

## MACHINERY MAINTENANCE

# Gauging your pressure gauge

**MONEY-SAVING TIP:** Check tire pressure when you check engine oil. Four tractor tires cost about the same as a new engine. With recommended operating psi sinking into the single digits, regular pressure checks have become critical for optimum wear and performance. But before checking a tire, check your pressure gauge. It's probably overdue for retirement.

Just about the cheapest tire gauge you can buy will monitor tractor tire pressure just fine. An Alberta Agriculture Engineer found some \$6 to \$9 pencil-type gauges worked better than \$20 to \$30 dial and digital models.

But be warned! You can't buy a tire gauge, use it occasionally, pack it around for months in a dusty glove compartment or tool box, and assume it will perform as accurately as the day you bought it. Tire gauges are perishable!

Few farmers ever toss and turn at night wondering about tire gauge accuracy. Falling commodity prices, rising input costs, mortgage payments, the impact of new international trade agreements, even the cost of new machinery ... these are what sleepless nights and grey hairs are all about.

Faulty tire gauges are low priority, right? But that \$10 you spend on a new gauge is a good investment, says Reed Turner at the Alberta Farm Machinery

Research Centre in Lethbridge. "The cost of four tires is about the same as a new engine," he says. "Most farmers check oil levels regularly, but how many routinely check tire pressure?"

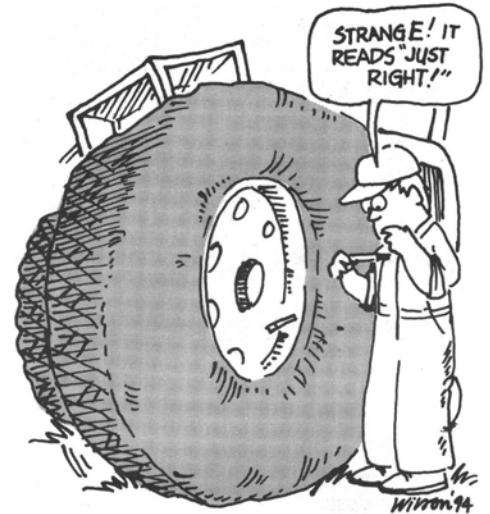
And even if you do throw the gauge on from time to time, how old is it, how many times have you used it, how often have you cleaned it, and how do you know it's showing the correct psi? The truth is, you probably don't know.

With tire pressure recommendations going steadily downward, Turner set out to find a better - or best - tire gauge.

Particularly with radial tires (*Country Guide*, June/July, 1992), manufacturers are now recommending pressures as low as 6 to 8 psi for proper performance. If your gauge is out by 2 to 4 psi, it doesn't matter so much when your running at 18 to 20 psi anyway, but being out by 2 to 4 psi when you're targeting 6 to 8 is bad news.

With tire pressure and, indirectly, gauge accuracy being more critical, Turner tested 10 commonly available gauges. That included pencil or stick types, dial gauges, and digital gauges. Prices ranged from \$6 to \$30.

His rating criteria included pressure range (lowest to highest pressure measured); readability when on a valve stem; accuracy (deviation from know psi); du-



rability (tolerance of normal wear and tear including a drop test); and general performance on tires carrying liquid ballast.

What did he learn? Plenty. Some gauges obviously don't go low enough to measure the new tire inflation recommendations. Others start at zero psi and go all the way up to 150 - not necessary or practical for farm use. He preferred models concentrating on the lower ranges.

Poor markings or too much information on the guide stick made some gauges hard to read while on the tire. Others needed 2 hands for proper operation.

Accuracy also left much to be desired. Some gauges were inaccurate on the first use. Others were fine initially, but lost their accuracy after repeated readings. On durability, pencil-type and digital gauges were better able to withstand wear and tear. The drop test generally

