8

Mr. Neil Campbell
City of Kitchener
Parks & Recreation Department
Box 118
Kitchener, N2G 2E7

Mr. J.A. Morley
Director of Horticulture
The Niagara Parks Commission
P.O. Box 150
Niagara Falls, L2E 6J2

City of Niagara Falls
Superintendent of Parks
4310 Queen Street
Niagara Falls, L2E 6J5

Corporation of the Town of Newmarket
P.O. Box 528, 465 Davis Drive
Newmarket, L3Y 4X7

Mr. Greg Brookin
Superintendent of Parks
City of Owen Sound
75 Second Avenue West
Owen Sound, N4K 2E5

Mr. Don Harrison
Recreation Facilities Manager
Town of Bradford
Box 251
Bradford, L3Z 2A8

Mr. H. Verschoren
Superintendent of Parks
City of Brampton
Parks & Recreation Department
190 Central Park Drive
Brampton, L6T 1H9

Mr. Hugh Logan
Director of Culture & Recreation
The Corporation of the City of Chatham
P.O. Box 640
Chatham, N7M 5B8

Mr. Everett Buntins
Corporation of the Town of Pickering
1710 Kingston Road
Pickering, L1C 7Y

Town of Pentetangushenhe
10 Robert Street West
P.O. Box 580
Pentetangushenhe, L0K 1P0

Mr. Jack Kamstra
Facilities Manager
Parks & Recreation Department
Town of Hanover
267 7th Avenue
Hanover, N4N 2H5

HOSPITALS

Mr. Gerald Barkley
Groundskeeper II
Grey Bruce Regional Health Centre
1400 6th Street East
Owen Sound, N4K 6M9

BOARDS OF EDUCATION

Mr. Bill Thompson
The Muskoka Board of Education
P.O. Box 750
14 Pine Street
Bracebridge, P0B 1C0

Mr. John Bliz
The Muskoka Board of Education
P.O. Box 750
14 Pine Street
Bracebridge, P0B 1C0

Mr. George Bailey
Assistant Plant Supervisor
East York Board of Education
910 Coxwell Avenue
Toronto, M4C 2V3

Mr. Mike Stacey
Foreman General Trades
Board of Education
City of York
461 Alliance Avenue
Toronto, M2N 2J1

Mr. Ron Barnes
Supervisor, Plant Engineering
Maintenance – Grounds
Board of Education for the City of London
991 Leathem Street
London, N5Z 3M7

Mr. John Watson
Sub-Foreman, Grounds Department
Waterloo County Board of Education
51 Ardelt Avenue
P.O. Box 68
Kitchener, N2C 2E1

Mr. George Hammer
Foreman of Grounds & Vehicles
Waterloo County Board of Education
51 Ardelt Avenue
P.O. Box 68
Kitchener, N2C 2E1

Mr. Jim McIlver
Grounds Foreman
The Wellington County Board of Education
500 Victoria Road North
Guelph, N1E 6K2

Mr. Robert Bellis
Supervisor Grounds and Transportation
Peel Board of Education
3214 Mavis Road
Mississauga, L5C 1T9

Mr. Peter Taylor
Operations Manager
Toronto Board of Education
Plant Department
350 Gilmour Street
Ottawa, KOP 0F9

UNIVERSITIES

Mr. Bill Clausen
Faculty Manager
Department of Athletics
University of Guelph
Guelph, N1G 2W1

Mr. M.J. Bladow
Grounds Department
University of Guelph
Guelph, N1G 2W1

Mr. Christopher Mark
Assistant Superintendent
Grounds & Vehicles Department
York University
42 Neuhaul Place
Mississauga, L5N 6A7

Mr. Jack Funk
Landscape Supervisor
Physical Plant Department
University of Toronto
215 Huron Street, 6th Floor
Toronto, M5S 1A1
MORE LABS WILL PROVIDE TESTING

Several Ontario laboratories will be providing analyses under the Ontario Ministry of Agriculture and Food’s new laboratory accreditation program which came into effect September 1, 1989.

In March, the ministry announced its intentions to further privatize laboratory testing services for farms, home lawn and garden greenhouse media, plant tissues and livestock feeds. Ontario-based laboratories were invited to provide the testing services.

Until five years ago, the ministry’s laboratory testing services were handled by the University of Guelph. At that time, the ministry tendered for testing services and one laboratory was given a five year contract which expired August 31, 1989.

Clients will be required to pay for all analyses. To date, they were not paying analyses of farm soils.

The following laboratories have been accredited to provide the services noted. Other laboratories are in the process of submitting their results and refining their procedures. Additional laboratories may be accredited and announced later this fall.

Submission forms are available in English and French from your local OMAF office with a comprehensive listing of all accredited labs, analyses offered and details on how to submit samples.

