

# Sports Turf Manager

*for safe, natural sports turf*

**Winter 2008**

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## Research at MSU

*Playing Surfaces and Injury Risk*  
Researchers at Michigan State University use a mobile testing apparatus (note the "foot" pictured below) to measure torque on different surface systems. See pp. 12-13 for the results.



HALIFAX COMMONS

## Holistic Turf Management in Halifax Regional Municipality

DR. R.W. DANIELS, DEP'T ENVIRONMENTAL SCIENCES, NS AGRICULTURAL COLLEGE (RETIRED)

**H**alifax Regional Municipality (HRM) consists of approximately 1400 "green sites" which include playgrounds, ball and sports fields. There are approximately 160 ball diamonds and 120 sports fields. A staff of 80 individuals is involved in maintaining these areas with approximately 50 designated specifically to sports and ball fields. The municipality covers a geographic area of 5,600 square kilometres and serves a population of 350,000.

HRM has few concentrated areas of sports fields (complexes), although most are within a 30 minute distance from an equipment depot. The location of these fields requires a great amount of time in transporting equipment and personnel to and between the various sites. All sites and individual fields are located in a pesticide free zone so the turf can

only be improved by using "best management practices," excluding the use of pesticides.

Beginning in the fall of 2006, I was invited by Peter Verge, Superintendent of Sports Fields and Recreational Facilities, to develop and implement a program to improve and upgrade HRM staff and existing turf and playability of these areas with a specific emphasis on recreational fields. At its inception, it was realized that this may take up to five years to accomplish fully. Annual goals were set, and their results are reviewed and modified when necessary on a regular basis.

In setting goals, two specific criteria were followed. Individual yearly goals were developed in advance (at the beginning of each year) and were set high. The premise was that it is preferable to set high goals, even if they are not always attained, rather than set low goals and claim "easy success." → page 8





**SEE  
DR. DANIELS  
IN FEBRUARY AT  
OTS 2009**



## HOLISTIC TURF MANAGEMENT PROGRAM IN NOVA SCOTIA

DR. R.W. DANIELS, PROFESSOR (RETIRED), DEPARTMENT OF ENVIRONMENTAL SCIENCES, NOVA SCOTIA AGRICULTURAL COLLEGE

**Continued From the Front Cover.** Two other principles followed were to not get involved in personnel decisions, thus not recommending that changes be made in the number of employees involved in maintaining the fields, and to identify where efficiencies could be gained, rather than asking for increases in annual budgets. The first two years of this program have now been completed. Continuation and success of this program is due in large part to the support and efforts of Peter Verge, as during its initial phase, much groundwork had to be established, and visual results – which of course all end users wanted to see – were relatively non-existent.

### Early Inspection & Trouble Shooting

Prior to recommending a program, an on-site inspection and analysis was made of representative sports fields. One problem identified initially was the existence of a thick layer of organic matter on most fields. In its effort to eliminate pesticides, HRM had embarked on a heavy topdressing program using organic materials. This practice was very much in line with HRM's mandate of being "environmentally friendly." What those who recommended this program failed to foresee was the fact that unless the topdressing was incorporated adequately into the existing soil, a "layering" of the applied

media would be created. The result of this layering was the creation of shallow rooted plants that thrived well during non-stress periods but were damaged quickly whenever any stress occurred. This problem is being addressed by implementing a multi-year program of core aeration and topdressing with a soil based material.

### Component 1: Procurement

The HRM program consists of three main components: Procurement, Employee Training and Field Trials. With respect to procurement, new specifications have been written on sourcing materials and for the construction of future athletic fields. In respect to materials, HRM is now using specific turf fertilizers, etc., and all materials are tendered in large quantities to take maximum advantage of purchasing power. The establishment of new specifications for sod means that only a certain quality of product is accepted and the lowest cost price is not the determining factor in accepting a specific bid. Using the latest specifications, a new soccer field was constructed in 2008. During the construction process, the quality of materials and workmanship were closely monitored and recorded. Upon completion, all involved will meet to evaluate the process and suggest ways in which future fields can be constructed to an even higher standard.

### Component 2: Employee Training

HRM has approximately 80 full time employees involved in some level of turf management. Every employee was given a three day overview of turf and its basic maintenance requirements. From this group, approximately 50 were selected for additional training. They received six days of customized classroom based education on the yearly requirements of turf establishment and maintenance. A third level of training was offered to 30 individuals who were selected and classified as "Sports Field Technicians." Their responsibilities are varied but stipulate that they become competent in identifying and providing remedial action for specific turf situations and problems as they arise. These individuals received an additional three days of classroom training. Thereafter they will be given annual updates on turfgrass management.

