November/December 1987

Our 62nd Year

A PATCH of GREEN

HAPPY HOLIDAYS

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BORDER CITIES
MICHIGAN

GOLF COURSE SUPERINTENDENTS ASSOCIATION OF AMERICA

OFFICIAL PUBLICATION OF THE MICHIGAN & BORDER CITIES GOLF COURSE SUPERINTENDENTS ASSOCIATION

Our best to you!

MERRY CHRISTMAS

TURFGRASS

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PRESIDENT'S MESSAGE

With the end of 1987 closing out my term as President of the Michigan and Border Cities Golf Course Superintendents Association I would like to extend my appreciation and thanks for the support and encouragement I received from all of the members of our organization. Also, Bloomfield Hills Country Club has been most supportive of my duties as President and has allowed me to take the time to cimmit to the Association. The past two years have been a great experience for me and I enjoyed the challenges and rewards the position offered me. I would especially like to thank the Board of Directors for the excellent job they have done the past two years. Withour their efforts many of the successful programs accomplished would not have been realized.

The MBCGCSA Annual meeting held in October at Maple Lane Golf Club was well attended with 42 golf course superintendents voting in the elections of new officers and directors. I would like to congratulate Charlie Gaige on his well deserved election as our next President. I have worked along side Charlie the past seven years in MBCGCSA affairs and I know his leadership abilities will be a big plus for our organization. Also, Tom Mason was elected as our next Vice-President and Jon Maddern as Secretary-Treasurer, both very capable individuals with a lot to offer the MBCGCSA. Gary Thommes was elected to the Board of Directors this Fall and I congratulate him on his first term as Director.

I am looking forward to 1988 with great enthusiasm knowing our Association is in good hands. Everyone, have an enjoyable holiday season.

Sincerely,
Kevin Dushane
President, MBCGCSA

"A PATCH OF GREEN"
Published Bi-Monthly by the
MICHIGAN AND BORDER CITIES GOLF COURSE SUPERINTENDENTS ASSOCIATION

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1987 At a Glance

Once again the Michigan & Border Cities Golf Course Superintendents Association presented a busy schedule of Golf Outings, educational meetings, fund raisers and social gatherings. The Board of Directors, led by President Kevin Dushane, is to congratulated for an outstanding year.

Following is list of events for 1987 -

JAN. 6 - Meeting at Bay Pointe Golf Club - a discussion about GCSAA
MAR. 2 - Salt River Golf & C.C. - the IRS and afternoon of bowling.
MAR. 26 - Detroit Golf Club - joint meeting with GAM
APR. 27 - Essex C.C., Windsor, Ontario - joint meeting with Canadian Superintendents
EXTRA! APR. - Opening the baseball season at Tiger Stadium
MAY 6 - Special Olympics fund raiser at Links of Pinewood
JUNE 1 - Pine Knob Golf Club - golf and educational meeting
JUNE 30 - Burroughs Farms - Golf meeting
JULY 21 - Port Huron Golf Club - joint meeting, golf
AUG. 18 - Kensington Metro Park - Annual picnic
SEPT. 3 - Field Day at MSU
SEPT. 14 - Forest Akers Golf Club - 1st Annual State of Michigan Golf Course Superintendents Golf Championship
SEPT. 28 - Forest Lake C.C. - Annual MBCGCSA Golf Championship, also GCSAA guest speaker
OCT. 5 - Annual Turfgrass fund raiser at 16 local clubs, dinner at Bay Pointe C.C.
OCT. 21 - Maple Lane Golf Club - Annual Meeting
NOV. 3 & 4 - Lansing - GCSAA Seminar on Construction
DEC. 5 - Barton Hills C.C. - Annual Christmas Party.

DR. JOE VARGAS OF MSU, left, RECEIVING MUCH APPRECIATED GIFT FROM PETER ROEHL OF MAPLE LANE GOLF CLUB. THE DONATION WILL GO TOWARDS THE CLARENCE WOLFROM CONFERENCE ROOM AT MICHIGAN STATE. MICHIGAN

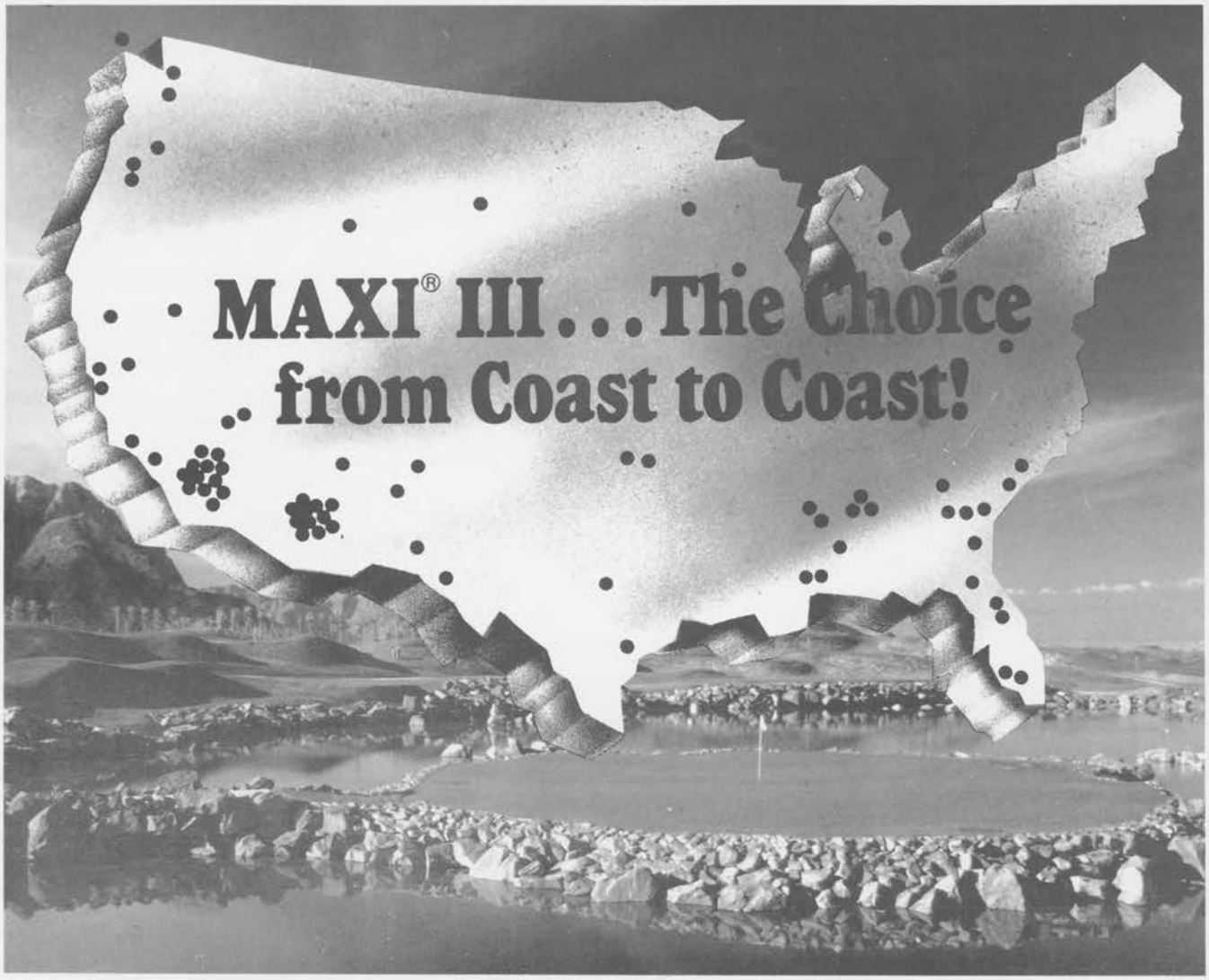
That makes sixteen functions available at attend. It offered something for everybody. Chairman of Education was Roger Gill. Thanks Roger.