**Tire Pressure Gauges Ranked From Best to Worst**

Gauge	Type	Price	Pressure	Readability	Accuracy	Repeatability	Durability	Ballast
Superex	Pencil	\$6.00	10 to 15	Excellent	Excellent	Excellent	Excellent	Acceptable
Motomaster	Pencil	6.00	0 to 20	Excellent	Acceptable	Acceptable	Acceptable	Acceptable
Bridgeport 40-402	Pencil	9.00	5 to 45	Acceptable	Acceptable	Excellent	Acceptable	Acceptable
Bridgeport 40-399	Pencil	8.00	0 to 20	Excellent	Acceptable	Acceptable	Acceptable	Poor
Accutire	Digital	30.00	0 to 150	Acceptable	Acceptable	Acceptable	Acceptable	Poor
Milton s901	Dial	20.00	0 to 15	Acceptable	Excellent	Excellent	Poor	Poor
Milton s917	Pencil	8.00	0 to 20	Acceptable	Poor	Acceptable	Acceptable	Poor
Milton s928	Pencil	8.00	5 to 50	Acceptable	Poor	Poor	Acceptable	Poor
Superex Dial	Dial	8.00	8 to 60	Excellent	Poor	Poor	Poor	Poor
Power Flat	Dial	5.00	8 to 60	Excellent	Poor	Poor	Poor	Poor

cooked dial gauges.

And on ballast, 3 pencil gauges again performed better than the more expensive dial and digital models. They even outperformed gauges specifically made to withstand chloride corrosion.

The Alberta Farm Machinery Research Centre is publishing a detailed report on tire gauge testing. It explains the performance of the various gauges tested.

### Keep A Reference Gauge

Meanwhile, Turner offers these general recommendations:

- The Superex, Motomaster, and Bridgeport 40-402 pencil-type gauges at between \$6 and \$9 had the best performance of the 10 tested, although even among these, there was variability in certain aspects.

- Buy 2 new gauges at a time. Have them both tested for accuracy before they're actually put into use. Finding a testing centre may be difficult. One possibility: a home economist or test kitchen with access to equipment used for testing pressure cookers. It also works on tire gauges.
- Once you know the gauges are accurate, put one away in a clean dry location. Use it as a reference gauge in the future.
- Take good care of the working gauge. After each use, store it in a clean environment.
- If a gauge is used on liquid-ballast tires, make sure it's thoroughly cleaned and dried after each use.
- It's not uncommon for tire pressure to vary 5% during a day. A psi reading may

be slightly higher in the afternoon than in the morning. If the difference is more than 5%, check your working gauge against your reference gauge. If the reading is out, replace the working gauge with a new one that's been tested for accuracy (against your reference gauge).

If all this seems like a lot of fuss over a \$10 gadget, think about the cost of new tractor tires. Getting maximum wear and performance out of each set is worth the investment of a little time.

For the full tire gauge test report, contact the Alberta Farm Machinery Research Centre, 3000 College Drive, Lethbridge, AB. T1K 1L6 (phone 403-381-5729).

(Reprinted with permission from *The Country Guide*, Vol. 113, No.3, March, 1994)

## GTI RESEARCH HILITES

# Conservation Club Research Funding

The Sports Turf Association joined with several other Turf Associations in forming a Rural Conservation Club which has enabled Dr. Gary Kachanoski, Dr. Terry Gillespie and Dr. Paul Voroney of the Univ. of Guelph and Ms. Pam Charbonneau, turf specialist with O.M.A.F., to receive the first major research grant for work at the Guelph Turfgrass Institute. Funding totalling \$255,600 will be made available for research on 'Water and Chemical Systems for the Turfgrass Industry'.

The quality and use of rural water resources affects the lives of all rural and urban communities. The Turfgrass industry is a significant part of Ontario's Agribusiness and can have a significant impact on how our land and water resources are utilized. Little information is available regarding the impact of existing management systems on water use, and the quality of water leaving the site.

The objectives of the three year study are:

- To measure the quality (nitrate, pesticides, etc.) and amount of excess drainage water under conventional management systems for turf.
- To demonstrate/compare the impact of innovative water conserving irrigation systems on the amount and quality of drainage water from turf.
- To demonstrate/compare the impact of innovative chemical management systems on the quality of drainage water from turf.

The benefits of the study to the turfgrass industry will be to provide data from which more efficient chemical and water use programs can be designed which will reduce the risk of off-site environmental impact to ground and surface water and allow the turf manager to be in compliance with environmental laws. The benefits to the rural and urban communities will be to assure better

quality drinking and recreational water and to provide a better understanding of the effect of chemicals used in the turf industry on the domestic water supplies. Lastly, for all concerned the study will provide information which will aid in the conservation of water in both the urban and rural communities through innovative irrigation scheduling.

The overall approach to the project will be to make detailed measurements of the amount and quality of drainage water under conventional and innovative irrigation/chemical input systems at the field plots of the Guelph Turfgrass Institute. In addition six sites will be selected where intensive monitoring will be conducted under conventional management systems to give baseline values of water quality over a range of soil/site conditions.

