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Waterside Landscape

Selecting plants suited to the shores of ponds, lakes, and streams.

By G. Douglas Pullman, aquatic biologist,
and Douglas Chapman, horticulturist,
Dow Gardens, Midland, Michigan.



Ponds, lakes, and streams are often highly prized amendments to the landscape. A great deal of effort is commonly devoted to keep them weed free. The management technology is now available at a reasonable cost to satisfy the most discriminating pond, lake, or streamside property manager.

Unfortunately, water features are sometimes managed or landscaped to appear out of place or "unnatural." A backdrop of upland plant types, e.g. trees, shrubs, or herbaceous perennials, may appear attractive, but the riparian has failed to support the biological sys-

tem by introducing plants not well-suited to the moist or saturated soils surrounding a typical water body.

A large number of very ornamental marsh/bog and water plants are commercially available that are well adapted to oxygen-poor, water-saturated soils or for cultivation in the water body itself. A pond or lakeside can be put into perspective by the careful selection of ornamental aquatic and marginal plants.

Site Selection

The best location for water

plants is any part of the landscape that is continually flooded or soggy. A lake, pond, or streamside is ideal, but marshy, lowland areas shouldn't be overlooked. Usually, these sites will already contain some aquatic plants, such as cattails and prudent weeding may go a long way to establish an attractive waterscape.

Plant Selection

Choosing the right water plant for a particular location depends largely upon plant habit. Figure 1 is a classification of water plants that we use. It is a good idea to



NEVER introduce any of the so-called "oxygenating plants," i.e. submersed and free floating/suspended plants, to a pond, lake, or stream. Many of these plants can become severe management problems once established and should be reserved for aquariums and garden pools where escapement to natural water bodies can be strictly controlled.

Water Lilies

Without question, the royal family of the water plants is the water lily family. Hybridizers have developed plants bearing flowers of

nearly every hue imaginable. There are hardy and tropical day blooming varieties as well as exotic night blooming tropicals. The hardy hybrid water lilies at the Dow Gardens bloomed from late May through October, 1982, a display rivaled by few other plants. Select only the hybrid varieties as some of our native varieties, such as the White Water Lily or Cow Lilies, tend to be more aggressive and could potentially become a management problem. We generally recommend the following hardy water lilies to beginning water gardeners:

'*Chromatella*'-A very hardy variety with brown spotted leaves and bright yellow flowers

'*Marliac Rose*'-Rich green leaves, rose-colored flowers with yellow stamens, very floriferous

'*Rose Arey*'-Pure pink flowers

'*Attraction*'-Vigorous, red flowers. The lotuses are very striking but may be too aggressive in natural lakes and ponds; therefore, their use should probably be avoided.

Water Interface Plants

The continually moist or flooded soils at the water's edge are the locations for marginal and emersed