Some of the highlights from the above events.
The hospitality room in Phoenix was a huge success - this is a joint venture with the other chapters of Michigan. We are looking forward to Houston.
Jim Timmerman noted that we gained 24 new members in 1987.
Clem Wolfrom received the prestigious Meritorious Award at the Spring Meeting with the GAM.
120 attended the picnic and enjoyed the Pig Roast.
Walter Wilkie donated $250,000 to MSU to initiate a training program of two year students in the Lawn Care Industry.
Peter Roehl, owner of Maple Lane Golf Club continued his generous support of the Clarence Wolfrom Conference Room at MSU.
The Special Olympics fund raiser at the Links of Pinewood raised $4,000. Thanks to Mrs. Kurt Kraley

CONTINUED PAGE 25

GLENN KORHORN, SUPERINTENDENT SALT RIVER GOLF & COUNTRY CLUB, CONTEMPLATING THE ELECTION.

JIM VLASSIS, left, WINNER OF THE CLARENCE WOLFROM TROPHY AND EARL PRIESKORN, OVERALL 1987 GOLF CHAMPION.



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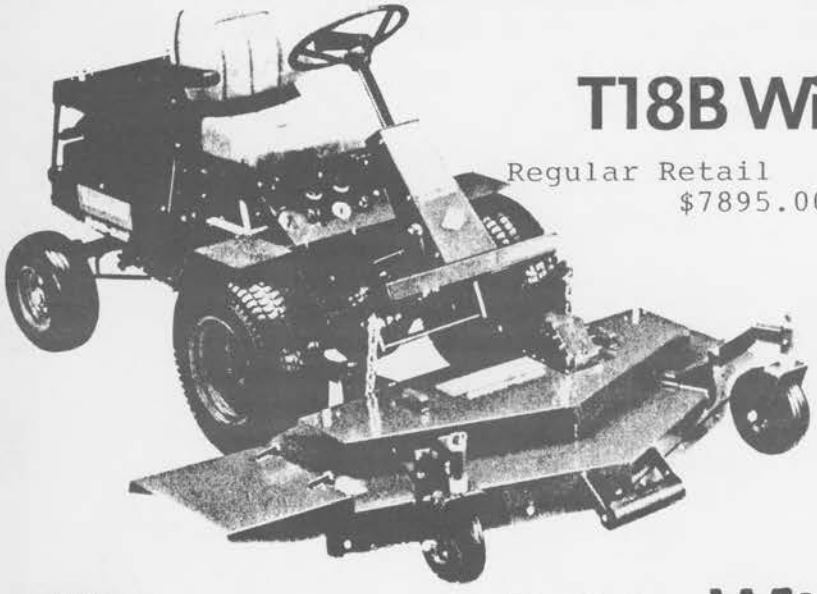

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Biological Control For Annual Bluegrass

East Lansing, MI - A new method of weed control, using biotechnology instead of chemical-based herbicides, may soon allow farmers, homeowners, and lawn care specialists to control annual bluegrass with a bacterium that is harmless to humans, animals and other plants.

"The bacterium is specific only for its host plant - it will infect only annual bluegrass plants," says David L. Roberts, the Michigan State University plant pathologist who discovered the bacterium. "The bacterium enters through small natural openings in the leaf blade and grows through the plant's vascular system."

Roberts discovered the bacterium when examining annual bluegrass samples to determine what caused the plants to die. This was the first time this strain of the Xanthomonas bacterium had been identified in North America. It could be new to the continent, or researchers may simply not have identified it in the past.

"At first I didn't even realize the potential of the bacterium," Roberts says. But after diagnosing the problem, he began to wonder if the bacterium could be of some benefit. Laboratory testing proved Roberts' suspicion that the bacterium could be used to control annual bluegrass.

After application, the bacterium begins growing within the plant, destroying its ability to transport water. After three or four days, the plant begins to wilt. After a week, the plant usually turns brown and dies, or it is suppressed to the point where it is no longer a problem.

When applied to lawns or other areas of mixed grasses, the bacterium does not affect other plants, regardless of the concentration, Roberts says.

"I suspect the bacterium is absolutely safe for use around humans," Roberts says. "Similar bacteria in the genus Xanthomonas have been found on vegetable and field crops that people have eaten for years without any problems."

Research shows that the bacterium is very effective in controlling annual bluegrass. Because it grows inside the plant, it does not have to compete with other microrganisms in the soil or on the plant's surface. This increases its ability to destroy the host plant.

