21st ANNUAL STA FIELD DAY

September 11, Brampton, Ontario

Thursday, September 11th dawned crisp and clear as over 225 turfgrass industry professionals gathered at the Sports Turf Association's 21st Annual Field Day at Donald M. Gordon Chinguacousy Park in Brampton, Ontario. Our yearly event continues to offer an impressive roster of speakers with 2008 topics ranging from safety to seed to stretching your budget. This, coupled with the knowledge and expertise shared by our exhibitors, sets the stage for a winning educational forum and networking opportunity for our delegates. We now turn our attention to the 2009 Field Day with consideration given to the many evaluation responses which we received. Thank-you to all who participated in making our 21st Annual Field Day our 21st Annual Success!

Turn the page for a photo gallery...

Left: Our speakers Paul Stevens/Pickseed, Dan Murnaghan/City of Guelph and Darrell MacLean/Town of Oakville.

Middle: Mike Vanderjagt of the Toronto Argonauts with Field Day Committee Member Jane Arnett-Rivers. Mike, our keynote speaker, described for us his journey though professional football from which we could all extrapolate a number of life's lessons – dedication, determination, perseverance, and belief in one's self, to name but a few. If at first you don't succeed, try *try* again.

Right: Chair of the day, Andrew Gaydon, with Lorrie O'Brien, Director of Parks, Maintenance & Operations, who welcomed us to the City of Brampton.

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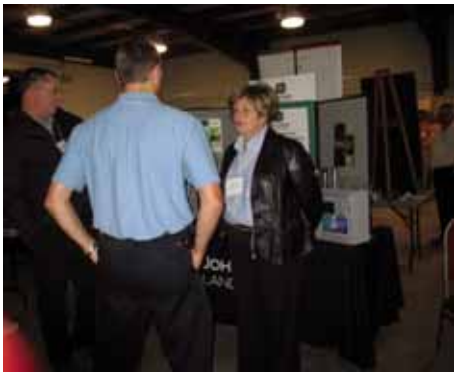





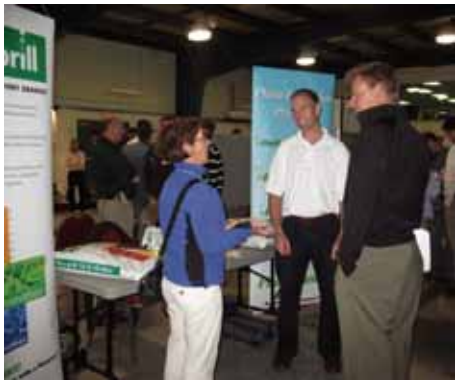

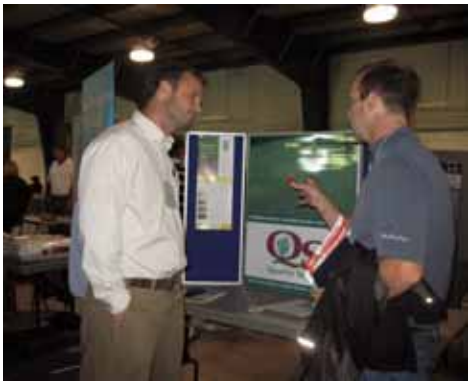

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Invaluable Resource Produced by the STA

The objective of the recently released *Athletic Field Construction Manual* is to provide specifications and guidelines for the design and construction of grass athletic fields. The Manual is designed to assess the requirements for the field and to present the specifications for construction of the field to meet those requirements. It applies to all types of athletic fields that require a natural turf surface on all or part of the play area.

Bringing uniformity to the construction of grass athletic fields, this manual is long overdue as a staple reference for those in the sports turf industry. It establishes standards for the design and construction of the root zone. The standards are based on a classification system (1-5) for the athletic field which is primarily based on the root zone material and the provision of drainage, irrigation and lights. Also included are permitting hours and maintenance costs for field categories; a checklist to evaluate the condition of existing fields; and more than 20 diagrams outlining the approved field dimensions for most field sports using a turf surface.

An invaluable, unique reference manual that takes a systematic design-oriented approach to the construction of natural turf sport fields based on a field classification system and the anticipated calibre of play and turf wear by user groups. ~ D. Murray Cameron OALA

Table 2.2.6 A summary of the design requirements for the five field categories (excerpt from Section 2 of the AFCM).

DESIGN REQUIREMENT	ONE	TWO	THREE	FOUR	FIVE
Soil (% silt + clay)	<8.0	<25	25-40	>40	All Soils
Sub-Surface Drainage System	Yes	Yes	Yes	Yes	No
Irrigation	Yes	Yes	Optional	Optional	No
Lights	Yes	Yes	Optional	Optional	No

HOW DOES 'CVOR' LEGISLATION APPLY TO YOUR OPERATION?