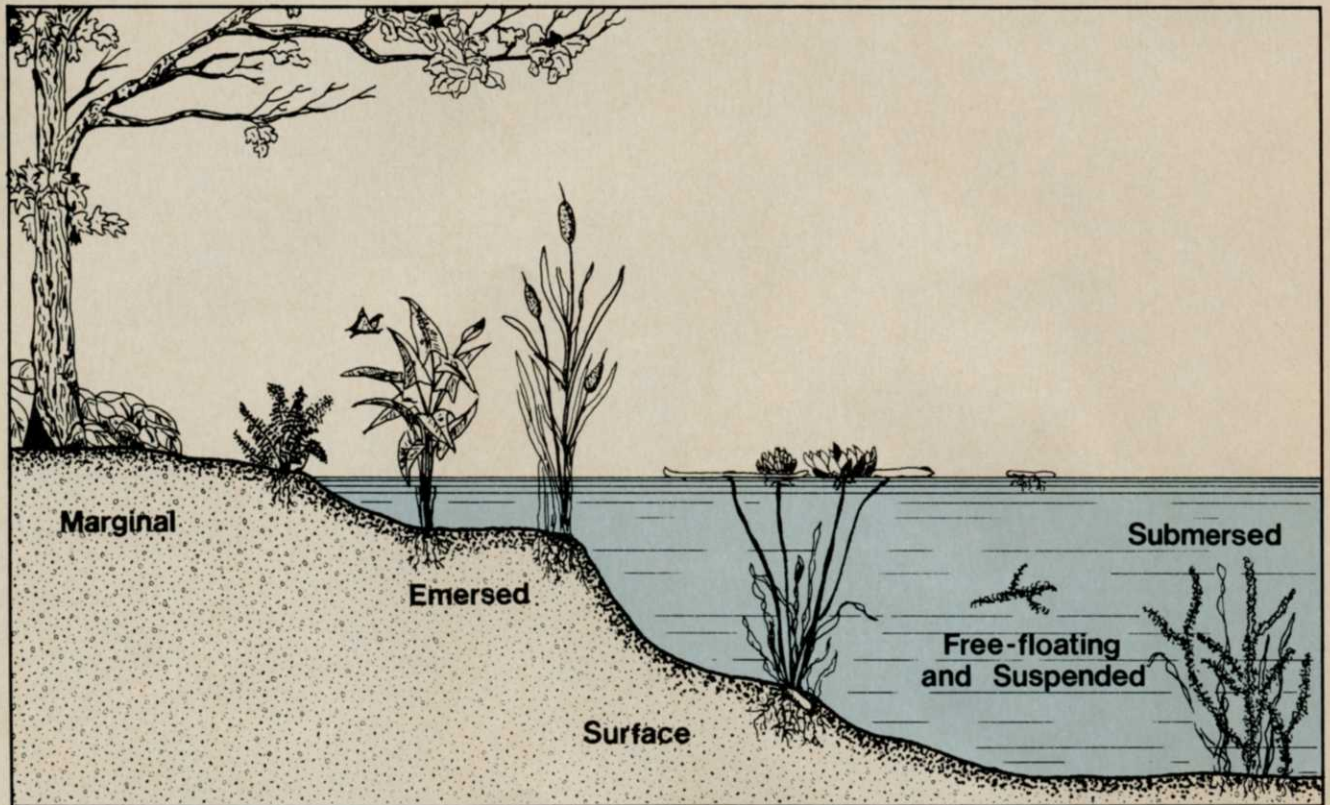


Figure One. Classifications of waterside plants.

plants respectively. Consider the Blueflag Iris for emersed planting and Louisiana Iris and Siberian Iris for marginal planting. Yellowflag is an exotic and can be difficult to control; therefore, it is not recommended.

Variiegated Sweet Flag is a beautiful foliage plant with green and white striped "iris-like" leaves. Arrow Arum is the finest of the arrowhead group with its compact habit and striking veination. Both the Arrow Arum and Sweet Flag are good for either emersed or marginal culture.

Cardinal Flower is known for vibrant red flowers and is a good marginal plant. Bog Bean has attractive white fringed flowers and will thrive in the water and on wet mud, making it a good ground cover. Also consider Bunchberry as a marginal ground cover. Pickerel Wood is valued for its foliage and blue flower spikes in the emersed zone. A favorite, because of its early yellow flowers, is Marsh Marigold and a double-flowered variety is now commonly available.

Other common plants that thrive in moist soils include *Hosta*, *Astilbe*, selected *Mimulus*, prim-

roses, and impatiens. Avoid Modern's Pink and Flowering Rush as both are exotic and have a potential to become serious pests.

Many ferns will also complement the riparian landscape. Cinnamon Fern and Royal Fern are two good choices.

It is always a good idea to consider the impact of deciduous leaf fall in water systems. Therefore, place deciduous shrubs and trees sparingly on the water's edge or, even better, at a "safe" distance from the shore (consider, also, wind direction).

A number of shrubs will thrive in saturated soils, such as Redosier Dogwood, Hibiscus or Swamp Mallow, Sweet Pepperbush, and pussy willows. Other worthy shrubs are in the genus *Spiraea*.

The weeping willow is generally considered the classic tree in the riparian landscape. It does require some maintenance because it drops a great deal of debris on the landscape and water. There is quite a variety of trees worthy of riparian consideration. Tree selections fall into three groups, according to the ability of the tree to withstand varying periods of root crown

inundation or low soil oxygen.

Swamp Species

Outstanding "swamp trees," or those typically growing in standing water for most of the year, are Dawn Redwood, Bald Cypress, the larches, Eastern Redcedar, and European Alder.