Depending on the results of the measurements at these sites, changes in the management will be implemented based on the detailed work at the Turfgrass Institute. This could involve changing irrigation scheduling procedures, changing amounts/types of fertilizer or pesticide, or both.

Conventional irrigation scheduling based on set timing of constant amounts of applied water will be compared to applications amounts and timing based on estimated evapotranspiration rates from detailed meteorological information. Several soil indexes of water, such as tensiometers, dryness sensors and TDR (Time Domain Reflectometer) probes will also be used. The cost and effectiveness of various meteorological based systems and the soil sensor will be compared to determine the simplest system necessary to implement a good water conserving irrigation schedule.

With less water moving through the root zone, less chemicals will be added to the water supplies.

## UNDERSTANDING TURF MANAGEMENT

The twelfth in a series by

R.W. Sheard, P.Ag.

# THE FERTILIZER ACT

Turf managers in Canada are fortunate to have a Federal Government Act to regulate the sale of materials used to provide plant nutrients for turf. Whereas in the U.S. the regulation of fertilizer materials may change from state to state, Canadian regulations apply uniformly from coast to coast.

The Act, 'for the regulation and control of agricultural fertilizers' is administered by the Plant Products Division, Fertilizer Section, Agriculture Canada. A knowledge of the implications of the Act is something every turf manager should have.

The Act states that 'no person shall sell, or import into Canada, any fertilizer or supplement unless the fertilizer or supplement has been registered as prescribed, conforms to prescribed standards and is packaged and labelled as prescribed'. Essentially this statement means the user is protected against potential health hazards, fraud in marketing, and is provided with a fair marketplace and has the assurance of the purchase of effective products.

The act interprets a **fertilizer** to be 'any substance or mixture of substances containing nitrogen, phosphorus, potassium, and other plant food, manufactured, sold or represented for use as a plant food'. On the other hand, the Act interprets a **supplement** to mean 'any substance or mixture of substances, other than fertilizer, manufactured, sold, or represented for use in the improvement of the physical condition of the soil or to aid plant growth or crop yields'.

The **label** on a fertilizer container is an important item because it contains much valuable information on the correct use of the material. The label is defined to mean 'any legend, word, mark, symbol or design applied or attached to, including in, belonging to or accompanying any fertilizer, supplement or package'.

The Act divides the plant nutrients into two categories - major plant nutrients

which are nitrogen, phosphorus, and potassium, and lesser plant nutrients which covers all the remaining nutrients required for plant growth. Organic matter in fertilizers refers to 'substances of animal or vegetable origin remaining after removal of the moisture and ash fractions' (ash means mineral material).

An important part of the label is the **grade** which refers to the **minimum percentage on a weight basis** of total nitrogen, available phosphoric acid and soluble potash, in that sequence, that is in the fertilizer. The grade is represented by three number which appear on the bag; such as;

**10-20-20.**

Thus a 25 kg bag of this material would contain 10% (2.5 kg) total nitrogen (N), 20% (5.0 kg) of available phosphoric acid (P<sub>2</sub>O<sub>5</sub>), and 20% (5.0 kg) of soluble potash (K<sub>2</sub>O).

Somewhat strange convention is found in the system of reporting the plant food content of fertilizers. It originated from the methods used by chemists in reporting analysis in the 19th century. Nitrogen was determined by a procedure known as the Kjeldahl method for total nitrogen and is reported as total N. Phosphorus was extracted from the phosphate rock with citric acid and was suppose to represent that fraction of the phosphate in the rock which was available to plants. Thus the terms 'available phosphoric acid', or sometimes 'citric acid soluble phosphate' are used. The chemists in those days always reported their analysis in the form of the oxides of the element, hence phosphorus is reported as P<sub>2</sub>O<sub>5</sub>. The fertilizer industry has retained the format because an analysis of 20% P<sub>2</sub>O<sub>5</sub> looks better than 8.7% P. Likewise potassium, which is soluble in water, is reported as soluble potash and as the oxide, K<sub>2</sub>O.

The methods of analysis used to determine the grade are carefully monitored

and are the latest methods published and approved by the Association of Official Analytical Chemists (AOAC).