Tests show it may take two or three applications per

CONTINUED PAGE 28

ANNUAL ELECTIONS

HELD AT MAPLE LANE GOLF CLUB
OCTOBER 21, 1987

The newly elected President of the Michigan & Border Cities Golf Course Superintendents Association for 1988 is Charlie Gaige, Superintendent of Lakelands Golf & Country Club. His Vice-President is Tom Mason, Superintendent of Birmingham C.C.

The newly elected Secretary/Treasurer is Jon Maddern, Superintendent of City of Farmington Hills.

Directors, elected for two-year terms are Gary Thommes, Superintendent of Red Run Golf Club and Ed Heineman, Superintendent of Waters Edge C.C. Ed was reelected.

Those remaining on as Directors are Jim Timmerman, Superintendent of Orchard Lake C.C.; Jay DelCamp, Superintendent of Katke Cousins Golf Course; Ken DeBusscher, Superintendent of Wabeek C.C. and Roger Gill, Superintendent of Pine Lake C.C.

Kevin Dushane becomes the President Emeritus, replacing Mike Edgerton, Superintendent of Meadowbrook C.C.

NEWLY ELECTED OFFICERS OF MBCGCSA FOR 1988. Left to Right, TOM MASON, VICE-PRESIDENT, JON MADDERN, SECRETARY/TREASURER, AND CHARLIE GAIGE, PRESIDENT.

NEWLY ELECTED DIRECTOR, GARY THOMMES AND RE-ELECTED DIRECTOR, ED HEINEMAN.

THE TEN CARDINAL SINS OF GREENS CONSTRUCTION

by
David W. Gourlay
Director of Golf Operations
Beacon Hall Golf Club
Aurora, Ontario

SEVERE HYDRATION DAMAGE RESULTING FROM POOR PHYSICAL PROPERTIES. PHOTO BY DAVID W. GOURLAY.

1. Using a rootzone medium with poor physical properties.

It is highly unrealistic to expect the turfgrass to perform to its potential if one or more of the physical properties is limited. Laboratories test the infiltration rate, moisture retention rate, pore space distribution and bulk density value to insure they meet your specific requirements. Turfgrass grown under ideal physical conditions will recover from stress at a higher rate than turfgrass grown under less than ideal conditions.

2. Using a rootzone medium without correcting and chemical deficiencies.

When looking at the chemical make-up of your rootzone medium, remember the word balance. In other words, avoid planting the turfgrass without correcting any chemical imbalances. It is always harder to correct any deficiencies after the turf is established. Avoid using calcareous sands if possible. These sands are usually extremely high in calcium which raises the pH of the rootzone to an unacceptable level. Also, in areas of acid rainfall, the calcareous sands will break down, and a deterioration of the physical properties will occur.

3. Using sphagnum peat moss.

Sphagnum peat moss is hydrophobic, relatively undecomposed, and has only a very limited amount of microbial activity in it. Being hydrophobic, it is extremely difficult to blend into the medium. Once blended, it has been shown to plug up the non capillary pore spaces (air spaces) due to its fibery nature.

4. Not including the apron in the green's construction

Always include the apron in the construction of the green. A 90 degree edge should be included to insure adequate moisture retention in the apron, as a wicking action from the heavier soil around the perimeter will dry out the apron. This will help to avoid hand watering in the hot summer months.

5. Using improper drainage stone.

Use only 3/8" - 1/4" of clean, clear pea stone in the drainage system. The purpose of the pea stone is to insure water drainage away from the rootzone medium, and to create a perched water table. Without the pea stone, the dry subsoil will draw water out of the rootzone medium which will lower the water retention of the mix.

6. Using a roto-tiller.

Never use a roto-tiller to on site mix your amendments for rootzone medium. A uniform medium can never be produced by this method. This procedure also produces a double-perched water table in your green's profile. The top roto-tilled medium has to become saturated before any water enters below into the untreated medium. This creates a more complex management program.

7. Sodding a new green.

Never sod a new green unless the sod is grown on **exactly the same rootzone medium** as the green. Sodding using a different growing medium will also produce a double perched water table.

Seeded greens can be put into a higher level of playability faster than sodded greens, at a considerably lower cost. Believe it or not!

CONTINUED PAGE 24

ENOUGH IS ENOUGH
OR
The last word on "Black Layer"

by Ted Woehrle

The Black Layer - What is it? What caused it? How do you get rid of it? How do you prevent it?

I have read more words about the subject, written by more confused people, than any subject since the great "ice sheet damage" debates of 1962.

More educational sessions have been presented around the country about the "Black Layer" than on any subject in recent memory. And still no answers to the above questions.

There are a few summations that one can make from all of the theories expounded.

All agree on one thing - Anaerobic conditions (anaerobics) are responsible for black layer. This is true whether the lack of oxygen was caused by poor construction or caused by poor management.

One of the more famous case histories at a famous resort course in Northern Michigan is perhaps a combination of both poor construction and poor management.

During a recent visit to this golf course, it was noted that a few cups on the greens were full of water (a high water table caused by trapped water). Definitely poor construction. On closer examination of the soil profile it was noted that a dense layer of soil at the surface covered the coarse sandy soil of the green. This layer was severely curtailing good air and water movement into and out of the soil. This combination most certainly caused ideal conditions for the "black layer" to form.

Two other courses that I visited had problems of black layer under sandy surfaces created by sand topdressing. The topdressing layer (about five or six years old) was made up of two distinct layers of sand. Again a finer more dense layer on top of a coarse layer.

The other course had a mixture of sand topdressing mixed with aerifier plugs ground up and worked into

CONTINUED PAGE 23

TURF TALK FROM "OLD KOZ"

The trade magazines and chapter newsletters are featuring the so-called black layer. It's nothing new.

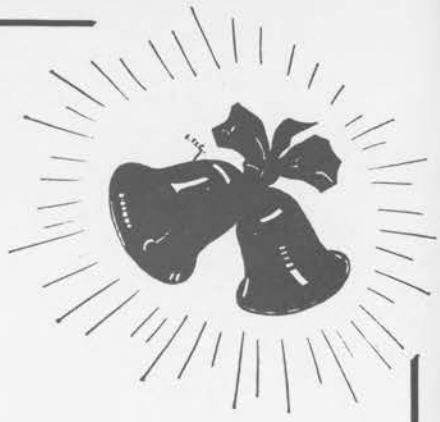
Old Koz investigated the black layer in Georgia in 1973-74 and with the help of a very capable microbiologist we looked into both methane and hydrogen sulfide producing bacteria. In actuality we found that the black layer is produced by hydrogen sulfide producing bacteria which are anaerobics. We found these to be of the genus Desulfovibrio, a finding which has been recently corroborated by reseachers at Michigan State University.