Flood Plain Species

Flood plain trees are those found in flood plain areas, being able to withstand periods of root crown inundation, lasting several weeks during the growing season. Representative flood plain species are the Red Maple, Silver Maple, White Ash, and Eastern Redbud.

High Water Table Species

The final tree group is comprised of those species that thrive in well-drained soils yet require a high water table. Consider River Birch, Paper Birch, Hemlock, and European Beech for such sites.

Appropriate plant selection for pond, lake, and streamside areas will not only assure greater plant vigor but will also make a water feature an even more exciting and natural part of the landscape. **WTT**



New Product Roundup

If you are still using tractor belly mowers, trim mowers for medium-sized lawns, or slow corers, you're not as efficient as you can be



By Bruce F. Shank
executive editor

Landscape managers can reap the benefits of an unusual number of product developments in the coming year. Unlike some industries, where product changes are a new paint job or body style, the changes in the professional landscape management market can be linked directly to increased efficiency and better performance.

Much of the change resulted from increased manufacturer interest in the landscape management market as agriculture, consumer lawn and garden, and construction markets became less reliable.

The continued strength of the golf market and the growing importance of the lawn care mar-

ket represent a good hedge against fluctuating markets for manufacturers. They can count on steady product sales, despite a lower overall sales volume. As one John Deere dealer from Mississippi said, "We have to sell 20 professional mowers to make the same profit as one combine, but we haven't sold many combines the past two years."

The chemical market has expanded bullishly into specialties, which include professional turf and tree products. This represents a new commitment by national chemical companies to low volume products.

At the same time, regional reformulators are playing a greater role in marketing products for national chemical manufacturers. Custom blending of fertilizers and herbicides for specific

1. Jacobsen Walk-Behind Rotaries, circle 200.
2. John Deere Walk-Behind Rotary, circle 201.
3. Toro Groundsmaster, circle 202.
4. Ransomes Riding Out-Front Rotary, circle 203.

regions is growing. If this trend continues, national manufacturers may sell much of their product to regional reformulators as components rather than final product.

Registration of new chemicals at the Environmental Protection Agency has slowed once again as new Administrator William Ruckelshaus reviews the state of his agency, environmental groups make trouble on a local level, and the courts settle a number of crit-



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5. Excel 261 with Collection System, circle 204.

6. Cushman Frontline with Collection System, circle 205.

7. Jacobsen HF-5 with Baskets, circle 206.

8. Toro Reelmasters with 5, 7, and 11 blades, circle 207.

9. Bunton Motorized Spreader, circle 208.



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ical cases. National manufacturers relying on state local needs labels the past few years to speed introduction of new pesticides or expanded uses of existing products, have been followed by environmentalists. A great part of the defense of pesticides is now at the state and local level.

Nevertheless, significant new products successfully reached the market in 1983 which give landscape managers a new dimension to chemical programs. The secondary benefits of chemicals have also been realized more in 1983 than previous years. For example, Embark (a growth regulator) from 3M and Rubigan (a turf fungicide) from Elanco have provided help in the control of *Poa annua* on golf course fairways.

We have grouped the following new products by their benefits to the industry. You will see that the Green Industry was making progress while other industries were standing still. You can take advantage of this progress in the coming year.

Mowers Cut Job Time

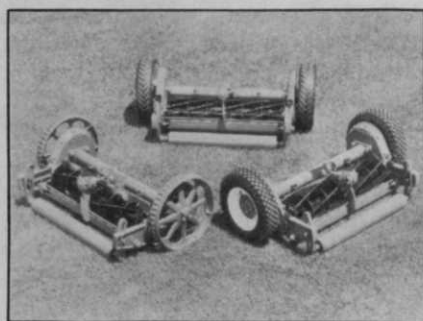
Without a doubt, the mower market underwent the most change in 1983. Responding to concern by maintenance contractors over labor costs, mower manufacturers introduced highly maneuverable walk-behind and riding out-front rotary mowers. The 21-inch trim mower and the tractor belly mower have nearly been relegated to the consumer market as a result.

The out-front walk-behind rotary from 36- to 60-inches wide was not a new concept. Until 1983, many considered them ugly ducklings of little consequence. Then, a few experimenting contractors found they could virtually replace trim mowers and cut job time in half. The word got to manufacturers and they responded quickly with improved versions. This past August, the number of out-front walk-behind rotary mower manufacturers doubled.