A second category of nitrogen, recognized as important in the turf industry is called 'water-insoluble' nitrogen. This fraction of nitrogen is of particular interest for slow-release materials. *It is important to remember the category only applies to the nitrogen fraction of the fertilizer.* Specific procedures have been established by the AOAC for this purpose.

To protect the farming population in the early days of fertilizer use from companies selling low analysis materials such as a 2-8-8, the Act requires that all fertilizers shall contain not less than 24% of the major plant nutrients, nitrogen, phosphorus, and potassium. There are exceptions to this regulation, however, and they are

- a customer-formula fertilizer,
- a specialty fertilizer, or
- a fertilizer, the ingredients of which contain

(1) at least 50% animal or vegetable origin supping 25% of the nitrogen in the mixture in a water-insoluble form, and

(2) at least 18% major plant nutrients combined.

A customer-formula fertilizer is defined as a 'fertilizer prepared in accordance with a written formula that sets forth the name, amount and analysis of each ingredient, the fertilizer grade of the total mixture and the signature of the person for whose use for fertilizing purposes it has been prepared'. That means you can formulate a fertilizer for your specific use and have a company prepare a 'bulk blend' of the material without subjecting it to the 24% rule; but it is for your use only, not for resale.

A customer-formula fertilizer which contains a pesticide that is registered under the Pest Control Products Act is exempt from the registration only if the manufacturer (blender) provides the re-

gional office of the Agricultural Inspection Directorate with

- (a) a copy of the label or bill of sale, and
- (b) the name and address of the customer for whose use for fertilizing purposes the fertilizer was prepared.

A 'specialty fertilizer' means a fertilizer recommended for use

- (a) on household plants, urban gardens, lawns, golf course and nurseries,
- (b) in greenhouses, or
- (c) as a source of lesser plant nutrients only (micro nutrients).

This regulation is the reason that many of the turf fertilizers, such as 7-7-7, have been offered for sale. It would not fit the 24% rule, but the low analysis makes the potential for foliar burn and irate customers highly unlikely.

Other materials which are exempt from registration under the Act are the supplements sold for the correction of soil acidity and basicity. Thus limestone materials are not controlled by the Act. Furthermore organic materials such as peat, peat moss, sphagnum peat, bark, saw dust and other fibrous material sold for the improvement of the physical condition of the soil are not covered.

The 1985 revision of the Act addressed the registration of fertilizers containing slow release nitrogen. Section 10.3 of the Act states 'A mixed fertilizer that is represented on its label as being a slow release fertilizer consisting of Isobutylidene diurea (I.B.D.U.), urea formaldehyde, urea-form, or any other chemical compound having similar slow release properties shall contain at least 25% of the total nitrogen guaranteed present in the water-insoluble form'.

The inclusion of micro nutrients is also regulated. Where the label on a fertilizer container or representations made in respect of a fertilizer indicate that the fertilizer contains a micro nutrient such as boron, copper, zinc, molybdenum and manganese the Act states

- (a) such plant nutrients shall be present in sufficient quantity in the fertilizer to be efficacious for the purpose or purposes indicated on such label or in such representation; and
- (b) such plant nutrients at recommended rates shall not be present in toxic amounts.

Further, the Act requires the label contain the following cautionary statement;

**"CAUTION:** this fertilizer contains (*specify name of lesser plant nutrient*) and should be used only as recommended. It may prove harmful when misused."

Concerns about infractions of the Act should be addressed to the local office of the Plant Products Division of Agricultural Canada (blue pages in your phone book). If you register a complaint, inspectors from the Division will do the sampling of the product and submit it to the appropriate laboratory for analysis. They will also require shipping bills etc., therefore keeping a file on fertilizer materials purchased is essential.

For further information obtain a copy of "Guidelines to the Fertilizers Act" from your Plant Products Office.

To further protect the gullible, fertilizers represented to be used for foliar or seed application must have the following statement on their label - 'Only minor amounts of nutrients applied to foliage or seed are absorbed by plants. Foliar and seed treatments therefore supply only a portion of the three major nutrients (nitrogen, phosphorus, potassium) required for successful crop production. Such a product is recommended only for use as a supplementary source of plant nutrients to a basic fertilizer program that relates to the fertility level of the soil.'

As a result of the regulations of the Fertilizer Act, a fertilizer industry has developed in Canada which is highly professional and which provides the user with reputable products. Nevertheless there remains a fringe group who promote materials of dubious, if any, benefit to the turf. Always ask for their registration under the Fertilizer Act. If none is forthcoming, put your cheque book back in your pocket.