DARRELL MACLEAN, FLEET TRAINER/SAFETY OFFICER, TOWN OF OAKVILLE, 2008 STA FIELD DAY SPEAKER

Commercial Vehicle Operator's Registration (CVOR) is the monitoring system that the Ontario Ministry of Transportation (MTO) uses much like a report card to review the operations of the fleet and its drivers who own or operates trucks that are either registered to, or actually weigh more than 4,500 kg (including load, tools, passengers, etc.). Generally anything over a 3/4 ton truck may be a CVOR truck. *CVOR regulation does not apply to vehicles under 4,500 kg.*

How the System Works

MTO monitors the accumulation of demerit points from collisions, convictions or inspections over a rolling five year period. The more serious the incident (collision or conviction), the higher the demerit points.

Should the CVOR accumulate more than the allowable threshold of demerit points or if there is a high profile incident like a serious or fatal collision, MTO is within its rights to conduct a "facility audit" of the employer.

If an unfavourable facility audit occurs, MTO may issue warnings and fines to the corporation, and/or the driver, and/or reduce the size of the CVOR fleet, and/or withdraw CVOR driving privileges – meaning all vehicles weighing or are registered to weigh more than 4,500 kg will not be permitted to operate at all.

How to Identify Registered Weight

To identify if your truck is a CVOR, look on the mid right panel of the ownership for "Reg Gross Wt (RGW)." If it is higher than 4,500 kg, it is a CVOR truck.

If it is registered under 4,500 kg, but you are unsure of the fully loaded weight of the truck, get it scaled.

In the event the weight of the truck (including its load, passengers and anything else it carries) or gross weight weighs more than the RGW, you can be charged with an overload violation. If the gross weight is more than 4,500 kg and not registered, you can be charged for operating a truck without a CVOR. ♦

Cores, following aerification, showing thatch layer.

TOWN OF OAKVILLE

WHY YOU SHOULDN'T IGNORE THATCH

KATERINA JORDAN, PLANT PATHOLOGIST & ASSISTANT PROFESSOR, DEPARTMENT OF PLANT AGRICULTURE, UNIVERSITY OF GUELPH

Thatch is the intermingled layer of undecomposed organic material between the turf canopy and soil surface. It comprises living and dead plant tissue including shoots, stems and grass roots. The mat layer is the area of thatch mixed with soil, also found between the turf canopy and the soil surface, usually seen on golf course putting greens. It is often a result of frequent topdressing. Both thatch and mat are the subject of many turfgrass maintenance discussions and articles, primarily because excessive levels are responsible for a number of negative effects on the soil profile and turfgrass growth. Even with this wealth of information floating around, excess thatch continues to be an issue on a number of courses, whether on fairways, tees or greens. As such, this article will describe the effects of excess thatch, the factors that lead to its development and, most importantly, discuss preventative practices to reduce thatch levels.

What Does It Do?

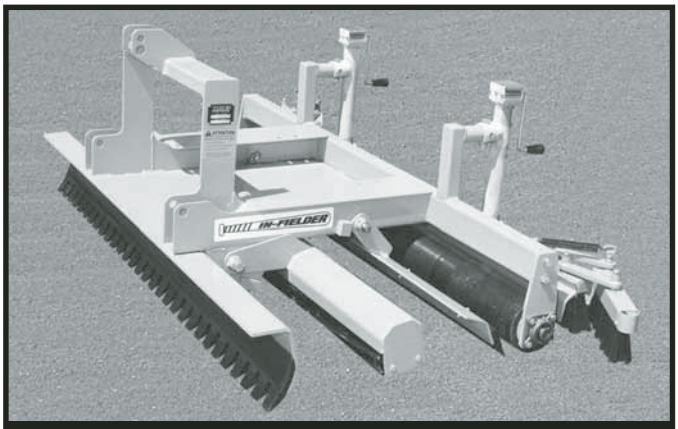
Thatch and mat play an important role in cushioning the turf surface, improving wear tolerance, decreasing soil compaction and protecting the crown of the plant. However, when levels become excessive (usually more than 1.3 cm [0.5 in.], numerous issues can arise including:

- increased pest damage
- decreased water and nutrient retention
- reduced water infiltration
- decreased root health
- increased potential for localized dry spots
- reduced tolerance to extreme temperatures
- reduced efficacy of certain pesticides
- higher potential for scalping and crown damage

Thatch layers provide a haven for insects, weed seeds and overwintering structures of disease pathogens. The high organic matter content and large pore

Excess thatch layer

ADJACENT & TOP INSET, PAM CHARBONNEAU



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space makes it ideal for the development of chinch bugs, sod webworms and cutworms. Diseases such as gray snow mold (*Typhula incarnata/ishikariensis*) and dollar spot (*Sclerotinia homoeocarpa*) are able to overseason in the thatch layer. In addition, root diseases such as summer patch (*Magnaporthe poae*) and take-all patch (*Gaeumannomyces graminis*) are more severe, due to overwintering and reduced stress tolerance. Stress-related diseases such as anthracnose (*Colletotrichum cereale*) have also proven more severe due to the decreased overall health of the plant.