My original suspicion was that such organisms existed and were responsible for the black layer and that greens sands from a single river source harbored the organisms. We were right! Since then we have come to realize that these organisms may be omnipresent. A that time at least five golf courses in the Atlanta area had greens constructed from this single source. The original course investigated still has this problem and on of the others came down with the condition last year. The others may have had the condition in intervening years.

As far as black layer in Georgia is concerned now, I think the main thing is to determine if in fact the Desulfovibrio bacteria are not a product of the poultry industry. Anyone willing to support this knd of research? But then, even that research is not really necessary. I know I'll be straining some friendships when I point out (as I did with the Spring Dead Spot in 1974) that the black layer is caused by mismanagement, which may have roots in pre-construction. Turf managers get black layer when they allow anaerobic conditions to exist in their soils.

To deny sulfur to the grass, to alter phosphorus levels, to place excessive emphasis on control of algae, is to promote mis-management of turf. The only prevention, and cure, for black layer is to make sure that soils are always well-oxygenated. That may require complete rebuilding of greens and replacing with soils passing tests for adequate percolation.

George M. Kozelnicky
Reprinted from **Georgia News, July/August, 1987**



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OUR PRESIDENT RUNS AND FINISHES MARATHON

by Ted Woehrle

On Sunday, October 18, 1987, Kevin Dushane, along with 3,000 others, ran in the 10th Annual Detroit Free Press Marathon. The proceeds from this charitable event were donated to Multiple Sclerosis, the dreaded crippling disease of many.

The race started in Windsor, Ontario, Canada on a cool cloudy day. The race wound through the streets of Windsor and after seven miles headed for the tunnel going under the Detroit River. As Kevin charged out of the tunnel he looked relieved and excited. He did say afterwards that the run through the tunnel was "a little spooky" and that he was glad to get out and see daylight and the good old US again.

KEVIN DUSHANE, NUMBER 565 RUNNING IN THE 10TH ANNUAL FREE PRESS MARATHON – AT THE 9 MILE MARK LOOKING STRONG.

About this time of morning, roughly an hour after starting, the clouds began to break up and the sun started to shine. The runners proceeded up Woodward for a short distance and turned back towards Michigan Avenue where they turned right and headed out past Tiger Stadium about four miles and then returned back past the stadium at about the 21 mile mark where Kevin began to look a little tired and sore.

It looked bleak for Kevin but he was able to summon additional energy and desire for the last five miles as he headed through town and out to Belle Isle where he finished in 3 hours and 43 minutes.

As he finished he was heard to say, "Never again. I'll never run another Marathon." Later that evening he went out and bowled three games in his Sunday night league. On the following Wednesday, at our annual meeting, he changed his mind and said that he can't wait until next year.

KEVIN – BEGINNING TO LOOK TIRED AT THE 21 MILE MARK JUST A LITTLE OVER 5 MILES TO GO.

I am proud to know Kevin and respect his desire and hard training preparing for this grueling event. He started last spring by jogging and running several miles a day and increasing the pace and distance throughout the summer. He also gave up smoking and adopted a very regimented diet.

It was quite an accomplishment. Kevin is the first personal friend that has ever run in a Marathon and finished. I'm proud of him. For those of you who do not know Kevin, he is the golf course superintendent at Bloomfield C.C. and is the outgoing President of the Michigan and Border Cities Golf Course Superintendents Association.

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GCSAA NEWS

The Nominating Committee of the Golf Course Superintendents Association of America (GCSAA) has submitted a slate of candidates to the association's board. The committee selected the nominees during recent meetings at the association's headquarters in Lawrence, Kansas.

The candidate's names will be on the official ballot when elections are held during the 1988 Annual Meeting in Houston on Monday, February 8.

The nominees are:

For President: John A. Segui, CGCS, Waynesborough Country Club, Pa.

For Vice-President: Gerald L. Faubel, CGCS, Saginaw Country Club, Mich.*, and Dennis D. Lyon, CGCS, City of Aurora, Golf Division, Colo.

For Directors: Joseph G. Baidy, CGCS, Acacia Country Club, Ohio; Gary D. Bennett, CGCS, Blythewood Golf Links, SC; Lee C. Dieter, CGCS, Washington Golf and Country Club, Va.; William R. Roberts, CGCS, SentryWorld, Wis.; Kenneth A. Sakai, CGCS, Franklin Canyon Golf Course, Calif.; and Michael Wallace, CGCS, Hop Meadow Country Club, Conn.

The President and Vice-President are elected to a one-year term, and the Directors are elected to two-year terms. Three Directors will be elected from the six nominees.

The President will appoint the organization's Secretary/Treasurer after the election.

*Gerald Faubel is one of our members - we will make certain he is a winner.

OHIO TURFGRASS FOUNDATION

On behalf of the Ohio Turfgrass Foundation membership committee, I would like to extend an invitation to you to join Ohio's premier turfgrass association. The organization is made up of over 360 individuals in addition to 289 organizational memberships. Our members represent golf courses, parks, lawn care firms, sod growers, cemeteries, landscapers, suppliers and others.

The purpose of our organization is to promote the turfgrass industry, encourage further study and research and address matters of policy affecting the turfgrass industry - all of which provide better turf for everyone.

O.T.F. is a very active organization. Some of the services provided are:

Education: An annual turfgrass field day and other seminars.

Government Regulations: Positive action is taken on issues affecting professional turfgrass managers.

Quarterly Newsletters: Provides information of the affairs of the foundation and the latest developments in research.

Ohio Turfgrass Conference & Tradeshow: An annual seminar offering the latest in management practices and technical information in addition to over 250 exhibits.

If you are concerned about the continuation of the turfgrass industry, you may want to consider joining the Ohio Turfgrass Foundation at this year's conference at the Ohio Center, Columbus, Ohio, December 7-10. Joining at this time will qualify you for reduced conference registration at both the 1987 and 1988 conferences and you will join us in assuring the success of your industry.