## NEW TURF VIDEO



The Ontario Ministry of Agriculture, Food and Rural Affairs, as part of their effort to reduce pesticide use in Ontario by the year 2002, has just released a video called "Integrated Pest Management for Turf". The video is 18 minutes long and introduces the principles of IPM, the importance of proper cultural practices, the basics of monitoring for turf pests, some specific turf insect monitoring techniques and the importance of record keeping. Also featured is the concept of degree days and key indicator plants for predicting insect life cycles and using this information to properly time pesticide applications. This video is an excellent training tool for golf course employees, municipal parks employees, lawn care applicators and master gardeners. The video is available on loan from OAF Audio Visual Library, Visual Communications Services, 52 Royal Rd., Guelph, ON. N1H 1G3, (519) 767-3681, FAX (519) 824-9521. The video can also be purchased by sending your cheque for \$18.00 (includes shipping, handling and taxes), payable to the Guelph Turfgrass Institute, 328 Victoria Road, S., Guelph, ON. N1H 6H8.

## A GRASS ROOTS' QUOTE

*A good laugh is like fertilizer—it doesn't do any good until you spread it around.*

-Anonymous





# ATHLETIC FIELD USE UP, BUDGET\$ DOWN

*Terry McIver, Managing Editor  
Landscape Management*

It's the best and worst of times for today's athletic turf manager, as declining enrollment at colleges and universities results in smaller or frozen maintenance budgets. The good news is that sports participation by more students and developments in turf seed, fertilizers, chemicals and equipment are moving forward at full speed. Artificial turf is also losing ground in baseball and football applications. It's just not safe.

Additionally, the NCAA has ruled that colleges must allow women's sports equal access to finances for development of scholarship programs.

"We're going to see a tremendous growth, institutionally, in field hockey, soccer, and softball, and its going to drive to some extent the way we plan the economics," says Tim Bowyer, a consultant with STN Sports, Inc. According to Bowyer, and some other athletic turf specialists, athletic field use will increase but there will be less dollars to maintain those fields, apart from the capital required to build them.

In good times and bad, the athletic field manager faces one constant: the turf. Your budget may shrink, your crew may be cut, your schedule may grow; but the fields have to look good - and play safe - every day of the week.

Economics make renovation or replacement decisions especially tricky.

"No one plans to fail," says Bowyer, "but we often fail to plan. You've got to organize your thoughts, and consider what you need. You must have a detailed plan, drawn to scale, that includes location of irrigation systems, outlets, water discharges and underground wires and pipes."

"We also want safety first," says Bowyer, in addition to an aesthetically pleasing field appearance.

A roundtable discussion during the most recent New York State Turfgrass Associa-



tion's annual meeting in Rochester, N.Y. addressed the challenges of the '90s.

Robert Deming, director of athletics at Ithaca College, says the injuries connected with artificial turf, at least among Division A football and baseball, means stadium conversions to natural turf will be a big issue in the coming years.

"Artificial turf has been found to provide less-than-ideal playing conditions," says Deming. Player safety is naturally one reason natural turf is preferred to artificial surfaces. The rising cost of medical care is another. Deming says most colleges saw the decline coming, but reality of numbers is still sobering.

Deming believes in using "creative prioritizing" of certain budget expenses. After an accident in which a player was cut leaping into a Cyclone fence in pursuit of a fly ball, Deming decided to cap the Cyclone fence around the field. To get the \$980 request through, he assigned a "safety related factor" priority to the item.

Post-season play in the college or high school ranks poses another challenge to maintenance budgets. Ithaca has often been in post-season baseball playoffs, and the solution, says Deming, is to add 20 percent to the following year's budget if post season play looks probable.

Communication between coaches and physical plant personnel and turf outsiders is a key element in the Ithaca plan. "there's

no such thing as infinite wisdom", says Deming who believes in tapping into the knowledge and insight of others in the business.

"You have the knowledge in your area," says Deming, "but you need to talk to the experts in the area of turf science. Seek answers and ask questions."

John Fik, grounds and landscape manager at Hobart College and William Smith College in Geneva, N.Y., has his hands full. Two colleges mean twice the challenges.

"Strike a balance between the needs of the coaches, safety of the players with the agronomic needs of the turf," says Fik, who uses field hockey as an example.