ACCREDITED LABORATORIES

Accredited for Analysis of the criteria as shown below (✓)

1. Soils (Farm, Home and Lawn and Garden)

<table>
<thead>
<tr>
<th>Criteria</th>
<th>pH</th>
<th>Buffer pH</th>
<th>P</th>
<th>K</th>
<th>Mg</th>
<th>Mn</th>
<th>Zn</th>
</tr>
</thead>
<tbody>
<tr>
<td>LABORATORIES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accutest Labs Ltd. Nepean</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Agri-Food Labs, Guelph</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>CIL Soil &amp; Tissue Testing Centre, Courtright</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

2. Greenhouse Media and Nutrient Solutions

<table>
<thead>
<tr>
<th>Criteria</th>
<th>pH</th>
<th>Total Salts</th>
<th>NO₃</th>
<th>P</th>
<th>K</th>
<th>Ca</th>
<th>Mg</th>
<th>Cl</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agri-Foods Labs, Guelph</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

OMAF TURF HOTLINE — WELL WORTH THE EFFORT

The OMAF Turf Hotline has been well received by the turf industry. The hotline was updated weekly from April 7th to October 6th and proved to be an excellent method of disseminating up-to-date information on turf management to a large number of people across the province. Your comments on the hotline would be appreciated as we hope to continue this service in 1990.

NUTRİTE FERTILİZERS...
PHYSICAL CONDITIONING FOR SPORTS TURF

Ontario: 1-800-265-8865 / Quebec: 1-800-363-1330
PROFILE OF...
NORMAN M. ROTHWELL

We are pleased to introduce Mr. Norman Rothwell of Lindsay, Ontario. He was born, raised and educated in Eastern Ontario, and joined the Royal Canadian Air Force in 1942.

In 1948 he joined the Toronto Elevators Ltd. working for their Agricultural Division. When they acquired Hogg & Lyle, he transferred to that division to develop the farm and turf seed business. In 1969 he resigned to join National NK seeds and their Eastern Canadian Manager. Three years later he founded Rothwell Seeds Ltd., at Lindsay Ontario, a business he still runs. The company specialization and emphasis is on proprietary varietal distribution which means he controls the sales of many of the grasses in use today. Of these grasses are some 15 Kentucky Bluegrass varieties including Glade, Scenic, Parade and Challenger. In the creeping Bents he lists Adelphi and most notable Penncross. In the perennial rye grasses All Star, Birdie II, Pennant and Ranger plus several Tall Fescues, Chewings Fescues, Colonial Bents, Hard Fescue, and Sheeps Fescue.

He is the past president of the Canadian Seed Trade Association and a Canadian Director and past president of the American Seed Trade Association. Last but not least he is a past president of The Lawn Institute, a position he held for five years. The only foreigner (his words) to be named to that Association.

Norman has a commitment to making North America green and with environmental problems as they are today this is a very large order. It is a commitment the Sports Turf Association is able to not only relate to but also rally behind.

Norman Rothwell was recently made the Canadian Director of the Lawn Institute.

ROB THIBODEAU (Continued from page 3)

in the position where my client has warned the users with a large properly placed sign visible to all users if the potential hazard or danger cannot be removed. An example of this is the situation found in most hockey arenas where bleachers for fans are placed so close to the boards that people standing on the first level of the bleachers can actually reach over the plexiglass. If this cannot be altered, clear notices should be placed.

7. You should work closely with your coaches and other permit users, clubs and leagues to require them or convince them to inspect the facilities that they are about to use before each and every one of their games and events. The establishment of this double inspection system will ensure that complaints, potential hazards and dangers are checked by at least two individuals on almost a daily basis and hopefully will reduce both the frequency of the injuries and the possibility of litigation arising therefrom;

8. You should upgrade the design and capabilities of all older facilities and playing surfaces and, if this cannot be done, limit the use of these older facilities in order to protect against injuries and potential litigation;

9. You should keep detailed records of the amount of funds spent on repair, maintenance and inspection and a comparison should be available to Defence Counsel of the money expended by the Parks and Recreation Department in the previous year and as a comparison to other Municipal departments and to the overall budget available to the Municipality.

10. You should establish, implement and adequately supervise a complaint system in order that oral or written complaints received from residents or users of the facilities are directed to a specific individual who then has not only the responsibility to properly and adequately record the complaint but to direct the work necessary to investigate and resolve the problem to the right individual. Once again records of the resolution of the problem should be kept;

11. You should ensure that you have a detailed, complex accident investigation and reporting system in place for all accidents occurring during the use of your facilities. A detailed report should be completed as to the circumstances of the accident and statements taken from all witnesses, including Municipal employees as soon after the accident occurs as possible. All accidents should be immediately reported to the insurance adjuster in your area who acts for the Municipality so that he can determine if the insurer should be put on notice and if he should conduct further investigation.

These are some of the suggestions that in my experience benefit greatly the defense of a Municipality in actions arising from accidents occurring on playing fields and in facilities.