Sincerely,
Joseph Motz
Fred Bosch
O.T.F. Membership Committee

For more information contact MBCGCSA member Fred Bosch.

THE SEARCH FOR BETTER GRASSES

by Patrick M. O'Brien, Agronomist
USGA Green Section - Mid-Atlantic Region

Every golf course superintendent dreams of a grass which would better please his golfers and would cost less to maintain. Unfortunately, there has never been a national effort to plant breeders backed with the millions of dollars necessary to develop the ultimate grasses. Today, this most important research is now a reality.

In March, 1982 the USGA Turfgrass Research Committee was formed to guide the UGGA's long range multi-million dollar turfgrass research plans for the coming decade. The purpose is to develop minimal maintenance turfgrasses for golf with particular emphasis on a 50 percent reduction in water use requirements and 50 percent lower maintenance cost overall. In 1983 the USGA invited the Golf Course Superintendents Association of America (GCSAA) to join the research committee. the GCSAA is an active and valued participant on the Research Committee.

The program is now almost four years old. From 1983 to 1985, over $827,000 was spent on the project. In 1986, approximately $440,000 is currently allocated to this effort. This will bring the total first four years' expenditures to almost $1.3 million dollars. Truly, the search for better grasses has begun.

The research program is divided into five main areas: (1) Stress Mechanisms, (2) Turfgrass Research Library, (3) Turfgrass Breeding-One, (4) Turfgrass Breeding-Two, (5) Cultural Practices.

The first major priority was to develop a Research Reference Library. This is well on-track as over 6,000 entries are now in the computer and it is now open for business to all in the turfgrass industry. The Library is at Michigan State University under the director of Peter Cookingham.

Overall, the USGA/GCSAA Research Committee is very satisfied with the progress to date. There is an

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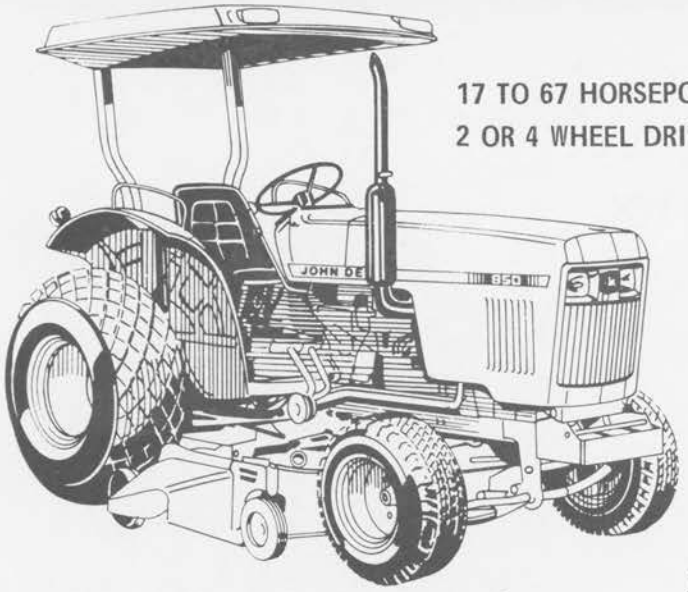

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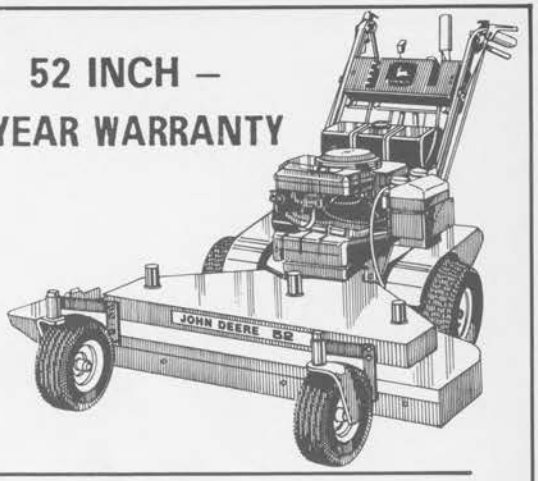

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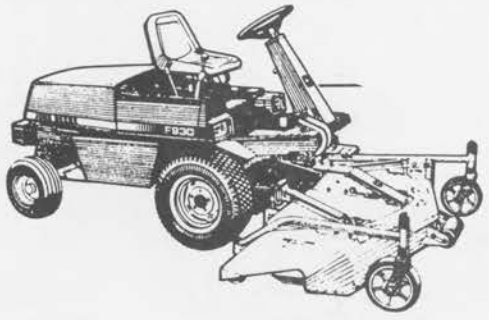

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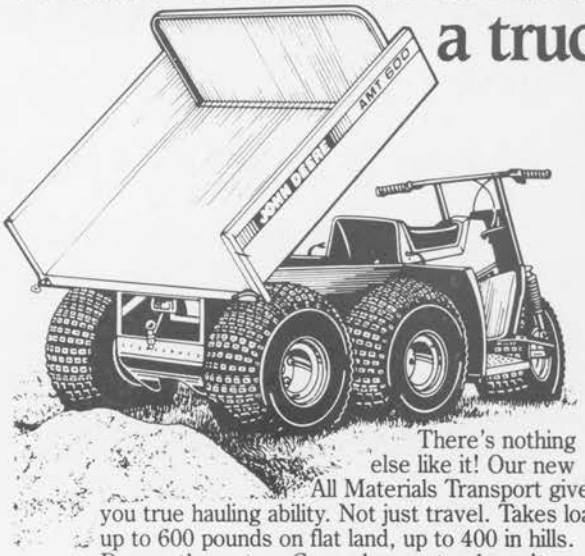