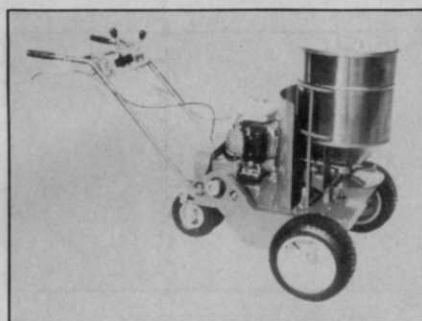
The riding out-front rotary with sulky has matured into a full-scale, highly maneuverable



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mower that can whirl around trees or glide along fence rows and flower beds in minutes instead of hours. Although the riders do not match the walk-behinds in maneuverability or low price, they are a great improvement over previous large rotary or reel mowers.

Both the walk-behind and the riding out-front rotaries can be credited with upgrading the image of the mowing contractor. They have replaced equipment which appears no better to the customer than what he has in his own garage. The professional appearance of the new technology, as simple as it may seem, goes a long way toward improving the reputation of the mowing maintenance company to its customers. Not only do the new mowers reduce labor costs, they improve the image of the industry.

Another rejuvenated, surprisingly successful type of mowing equipment has been the reel gang. Hydraulics and an eleven-blade reel option are bringing new

life to reel gangs for large turf areas. Reel gangs have been able to provide a wider cutting swath than rotaries and are less likely to scalp. They are inexpensive compared to some of the recently introduced reel mowers costing more than \$35,000. Sharpening has been a stumbling block for mowing contractors.

Clipping removal is gaining acceptance in both golf and lawn care sectors. Lawn care companies see clipping removal as a partial solution to thatch. Golf course superintendents are experimenting with clipping collection to remove *Poa annua* seedheads. Both seem to accept the extra trouble of handling clippings and replacing nutrients removed with the clippings.

Equipment companies have responded by developing collection systems which dump quickly and easily, such as Cushman's Front Line mower, Excel's collection system, and John Deere's entries into professional mowing maintenance this year. Jacobsen

recently introduced baskets for its HF-5 light-weight fairway reel mower.

Spreaders and Sprayers

Lawn care has caused considerable attention to application of both wet and dry products on turf. Making one or both methods meet the speed and accuracy requirements of commercial lawn care has been the job of resourceful lawn care businessmen and manufacturers.

The effort to improve the flexibility and efficiency of liquid systems has centered around injecting insecticides, extra herbicides, extra nutrients, and fungicides into the flow from the main tank on the truck. This enables the operator to make needed adjustments on site by controls either on the truck or on the spray gun instead of making a second application.

Low volume systems are also being tried. By using higher concentrations of chemicals in less water, the lawn care company can use smaller, more fuel-efficient tank trucks.

Dyes to show spray pattern are being introduced for golf courses and possibly lawn care. These help prevent missed areas or over-application.

Dry technology has also advanced. Standard centrifugal spreaders provide varying application rates depending on the walking speed of the applicator. Lakeshore and Bunton have introduced motorized centrifugal spreaders so application speed is the same regardless of the applicator. This allows precise application of dry chemicals where control of rate is critical.

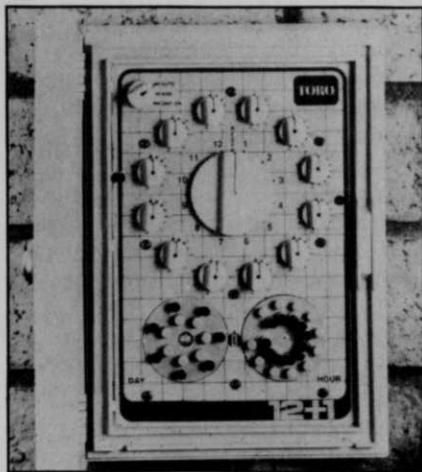
Speeding Up Coring

The importance of coring or aerification of turf to solve compaction, drainage and thatch problems has been known and used for golf courses, but the technology has been too slow and impractical for lawn care.