Water movement is also negatively affected. When thatch layers become excessive, roots and rhizomes (horizontal stems) are restricted to those layers, likely because pore spaces are larger and easier to traverse. However, because of these larger pore spaces, water retention is quite poor. Over time, the plants suffer from drought stress; the roots are in the thatch layer, but the moisture is not. The lack of root growth in the soil layer beneath the thatch also reduces the porosity of the soil, often leading to greater bulk density. More often than not, areas suffering from excessive thatch for extended periods of time have compacted soil underneath. At this point, water infiltration is often reduced, as the water is trapped in the thatch layer and unable to penetrate the compacted soil. This further restricts root growth, as moisture is available only in the top layer beneath the plant; roots can get water without going any deeper.

If the thatch is allowed to completely dry out, water repellency can occur. Because thatch is primarily organic material, it is very difficult to re-wet after it has dried. This often leads to localized dry spots. This, in turn, causes increased runoff and wasted water, as well as drought. All of these factors damage both root and overall plant health. The roots remain shallow and more prone to drought stress, but are also more susceptible to temperature extremes as the large pore spaces cannot buffer temperatures as well as the soil layer.

Excessive thatch layers can also reduce pesticide and fertilizer efficacy. Many pesticides applied for weed, insect or disease management are organic in nature. Given the high organic matter content of thatch, pesticides can get bound in the thatch layers and not reach their targets. In addition, the microorganisms that break down thatch often break down the trapped pesticides before they have the chance to be effective. Fertilizers may also get stuck in the thatch layer due to decreased infiltration. They may be less effective for the plant because volatilization of certain nitrogen sources is found to be greater in excess thatch layers compared to soil.

TOWN OF OAKVILLE

Excessive thatch layers can also reduce pesticide and fertilizer efficacy. Both can get stuck in the thatch due to decreased infiltration and not reach their intended targets. Excessive thatch can also lead to physical damage of the plant through an exposed crown or mower scalping.

Finally, an excess thatch layer can lead to physical damage of the plant either through an exposed crown or mower scalping. Thatch often raises the level of the crown, making it and the plant more susceptible to injury. In addition, the sponginess created by a thick thatch layer increases the potential for mower scalping due to bouncing of the equipment. Even if the plant is not scalped, the cut is often uneven, which compromises playability.

Where Does It All Come From?

Thatch develops naturally from the breakdown of the various parts of the turfgrass plant. Excess thatch builds up when the rate of production of plant material exceeds the rate of decomposition. Most often, plant material that does not easily decompose contributes to thatch layers – namely stems, stolons, rhizomes and root tissue. These tissues are highly lignified and therefore much more resistant to microbial breakdown. Leaf blades are about 80 per cent water and comprised primarily of cellulose, which is much more easily degradable than lignin. This is why, in most cases, leaving clippings on the surface will not significantly contribute to a thatch layer. However, if the rate of growth greatly surpasses the rate of decomposition, thatch can result from the senescence of any plant materials.

Factors that can contribute to thatch development include turfgrass species and cultivar, excess nitrogen fertility or irrigation, continual use of broad-spectrum pesticides, non-neutral pH levels and com-

pacted soils. Certain turfgrass species – including Kentucky bluegrass (*Poa pratensis*), creeping bentgrass (*Agrostis stolonifera*) and velvet bentgrass (*Agrostis canina*) – are more prone to developing excess thatch than others. Within these species, different cultivars have varying potential for thatch development. Newer, finer-leafed cultivars of creeping bentgrass such as the A and G series are notorious for building excess thatch layers in a relatively short period of time, as is velvet bentgrass. These species and cultivars are known for their dense growth, which produces more material than can be broken down by the microorganisms.

The effect of excess nitrogen fertility on thatch development is related to increased growth. When high amounts of quick-release nitrogen are added to turf, growth is often rapid, which leads to excess thatch formation over time. Excess irrigation, use of broad-spectrum pesticides and highly acidic or alkaline soils also lead to increased thatch development as they inhibit the microbial populations responsible for breakdown of the thatch material. Excess irrigation often leads to reduced oxygen in the thatch and soil, robbing the organisms of the oxygen they need to function. Overuse of broad-spectrum pesticides is also believed to reduce microbial population levels. Finally, most microorganisms function best at neutral pH levels (pH = 7.0); therefore highly acidic or alkaline soils decrease microbial activity and, subsequently, decomposition of thatch.

Soil compaction can result from excess thatch levels, but it may also contribute to thatch development. Highly compacted soils are resistant to root penetration and water infiltration and also have reduced pore space and subsequently oxygen availability.

As mentioned earlier, soil compaction can result from excess thatch levels, but it may also contribute to thatch development. Highly compacted soils are resistant to root penetration and water infiltration and also have reduced pore space and subsequently oxygen availability. All of these factors lead to shallow rooting and reduced microbial activity in the soil, both of which can lead to excess thatch formation.

What Can You Do About It?

Knowing the contributing factors is the first step towards prevention. Aside from species or cultivar choice, many daily maintenance decisions can affect the potential for thatch development.

- Use smaller amounts of nitrogen more often to discourage a sudden flush of growth. If large amounts are applied