"Field hockey coaches are constantly striving for a very level surface, which is difficult to achieve in field hockey," explains Fik, who now uses a turf roller. "But rolling the turf too much can often impede percolation," warns Fik. "The surface is not going to accept much more water unless you aerify it. If it rains, the water just sits there."

The answer lies in compromise.

"We tell the coaches we will not roll the field under certain conditions," says Fik. "Luckily, an indoor practice facility makes the decision easy to deal with."

Fik says field hockey coaches also like a short turf height, from 3/4 to 7/8 inches, which gives him the willies. "Depending on the type of grass, that's difficult to do; you could be inviting weed and disease problems," says Fik. "so we overseed at certain times of the year to get it down to that height".

"We also bought a Jacobsen Tri-King reel mower. Marriott and two colleges each kicked in a third of the cost for the mower." To thin the turf, Fik's crew makes two passes with a Jacobsen sweeper and try to refrain from watering for three days.

Fik believes player safety is closely related to proper drainage. Identify the problem drainage areas, and work with the athletic department to outline a budget for gradual repair problems.

Donald Sauvigne, director of building and grounds services at Columbia University says the future of sports turf management "is going to be based on how well we manage the expectations of others. In order to manage the everyone's expectations, we have to educate them, and understand what their expectations are.

"The dilemma facing education is that nobody wants to hear our financial problems, but we've been meeting people's expectations for years, and we've become victims of our own success."

To best react to the enrollment crisis, which is likely to put a dent in field budgets, Sauvigne says every turf manager needs to understand and subscribe to the objectives of the university it serves.

"Understand the place of sports turf and the mission of the school when it comes to athletics. The turf manager is a member of the team in helping support those expectations."

The future of sports turf has never been brighter," says Jim Hornung, head groundskeeper at Pilot Field, Buffalo, N.Y. He points to expanding interest in women's sports and the growing interest in soccer as factors. Hornung says it's essential that we meet at least minimal construction and maintenance standards.

"We need to know what the soils are going to do, how they're going to play," says Hornung. "It's no different than what the golf course superintendents have been doing for years. They have a standard and they live by it."

Why do manufacturers fight? asks Hornung. "It's always Product A vs. Product B vs. Product C". Hornung would like manufacturers to work together more to solve common industry turf care problems.

"There are many tools we can use to meet expected maintenance standards. One aerifier or one sprayer may not be enough. There are no saviours in the equipment world."

"We must all give 100 percent and then some," urges Hornung, for two reasons: safety and aesthetics. He suggests field managers present their budgets a little differently to make the sale.

"Talk in cents per square foot rather than thousands of dollars for the entire field," suggests Hornung, to soften the blow of asking for big bucks.

[Reprinted from *Landscape Management*, Feb. 1994, pp.20,22.]

## The Green, Green Grass of Superdome

Maurice Oishi,  
*University of Guelph*

Trey Roger's thumb is greener than most. Inside the dim confines of (Pontiac) Michigan's Silverdome, he's grown a field's worth of real grass that will withstand the rigors of World Cup soccer.

The Michigan State University professor, who was keynote speaker this month at the Ontario Turfgrass Symposium on campus, was asked by the International Federation of Association Football (FIFA) to grow the field for this year's World Cup.

After a test match between Germany and England's national teams last summer, the field's first-ever use, it drew rave reviews from both the players and the FIFA. No small feat considering "the players were more interested in hitting the roof with the ball than about the field," says Rogers.

The Silverdome is one of nine U.S. locales to host the World Cup games this summer and it's the only domed site. Putting grass in the dome was an idea launched by FIFA. "If this works here," says Rogers, "it would be applicable around the world. And it was in FIFA's self-interest to expand the horizons of the game."

The dusky light in the stadium - only about 10 per cent of sunlight passes through the translucent dome - was the most obvious obstacle.

Rather than install massive banks of expensive lights, Rogers and his colleagues devised a now patented formulation of plant-growth regulators, which slowed the rate of growth. As low as the lighting was, it met the energy needs of the slowed-down plants, he says.

Another problem was that soccer, like most stadium sports, voraciously chews up the turf. In addition, to meet the needs of Silverdome users, the playing surface had to be removable.

Roger's team used 7.5-foot-wide hexagons of turf, each six inches thick and confined by a rigid form. The depth of the turf ensures both a soft and resilient surface; the shape offers short sides with a relatively large surface area.

These features ensure that the 3,000-pound sections can be moved into and out of the stadium with little fear of damaging the edges and relatively few seams between adjacent sections that players can trip on.