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THANKING YOU SINCERELY,
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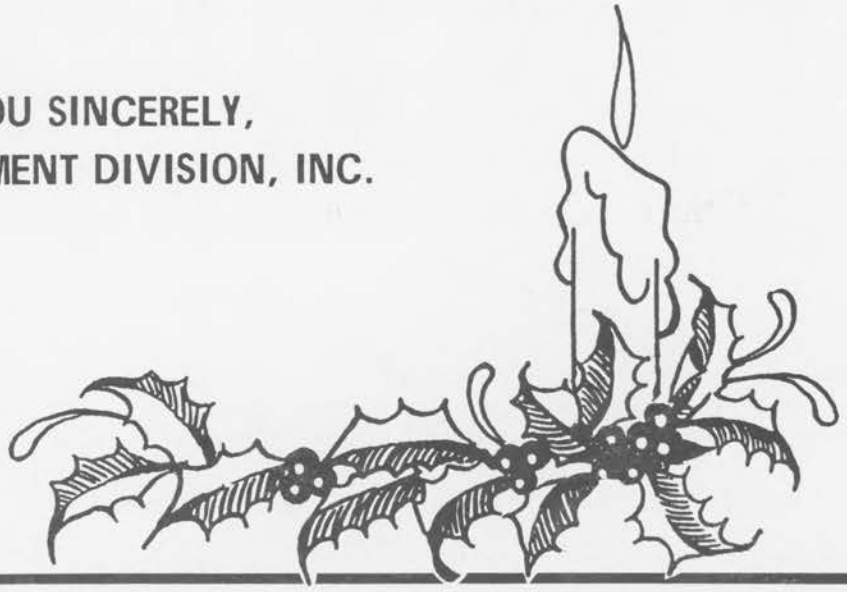


DANDELIONS BEWARE!

An environmentally safe way to destroy dandelions without harming the surrounding grass is a step closer to reality, says a University of Guelph environmental biologist. Dr. Lee Burpee plans to take a natural fungus that kills dandelions and adapt it for commercial use.

Burpee, who is director of the university's new Turfgrass Institute stumbled upon the idea by accident when a colleague mentioned seeing a dandelion patch that seemed to be dying off because of a fungus. The scientist went out and found diseased dandelions in the field and brought them back to the laboratory, where he isolated the fungi and bacteria from the plants.

"Some of the fungi we have isolated are doing an excellent job of killing dandelions," says Burpee. "We have had good success with one species of fungus that kills an eight-week-old dandelion plant in just four days." The next step is to grow dandelions in turgrass plots at the University-operated Horticultural Research Station in Cambridge this spring, inoculating the plants at different stages of growth to observe what happens.

The scientist and his colleagues are collecting the dandelion seeds this month and will stagger the seeding over a three-month period. "That way," says Burpee, "they'll be able to see how the fungi act on plants at different stages of development.

Because dandelions are perennial plants, they'll do another study next spring. "We want to know the exact age of the plants we're inoculating. It may turn out that the inoculation will have to be done only once every second or third year." The research looks promising in the lab trials, he says, but the field trials this spring will "make or break it."

Burpee, who has worked in the area of turfgrass for 14 years, says there has been considerable interest in the last five years in the development of biological pesticides and herbicides. A naturally destructive substance like fungus has an environmental advantage because it is biological, not chemical. "The fact that it is natural means the toxic effects on animals or humans will be minimal," says Burpee. "In this case, the fungus already exists in nature, and we have not changed it in any way."

The scientists have yet to determine the effect of the inoculator on other broadleaf plants. Although grass is not susceptible to the fungus, other plants may be. "We're working on a method of keeping the fungus

CONTINUED PAGE 21

WHEN THE FROST IS ON THE PENNCROSS

When the frost is on the Penncross and the water line is drained,
And ever Southward go the golfers; Cads and Jags so aimed,
Hear the rustle of the leaves as they cover rough and green . . .
And traps and tees and fairways . . . and most everywhere between;
Oh, It's then the time a feller is a feelin' at his best
With the rising Sun to greet him from a nite of peaceful rest,
As he wears a sweater mornins' & the clocks have all been changed,
When the frost is on the Penncross and the water line is drained.

There's somethin' kinda hearty-like about the atmosphere
When the heat of Summer's over and the coolin' Fall is here . . .
Of course we miss the foursomes and the washers and the tees
And the rumble of the mowers and the buzzin' of the bees;
But the air's so appetizin'; and the landscape through the haze
Is the crisp and sunny wonder-land of early Autumn days
And you can count up on your fingers all the times it's rained
When the frost is on the Penncross and the water line is drained.

The husky, rusty rustle of the seed heads on the Poa.
The clank and bang of units as in the shed they go;
The flags in the greens . . . kinda lonesome like, but still
there's a few die-hard golfers whose needs we have to fill;
The ball-washers are in the workshop; the sprayers in the shed;
The hose is coiled up neatly on the rafters overhead!
Oh, it sets my heart a-beating . . . with a fury never tamed
When the frost is on the Penncross and the water line is drained.

By William "Bill" Smart with assitance
from some Irishman named Riley

'THE LITTLE RED HEN'

(REVISED)

ONCE UPON a time there was a little red hen who scratched about and uncovered some grains of wheat. She called her barnyard neighbors and said, "If we work together and plant this grain, we will have some fine bread to eat. Who will help me plant the wheat?"

"Not I," said the cow. "Not I," said the duck. "Not I," said the goose.

"Then I will," said the little red hen - and she did.

After the wheat started growing, the ground turned dry and there was no rain in sight.

"Who will help me water the wheat?" said the little red hen.

"Not I," said the cow. "Not I," said the duck. "Not I," said the pig. "Equal rights," said the goose.

"Then I will," said the little red hen - and she did.

THE WHEAT grew tall and ripened into golden grain.

"Who will help me reap the wheat?" asked the little red hen.

"Not I," said the cow. "Not I," said the duck. "Out of my classification," said the pig. "I'd lose my ADC," said the goose.

"Then I will," said the little red hen - and she did.

When it came time to grind the flour, "Not I," said the cow. "I'd lose my unemployment compensation," said the duck.

When it came to bake the bread, "That's overtime for me," said the cow. "I'm a dropout and never learned how," said the duck. "I'd lose my welfare benefits," said the pig. "If I'm the only one working, that's discrmination," said the goose.

"Then I will," said the ittle red hen - and she did.

SHE BAKED five loaves of bread and held them up for her neighbors to see.

"I want some," said the cow. "I want some," said the duck. "I want some," said the pig. "I want my share," said the goose.

'No," said the little red hen. "I can rest for while and eat the five loaves myself."

"Excess profits," cried the cow. "Capitalistic leech!" screamed the duck. "Company fink," screamed the goose. "Equal rights," grunted the pig.