I advise however that I am not a great believer in the establishment of written policies and procedures either contained in a manual or provided to your employees. Plaintiff’s solicitors always litigate against Municipalities with a two-pronged approach. If proper records are not kept, they will claim you are negligent and therefore liable because you have failed to properly record your inspection, maintenance and repairs and therefore the implication is that you did not have a system in place. The other prong of the approach is that if you do have a system as suggested by myself in this paper, they will look aggressively for any mistakes that you made in following your own system and argue that because you failed to follow your own system or breached one of your own guidelines you are therefore negligent. I would prefer to be in the latter situation, however, I do not wish to freely provide the Plaintiff’s solicitor with ammunition for his argument that we are in breach of our own guidelines. The establishment of written policies and procedures is in my opinion neither necessary nor desirable from a Defence Counsel’s standpoint.

Finally, a note on the practical aspects of litigating actions against Municipalities arising from injuries sustained on
sports turf and other playing surfaces. If you have ever been involved in the process known in our system as Examinations for Discovery, you will be aware that this is an opportunity for the Plaintiff's solicitor to aggressively pursue all aspects of the system that you have established for the operation of your Parks and Recreation Department. In a sportsturf liability case, this Examination process will include a complete Examination of the original design and construction of your turf and, if a Plaintiff's counsel is astute, he will also inquire into the Irrigation and compaction qualities of the surface upon which the injury occurred, as well as innumerable other factors that you are aware of which are involved in the proper preparation of a playing surface for use. The Examination for Discovery process can be a rewarding experience, both from an educational standpoint to yourself and from the standpoint of defending the Plaintiff's lawsuit. However, on the other hand, it can also be a devastating process if the loss prevention suggestions that I have made are not implemented and followed.

In conclusion, there are two words which probably best summarize both the legal situation that you find yourselves in and your response to that situation: Reasonable Responsibility. Parks and Recreation Departments in the operation of their playing field facilities are responsible to perform acts which a reasonably prudent individual would have or should have determined were necessary to protect the users of those facilities. If you fail to do that, you will be responsible. However, another aspect of responsibility in a loss prevention sense is to ensure that you have put in place systems which generate the evidence and the documentation which not only will result in a properly and reasonably maintained playing surface but will permit a successful defence of the Plaintiff's action arising from injuries sustained on that surface.

PROTECTIVE WINTER COVERS FOR TURF

For the past few years the use of synthetic covers has gained popularity in providing some protection of turf areas such as golf greens and athletic fields from winter stresses, in particular, desiccation.

Several benefits of winter covers have been observed:
- reduces adverse effects of wind. Generally beneficial in areas where there is a lack of snow cover and injury from desiccation is often a problem.
- Traps solar heat, therefore can influence air and soil temperature and therefore improved turf growth under marginal conditions.
- Earlier spring greenup (1 – 3 weeks)
- Extended growth in the fall (1 – 3 weeks). This may be beneficial when late fall seeding is done to improve rate of germination (30 – 50%) and promote a slightly longer period of growth in the fall for establishment and improved winter survival. May also be beneficial in the spring to help encourage more favourable conditions for overseeding areas where air and soil temperatures are still very cold.
- Increased top growth and root growth.

A number of synthetic materials have been used as protective covers. A suitable covering material should allow permeability to air, light and water. The objective is to create a "sweaterversusraincoat"type of environment underneath the cover. The density of the material can also affect growth conditions under the cover. If the material is too light it may not provide much protection from desiccation. If the material is too dense, it may adversely effect the turf growth. Expense, durability and handling the material may also be a factor in material selection.

Winter covers are another tool turf managers can use to manipulate the environment to produce more favourable conditions for turfgrass growth. However, it is also important to understand the limitations of winter covers:
- covers will increase daytime and night temperatures on sunny days but little effect is observed on cloudy days.
- winter covers may reduce turf damage due to desiccation but will not provide any protection from ice injury.
- turf under a cover requires the same "winterizing" as turf without a cover. It is very important not to promote lush growth in late fall, there the same rules are in effect for fertility (timing and amount applied) whether the turf is covered or not. If growth is too fast under cover, then turf injury can still occur. Disease control becomes a very important consideration, especially in late fall and early spring, as temperature and moisture conditions under cover may be produced that favour disease development i.e. Fusarium patch.
- If covers are removed too early in the spring the benefits of covers may be negated and may also make turf more vulnerable to freezing temperatures and drying winds. Generally, covers should remain in place for up to three weeks after snowmelt or until variable weather conditions have ended.

ASTM SYMPOSIUM

We hope in future issues to bring you some of the papers presented at the ASTM Symposium in Phoenix, Arizona. These relate to sports equipment, facilities and playing surfaces. As of this writing we do not have written consent to do so.

The titles will include: "Safety Concerns in the Design of Sports Fields" by A. Mittelstadt of the American Safety Institute; "Standards for the Playing Quality of Natural Turf for Association Football" by P.M. Canaway of the Sport Turf Research Institute, Bingley, England; and "Injury Frequency on Artificial Turf and Natural Grass for American Football & Soccer" by Benno Nigg, University of Calgary.