Beginning in March (1993), the forms were filled with soil in the Silverdome parking lot, then topped with California-grown sod. In June, the sections were moved into the stadium and laid out like interlocking bricks.

Rogers was delighted with the results. "You couldn't even see the seams after 36 hours". Twenty-three days, four soccer matches and a Jehovah's Witness conference later, there was little wear and even less yellowing of the grass. His success made newspapers across the United States. "It's not very often turfgrass is front-page news," he says.

Rogers expects the technology will continue to grow. Ten years from now, this'll be a dinosaur. We'll have different grasses and better parameters. This was just a starting point."

But the technology is far from outdated yet. For the moment, the grass sits snow covered in the parking lot, awaiting for its day in the dome.

[Reprinted with permission from 'AT GUELPH' Jan. 19, 1994]

# New Products & Services

A compilation of new products and services available in the sports turf field

## Bannerman Topdressers & Aerifiers

Bannerman offers three new aerifiers. The first is a gas-powered, walk-behind unit with three options in tines - coring tines, slitter tines, and Aerway shatter tines. The second is the Multi-Ject 400 with the same options in tines, but ground-driven and tractor towed or attached by a 3-point hitch. The third is the 6-foot Super-Ject with the same tine options. All tines are interchangeable and replaceable. The interchangeable tine system has the advantage of year long use with virtually no interruption of play.

The Bannerman Sports-Topper has a capacity of 1.5 cu. yd. and is hydraulically driven, either directly from the tractor hydraulics or using the tractor P.T.O. to operate the rolling floor and dispensing brush. Spreading width is 58 inches and a depth coverage can be precisely controlled from 1/16 to one inch. The double-

walled, aluminum hopper is very sturdy, but light, and surface pressure on the ground when loaded is 8 - 10 p.s.i. The treadless tires are mounted on compensating swing axels, ideally suited to fine-turf area such as golf greens.

## Take Home Turf Mats

Oseco Inc., the Brampton, Ontario based seed company is pleased to introduce an entirely new convenience product for the home and cottage owner.

"Take Home Turf" mats are made of recycled wood fibre and textile with a mixture of 30% Kentucky bluegrass, 40% fescues and 30% turf-type perennial ryegrass evenly distributed throughout.

Only certified Oseco seed varieties suitable for sun and shade are incorporated in the mats.

They are manufactured by Canfor, a 55-year-old, forest product company in British Columbia.

The mats are environmen-

tally friendly and easy to use. Canfor's research team worked closely with the Plant Science Department at the University of British Columbia in their development.

Oseco Inc. successfully tested the mats at its Brampton, Ontario test grounds prior to making a marketing commitment. The mats are 60 sq. feet in size and each roll weights just 8 pounds for easy handling.

The mats eliminate seed washout and provide a perfect distribution of the seed. They are also a great weed barrier allowing new growth time to establish.

## Greenscape Grass Seed

Pickseed Canada Inc. offers a new grass seed mixture targeted at both the home owner and the professional landscaper. It combines rapid establishment, 100% perennial grasses, desirable turf quality, and adaptability to a broad spectrum of turf use and management situations.

Rapid establishment, a critical concern, is achieved by using 30% Edge perennial ryegrass, together with 30% premium GroKoted Kentucky bluegrass and 40% creeping red fescue. The creeping red

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## New Products & Services

fescue adds shade tolerance to the mix and gives it persistence at low management levels. The premium Kentucky bluegrass provides traffic tolerance and good quality at high maintenance levels. The predominance of Kentucky bluegrass and Edge perennial ryegrass assures the quality level preferred in most turf situations. The recommended seeding rate is four pounds per 1000 square feet.

### Dol Turf Restoration

Dol Turf Restoration is a company dedicated to offering a comprehensive program of turf maintenance services. Among the services offered by the company are topdressing, overseeding, dethatching, sodding, standard aeration, water injection aeration, and verti-drain aeration. In addition bulldozing, fine grading and complete sports field construction can be conducted. The company is also prepared to carry out soil evaluation studies and develop fertility programs to provide the best sports fields possible.

The company is under the

directorship of Gord Dol who has 15 years experience in the turf industry, which includes sports turf restoration, roadside turf establishment, and erosion control.