They hurriedly painted picket signs and marched around the little red hen, singing "We shall overcome." And they did.

For when the owner came to investigate to commotion, he said, "You must not be greedy, little red hen. Look at the oppressed cow. Look at the disadvantaged duck. Look at the underprivileged pig. Look at the less fortunate goose. You are guilty of making second-class citizens of them."

"But - but - but I earned the bread," said the little red hen.

"Exactly," the wise owner said. "That's the

CONTINUED PAGE 24

HANDY NUMBER FOR PESTICIDES

Fortunately, all offices do not close at 5, leaving us out in the cold when important information is needed after normal working hours for most people. The Virginia Cooperative Extension Service has announced in their September 1986 issue of **HORT-FACTS** that the National Pesticide Telecommunication Network (NPTN) is an around-the-clock service funded by the United States Environmental Protection Agency. A toll-free call to NPTN at 1-800-858-7379 from anywhere in the contiguous U.S. will access information in a hurry on pesticide poisoning treatment, pesticide product information, clean-up and disposal recommendations, regulatory laws, etc.

From **Landon's Turf Tips**, Landon C. Miller - May/June **Carolinas Newsletter.**

DANDELIONS BEWARE!, CONT.

from sporulating so it won't move to other, non-target plants," he says.

Commercial use of the product would require the same precautions used with any lawn care product to ensure there is minimal drifting. Methods of granulating the fungus will be developed this summer.

Considerable government and private interest has been shown in Burpee's research, with funding commitments coming from the Ontario Ministry of Agriculture and Food, the Natural Sciences and Engineering Research Council, the Ministry of the Enivironment and Philombios, a Saskatoon-based biotechnological firm.

Credit: June, 1987 **GREENMASTER**

BETTER GRASSES, CONT.

agreement that the breeding and stress mechanism phase is going very well. We must constantly remind ourselves that new, improved turfgrass cultivars take a long time to develop, usually from eight to twenty years, and we must not grow impatient.

In future up-dates I will cover how your club can participate , how to collect grasses at your club for the program, identify the Researchers, more on the turfgrass Library, news notes from specific projects and how your suggestions and guidance is desired.

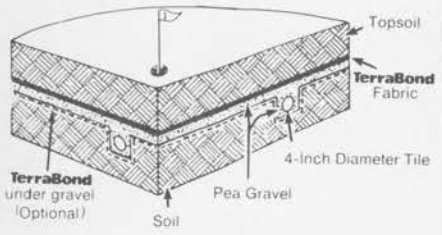
The development of improved minimal maintenance turfgrass is a worthy goal for everyone, not just for golf, but for all who labor and are concerned with conservation and the environment. It is important for all who enjoy the beauty and recreation of the outdoors and what it has to offer our modern world. The research program is certainly on schedule after the first four years.

Credit: **Mountain State Greenletter**

SPECIFY THE BEST FOR YOUR GOLF COURSE

Warren's® TerraBond™

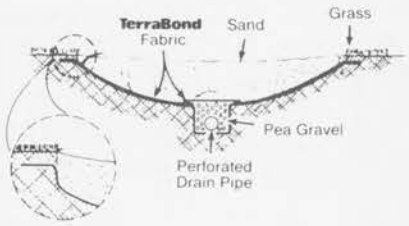
PUTTING GREEN CONSTRUCTION



Use TerraBond as a replacement for the usual 2" coarse sand layer between the greens mix and the gravel drainfield. The fabric will eliminate downward migration of the mix into the gravel and the subsequent reduction of water flow from the green.

TerraBond's high water permeability and highly engineered uniform density and EOS (AOS) make it an ideal fabric for this use. It will not rot in the soil-water environment. Its horizontal (planar) flow characteristic moves excess water horizontally out to the sides.

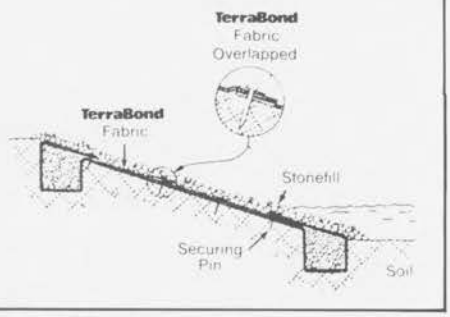
SANDTRAP LINING



Line the entire golf sand trap with TerraBond, including 6" under the surrounding sod. The sod's roots will knit the fabric to the soil beneath. Clay and rocks will be totally restricted from moving up into the sand.

Sand wash-down in rainstorms will be dramatically reduced, because TerraBond interrupts the interface of sand/soil. Rakeup will be greatly reduced. Time will be saved. Also, "wrap the gravel" in the trap drain to keep it flowing indefinitely. TerraBond's polyester will resist chemical and ultraviolet degradation.

SLOPE EROSION CONTROL



TerraBond is utilized beneath cut slope stone protection (rip-rap) as shown above. The fabric provides long-term confinement of cut slope or fill material.

Being constructed of soft and pliable needle-punched polyester, TerraBond will remain stable and functional for many years, in spite of potential exposure to the sun's ultraviolet rays and/or concentrated hydrocarbons such as gasoline, diesel fuel, oil or hydraulic fluid.

TerraBond also can be used in weed control, gravel path construction, retaining wall filtration, subsurface drainage, patio construction and planter filtration/separation.

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THE EXPERTS AGREE

Winter 1984-1985 Wind Desiccation Damage Test on bentgrass greens
(Univ. of Nebraska-Test compared the protection of TerraShield cover with clear plastic cover and uncovered control area.)

- Desiccation injury around test site was severe. Uncovered control area had 60% damage. TerraShield covered area had no injuries. Control area produced only 36% of the green cover obtained under TerraShield blanket.
- Green-up occurred 24 days earlier with TerraShield . . . and remained significantly greener than the uncovered control area for 21 days after cover was removed.
- TerraShield produced 3 times the recuperative potential of the control area . . . and twice that of clear plastic covered area.
- TerraShield enhanced soil temperature compared to uncovered control area.
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the sand topdressing in an attempt to provide a gradual transition zone from the native soil to the sand layer. This finer soil from the plugs clogged the pore spaces in the sand - or the sand clogged the pore space in the soil - thus sealing proper air and water movement.