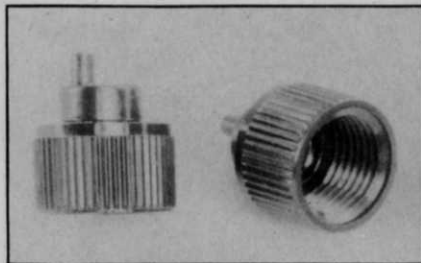
Drum aerifiers pulled by tractors or turf trucksters are an option used by golf course superintendents for fairways. Still, some superintendents use the



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10. Ryan Ride-Aire, circle 209.

11. Toro 12+1 Controller for Drip and Normal Irrigation, circle 210.

12. Rain Bird Shrub Bug Compensating Emitters, circle 211.

slower, greens aerifiers for fairways. Small, walk-behind aerifiers, as made by Dedoes, Ryan and Turfco, have had some impact on lawn care.

Ryan just introduced a faster, riding aerifier called the Ride-Aire. The trailerable unit can core more than 12,000 square feet per hour and fits through standard fence gates. There should be increasing interest by manufacturers in lawn care type aerifiers in 1984.

More Versatile Vehicles

There is new respect for the turf vehicle market by manufacturers of golf car and industrial vehicles. As a result, the Green Industry will have more models to choose from in 1984.

Part of this movement will be the attachments available for turf

vehicles as hydraulics are designed into them. Jacobsen engineers are working hard to design reliable multi-use hydraulic systems for its turf vehicles. Mower manufacturers are preparing to defend their turf against the golf car manufacturers who have entered the heavy-duty turf vehicle market. Cushman/Ryan may have set an example by getting out of the golf car business in favor of the turf vehicle and attachment market. Its introduction of the Front Line mower last year would support this idea.

A relatively simple addition of a Vicon spreader to a turf vehicle received considerable attention at turf shows this past year. There is more to come.

Irrigation Changes Due

Turf irrigation manufacturers

were relatively quiet in 1983 with most product introductions in the area of controllers. The consolidation of Buckner with Royal Coach, a nearing cut-off for use of Colorado River water in the Los Angeles area, and drought in many parts of the country may have held the market back this year.

Meanwhile, smaller companies have been making steady advances in drip irrigation. As water restrictions are put in force, drip may be the most sensible irrigation for trees and shrubs.

Large irrigation companies are now paying more attention to drip irrigation.

Still, the bigger market is turf. When the decision is made to invest in turf, irrigation becomes almost a necessity. As water gets more expensive and less available, older inefficient systems will have to be improved.

The controls are no longer the limiting factor in irrigation. Now, the primary limitations are the pipe, valves, and heads. Emphasis will have to switch to these components. Look for water-saving concepts in these areas in the near future.

Chemical Tools Increase

Considerable progress has been made across the board with chemicals, especially with insecticides and fungicides. The emphasis has been on efficacy and residual period in both cases.

Although there is still no such product as a single, total spectrum fungicide, advances have been made with dollar spot, Fusarium, brown patch, and Pythium. Residual period has been stretched from 10 days to nearly six weeks for some fungicides. New names in fungicides are Bayleton from Mobay, Rubigan from Elanco, Subdue from Ciba Geigy, and Vorlan from Mallinckrodt. Rhone Poulenc has restored the Chipco name for its 26019. Older fungicides are being mixed with newer ones to improve control. TUCO Upjohn's Acti-Dione can now be mixed with Bayleton 25SP or Daconil 2787 from SDS Biotech. Much of the skill in using

continued on page 30

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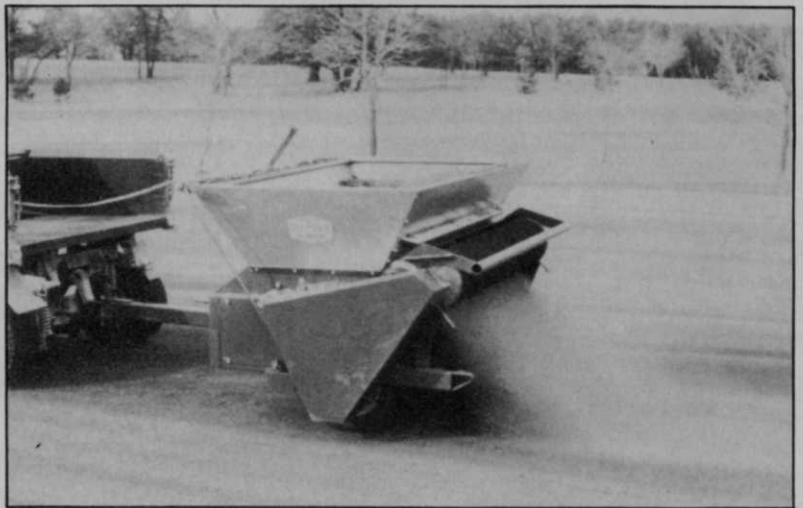
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13. Mobay's
Oftanol Insecticide,
circle 212.