### CYNTHIA Kentucky Bluegrass

Cynthia is a fine leaf Kentucky bluegrass that reaches its prime in mid-summer. Mid-summer is a tough time for bluegrass. Cynthia can keep out weeds such as crabgrass and milk spurge. Under the severe drought, and excessive heat of 1988 only Cynthia maintained its colour, density, and freedom from crabgrass, oxalis and milk spurge in trials at Minneapolis, MN.

Cynthia establishes fast! Fast establishment means less repair and down time. Cynthia is good for both repairing a damaged lawn and when a new lawn "specs" require grass cover within a limited time period. It exhibits improved resistance to dollar spot and to sod webworm.

Cynthia has narrow leaf blades. It's colour is a bright medium green. It is especially

satisfactory when used in mixtures with the newer finer textured perennial ryegrasses and fine fescues. Its texture makes it extremely compatible when repairing the density of lawns consisting of older bluegrass varieties.

For satisfactory results only moderate (maintenance) amounts of nitrogen and irrigation are needed. It is recommended for parks, athletic fields, schools and commercial turf as well as for home lawns.

In the 1988 National Turfgrass Evaluation Program, held at 27 locations in the U.S., Cynthia had a mean turf quality rating equal to or surpassing such well known varieties as Nassau, Eclipse, Merit, Monopoly, Gnome, Amazon, Mystic and Joy.

Cynthia is available from Rothwell Seeds, Lindsay, ON.

### Compu-spray Mosquito Control

Rittenhouse Sprayers introduces Compu-spray, an excellent new means of control for flying insects including mosquitos, black flies and

gnats. It hangs discreetly from a tree or post and requires no external source of power or water, yet gives effective control for over an acre. In trials conducted by the Univ. of Guelph, the Compu-spray reduced mosquito bites by 68%. Similar trials with electronic bug zappers did not show a significant effect. It's 3.75 litre tank lasts a week per fill and two 6-volt lantern batteries, included, last a season. This product keeps track of wind direction and time and will emit a fine mist spray no more than once per 12-hour period in any one wind direction. The spray is carried by the wind to kill mosquitos where they breed. It may also be set to exclude spraying for certain wind directions, for instance, when the wind is blowing towards a patio or building.

### The TORO HC4000 Aerator

The Toro Company has announced the new HC4000 mechanical coring aerator. This mid-size model is smaller than a fairway aerator and larger



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GORD DOL  
President

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## New Products & Services

than a dedicated greens aerator. The result is a high-capacity, highly maneuverable deep-coring aerator, designed especially for smaller, less powerful tractors.

According to Tom Fischer, Sales Manager for Turf Care - a Toro distributor - the HC4000 is for customers who need the added maneuverability of a smaller, tractor-mounted model. The HC4000 aerates tight turn-around spots like tees and greens, and infield areas using a lower horsepower tractor; making it an ideal aerator for golf courses, athletic fields, parks and school grounds.

The HC4000 has a capacity of aerating 0.8 acre/hour. The tractor-mounted design increases operator control for

turns within small, confined areas. A 25- to 45-horsepower tractor with hydraulic ports to raise and lower the coring head is required. It offers five different tines to penetrate to depths of 4 or 6 inches on a 6 inch tine pattern. Powerful crank arms are designed to withstand the rigors of various turf conditions. An all-gear drive, protected in oil, eliminates chains and belts. Also included are adjustable tire scrapers to remove accumulated soil from each wheel.



### Cushman 6150 Rotary Mower

G.C. Duke Equipment Ltd. announces the availability of the new Cushman 6150 Triplex Rotary Mowing system. The mowing system is available in 9 ft. 8 in. and 10 ft. 7 in. cutting widths. The unit features a 4-cylinder, 51 h.p. water cooled Diesel engine and individual lifts to each cutting deck. They are also equipped with a deluxe operator's seat, hydrostatic, 4-wheel drive and power steering.

### ParEx 29-3-6 Fertilizer

Vigoro Canada, Inc. has introduced a new fertilizer specifically designed for golf course roughs and park conditions. ParEx 29-3-6 with XC IBDU offers the opportunity to get IBDU performance in those turf areas where you would normally use an "ag" or SCU-based fertilizer. XC IBDU means the IBDU particles are larger than regular fairway grade. This offers the turf manager four to five months of residual feeding. ParEx 20-3-6 is offered at an economical introductory price and will save on application expenses with its extended release. Contact TurfCare at 1-416-836-0988 for further information.



**TOM FISCHER**  
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