One warning about mixing soil of any amount with sand topdressing. Have both materials tested first. Find out exactly how much soil can be mixed with the sand (proper proportions) without making cement.

Once you find this out, you should remove all plugs when aerifying and run them through a shredder. Remember, have this soil tested along with your sand. Then mix the proper amounts of aoil with the sand and **THEN AND ONLY THEN** apply the mix to the green. In succeeding years you can gradually decrease the amount of aoil until you eventually reach pure sand. There is no sure short cut that you can trust when attempting this gradual transition.

Another lesson that has been learned the hard way by many superintendents - DO NOT change sand sources once you start a sand topdressing program.

There are many courses in the Milwaukee area that have been on this sand program for over 10 years and they are not experiencing a black layer problem.

In studying all the articles and listening to many speakers one can come to these conclusions -

"Black layer" occurs when soils become anaerobic.

Sulfur and iron do not cause black layer. Sulfur at rates presently used on most golf courses will not cause "black layer" - black layer is caused by the lack of oxygen. Sulfur does not cause a lack of oxygen.

A review of Sulfur from past articles in the **Patch of Green**.

Plants absorb sulfur as the sulfate ion. If applied as elemental sulfur it must be oxidized by solid organisms into the sulfate form before being utilized by plants.

Sulfur does not easily translocate in the plant and it is relatively immobile in the soil - it just doesn't move easily.

Sandy soils, low in organic matter are most likely to show sulfur deficiency. Elemental sulfur will not oxidize properly under saturated (waterlogged) conditions. Instead, hydrogen sulfide (rotten egg smell) may be produced. Temperature, pH, soil organisms also influence the rate of oxidation.

Oxygen is an absolute necessity for organisms to change elemental sulfur to sulfate. Maximum oxidation of sulfur to sulfate occurs at field capacity moisture. Above or below this level the oxidation of sulfur is impeded.

Sulfur is oxidized more readily in acid soils.

How can you prevent or cure black layer? First you must control water use and improve aerification - quite often you may have to rebuild to improve drainage. Unfortunately many new golf course are being built with poor drainage.

If you have produced an impervious layer with improper use of sand - start over.

10 CARDINAL SINS, CONT.

8. Using uncertified, or inappropriate seed.

Always use the highest quality seed available. Also use the variety of seed that best performs in your particular region. The reasons are all too clear.

9. Poorly designed greens.

Two main problems in the design of greens are: making them too small to withstand the expected traffic, and secondly, putting too much slope on the green.

The most popular size of green is between 5,000 square feet and 7,500 square feet. Seldom are smaller greens able to achieve the same degree of success in turf quality as larger ones.

The slope on the pin positions should not exceed two percent. With the high standards in green speed, a slope of more then 2% will not stop a rolling ball.

10. Treating a new green like an old green.

New greens generally require more fertilizer than older established greens. Be aware that the added fertilizer and water can lead to added disease. Caution must be used to maintain a proper balance in turf management. As the turfgrass becomes established and a healthy micro-organism population is achieved, the turf management on these greens becomes faster.

Credit: **GREENMASTER**

LITTLE RED HEN, CONT.

wonderful free enterprise system: anybody can earn as much as he wants. You should be happy to have this freedom. In other barnyards you would have to give all five loaves to the owner. Here you give four loaves to your suffering neighbors."

AND THEY all lived happily ever after, including the little red hen, who smiled and smiled and clucked. "I am grateful. I am grateful."

But her neighbors wondered why she never baked any more bread.

GORDY LaFONTAINE, EXECUTIVE DIRECTOR OF THE MICHIGAN TURF FOUNDATION, THANKING ALL THE PARTICIPANTS.

JON MADDERN, ON THE PHONE, GETTING THE GOOD WORD ON THE SUCCESS OF "GOLF DAY". LISTENERS ARE JOHN KIRTLAND, LAWN EQUIPMENT CORPORATION, left, AND PRESIDENT KEVIN DUSHANE.

for starting this some 7 or 8 years ago - Thanks Susan.
The 22nd Annual Turfgrass Fund Raiser raised $10,250. Seventy foursomes played at 16 clubs in the Detroit area and had dinner at Bay Pointe G.C.
Chris Fachtman of the Western Chapter won the first annual State of Michigan Golf Tournament.
Earl Prieskorn won our annual golf tournament at Forest Lake C.C., and Jim Vlassis won the Clarence Wolfrom trophy for 1987.
Jim Timmerman compiled and printed results of our superintendents survey.
Thanks to Jim McGuire and Don Fields for all your help at the picnic.

"THAT'S NOT MY JOB"

This is a story about four people named Everybody, Somebody, Anybody and Nobody.

There was an important job to be done and Everybody was sure that Somebody would do it. Anybody could have done it, but Nobody did it. Somebody got angry about that, because it was Everybody's job. Everybody thought Anybody could it, but Nobody realized that Everybody wouldn't do it.

It ended up that Everybody blamed Somebody when Nobody did what Anybody could have.

Author Unknown

BLUEGRASS CONTROL, CONT.

season to control a large population of annual bluegrass. Increased dosages and repeat applications of the bacterium are safe, however, because it infects only the host plant. With chemical herbicides, precise application methods and rates are critical to prevent damage to valuable plants.

Roberts believes the greatest potential of the bacterium will be its use as a biotechnology model for a carrier in the development of a series of bioherbicides for specific weeds. Different strains could be developed for dandelions, crabgrass and foxtail control, giving farmers and homeowners alternatives or substitutes for chemical-based herbicides.

Roberts, through Michigan State University, has applied for a patent on the biological control bacterium and will soon be contacting companies to develop it for commercial use. He anticipates it could take four or fives to conduct additional research and to get Environmental Protection Agency approval.

"One advantage this bacterium has is that it is essentially a naturally occurring organism - it's not something that has been genetically engineered," Roberts says. "It's something we have taken from nature. All we've done is increase the population of the bacterium so it can more easily occupy its niche when applied."

Roberts says several companies have shown "intense interest" in developing the bacterium because of increased EPA registration demands on traditional herbicide chemicals.

'I think any of the really progressive chemical producing companies will show an interest," Roberts says. "Companies that get involved in the biotechnology arena are going to benefit in the long run."

Season's Greetings

AND ALL GOOD WISHES FOR
THE NEW YEAR

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