14. Turfco Mete-R-matic II
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fungicides is knowing how to mix them safely to get the best overall control of diseases. Look for a new fungicide from Ciba-Geigy next year called Banner.

Oftanol was the big name in insecticides this year. Mobay has instituted a major program to sell Oftanol to both national and regional reformulators in the coming year. Oftanol's success is linked to both high degree of control and nearly season-long residual. Ciba-Geigy is very close to registration with Triumph, another highly effective, long-lasting insecticide. Ortho/Chevron is waiting to hear from EPA on a turf label for Orthene. Dymet from Mallinckrodt is already on the market. Dursban from Dow has an expanded label and new formulations pending.

Zoecon Corp. introduced a new insecticide for ornamentals this year called Mavrik Aquaflow. The insecticide is labelled for use outdoors and indoors on non-food plants. It has low phytotoxicity and is effective against mites and other major pests.

The major thrust of herbicide changes this year was to improve control of specific problem weeds such as crabgrass, goosegrass, annual bluegrass, and nutsedge. Stauffer is very close to label approval for Devrinol which has shown good, long preemergence control of crabgrass and goosegrass and some control of Poa annua. BFC, now a subsidiary of Schering AG, has developed Prograss for Poa annua control.

Elanco has discovered its fungicide Rubigan has a secondary benefit of Poa annua control as has 3M with Embark. Ciba-Geigy now has a new label for Princep for annual bluegrass control in warm-season turf.

BASF Wyandotte has expanded the Basagran label for nutsedge control in warm-season turfgrasses. Rhone Poulenc has received a new label for its Buctril for broadleaf weed control in turf. Union Carbide recently introduced Weedone DPC for broadleaf weed control in turf.

There were two developments in industrial, total kill herbicides this year. American Cyanamid introduced Arsenal which lasts several months in the soil to control weeds that germinate after application. PBI/Gordon assumed the marketing of dichlobenil this year giving it the new name Dyclomec.

Elanco's Treflan label has been expanded for preemergence grass and weed control around ornamentals. Poast is a new postemergence herbicide from BASF Wyandotte for grassy weeds around ornamentals.

Growth regulators are still in the future of turf. 3M is giving many seminars nationally for its Embark. Elanco should hear from EPA soon on its Cutless growth regulator. Ciba-Geigy and Monsanto are also working on growth regulators at this time.

Turf Varieties Grow

Fine-leaf tall fescues are the news

in the turf seed business. The number of varieties keeps growing and includes Falcon, Jaguar, Rebel, Clemfine, Houndog, Apache, Brookston, Mustang, and Olympic. Seed production of these new varieties was hurt by weather this year but there are limited quantities if you speak up early. These grasses exhibit good drought tolerance and meet the needs of many lawns in the transition zone.

Next to the tall fescues, the action is in perennial ryegrasses. These grasses have made strides in winter hardiness and mowability. They are fast germinating and extremely useful for all types of overseeding. We are now seeing the results of second and third generation research with perennial ryegrasses, such as Manhattan II and Citation II. So, improved perennial ryegrasses keep getting improved.

Penneagle is now a partner to Penncross for bentgrass greens. Many golf courses are renovating after the Toronto bent disaster two years ago at the Western Open in Chicago.

Kentucky bluegrasses are still coming despite an oversupply threatening to make prices fall. The results of the first National Kentucky Bluegrass trials have given some interesting results comparing old and new Kentucky bluegrasses. Unfortunately, these results are not for publication. You may ask your seed supplier for the results of the trials conducted in your area.

WTT