For each educational level, participants were given a written exam. In addition, several on-site clinics were held. These included such practical tasks as measuring a field and determining the amount of fertilizer or seed to apply in a given situation. To selected groups, field clinics on equipment calibration, infield ball groom-

**Above:** George Bannerman, Bannerman Ltd., conducted a one day clinic to HRM staff on equipment set-up and calibration.

ing and proper infield maintenance were offered. These clinics were presented by “experts” in their respective fields. George Bannerman, Bannerman Ltd., conducted a one day clinic on equipment set up and calibration and Ron Martin, Mar-Co Clay Products, conducted a day long clinic on baseball field layout, proper construction and seasonal maintenance of both the pitcher’s mound and batter’s box. Clinics were very “hands-on” and offered only to small groups of individuals so that maxi-

turfgrasses used on golf tees are now being established into HRM’s athletic fields.

### Component 3: Field Trials

Selected fields are chosen and specific treatments applied and evaluated for a minimum of three consecutive years. This time period is necessary to adequately evaluate the effect of a given treatment. Although this is only the second year of the program, some trends are appearing and subsequent changes are being imple-

For example, less money is being spent on sod and more on overseeding. The level of appearance and playability of all fields has increased greatly during the past two years. One measurement is the increased level of satisfaction by the end users and reduction in complaints by both athletes and the general public. Staff working on the fields have now taken a greater “ownership” of individual fields and their personal level of satisfaction of working for HRM has increased.

As the program develops, individual factors limiting its success become evident. One such issue is that of seasonal mowing. Some time ago, a political decision was made to contract out mowing of all turf, including athletic fields. When this was done, standards were set with which individual contractors must comply. When establishing these criteria, no provision was made for increasing mowing frequency or maintaining individual fields at lower heights of cut to improve their playability.

Most mowing contracts are awarded on a multi-year basis and changes can only be made when an individual contract comes up for review. In the meantime, the heavier usage of fertilizers on fields and infrequent mowing result in only a limited improvement in field playability. In some instances, HRM has taken responsibility for the seasonal mowing of selected fields. It is becoming recognized that in order to have consistent acceptable quality in their highest profile fields, mowing should become the responsibility of those directly responsible for the overall

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**HRM employees soon realized they had much in common with the golf course industry.** They both manage turf, have to answer to a demanding end user, and their efforts are not always recognized and appreciated by the general public.

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mum participation by all was achieved. Individuals were then asked to provide suggestions for future clinics.

Another area of education and training occurred when individuals visited the Glen Arbour Golf Course. HRM employees soon realized they had much in common with the golf course industry. They both manage turf, have to answer to a demanding end user, and their efforts are not always recognized and appreciated by the general public. One aspect of turf maintenance they discovered in common was the similar seasonal management of heavily used athletic fields and golf tees. As a result, intensively used areas on athletic fields will be treated in a manner similar to golf tees in terms of aeration, overseeding, fertilization, etc. Specific

mented. One of the most noticeable is the use of perennial ryegrass. With our milder winters and the introduction of more winter hardy varieties of perennial ryegrass, HRM has begun to use this species intensively. The municipality has purchased precision turf overseeders and are using perennial rye in overseeding existing fields. As a direct result, they now purchase less sod and are doing more “in house” overseeding. Those classified as sports field technicians are becoming more specialized with an “overseeding” team, “fertilizing” team, “aeration” team, etc.

### Conclusions to Date

In many instances, this program has not resulted in increased budget demands, but rather a reallocation of existing monies.

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seasonal maintenance of the specific fields.

Measurements of success are now evident. One example is the holding of annual outdoor concerts on the Halifax Commons. After this year's concert, extensive damage to the turf was caused by



Citadel Hill, Halifax

both traffic during event preparation and by the large audience who came to watch it. During the concert and for the following ten days, the area received continuous rain and at no time did the turf have time to dry out. The result was extensive damage to the turf and soil.

The decision was made to repair this damage in-house. This was welcomed by the employees as it provided an opportunity for them to put into practice the classroom theories that they had learned. Upon completion, they took pride in their work, ownership of the project and were able to complete all work at less cost than if it had been contracted out. As a result, HRM is considering a policy whereby in the future a portion of each concert ticket will be designated for field restorations which will be carried out by HRM employees.

In many respects, the initial phase of this program has been completed and the future will deal with the challenge of providing a consistent "high quality" turf using a minimum of inputs and no pesticides. Programs will be developed to use the most efficient fertilizers applied at strategically correct intervals to provide a continuously acceptable turf. Selective overseeding will be done at times and rates to get a maximum population of new seedlings established while suppressing the population of existing weeds. Seasonal

aeration, overseeding and mowing (frequency and heights of cut) will be incorporated into this program. As previously stated, selected fields will be maintained under a given regime for up to three years to adequately measure the results. Sports field technicians will be responsible for observing and collecting the results from individual fields. Consideration is being given to the establishment of a database whereby this information can be stored and easily retrieved to be used as a basis for modification of individual programs.

Without question, the program has been successful to the point that it will be continued. Much needs to be accomplished as additional field improvements are to be made. Principals used in the program and results obtained could be relatively easily used and integrated into similar turf management programs in other municipalities and cities throughout Canada. ♦

Editor's note: Dr. Daniels will present this topic at the 2009 Ontario Turfgrass Symposium together with the session *Construction of the 2010 International Athletic Association Federation Athletic Field in Moncton, NB.*



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