

**INSECTICIDE PESTICIDE LEACHING POTENTIAL (PLP) RATINGS**

Common name	Trade name	Rate	PLP Index	PLP Rating
acephate	Orthene	3.00	60	moderate
bendiocarb	Turcam	4.10	40	low
carbaryl	Sevimol	2.10	37	low
chlorpyrifos	Dursban	1.00	21	very low
cyfluthrin	Tempo	0.09	1	very low
diazinon	Diazinon	4.30	43	low
ethoprop	Mocap	4.90	57	moderate
fonofos	Crusade	3.90	42	low
isazofos	Triumph	2.00	50	low
isofenphos	Oftanol	1.90	46	low
methomyl	Lannate	1.90	51	moderate
propoxur	Baygon	8.10	71	moderate
trichlorfon	Proxol	8.16	67	moderate

**NOTES**

Rate in pounds of active ingredient per acre  
 PLP Index = (T1/2) x (application rate) x (fraction of pesticide reaching turf [0.5 for turf])/Koc  
 PLP Rating based on PLP value: very low<30, low=31-50, moderate=51-75, high=76-100  
 PLP Rating adopted from "Water Quality and Golf Course Superintendents," 1995. North Carolina Cooperative Extension Service Pub. No. WQWM-154.

**Toxicity**

Toxicity to people, pets, fish and birds is a prime consideration when selecting a pesticide. This label information should be considered prior to any pesticide use. It has direct effects on worker protection practices and may certainly influence where you can use it. Different formulations of the same product can also differ in their actual toxicity or hazard, even though the toxicity of the active ingredient is the same.

Several new synthetic pyrethroids have recently obtained labels for turf. Products like cyfluthrin (Tempo, Decathlon), lambda-cyhalothrin (Scimitar), bifenthrin (Talstar) and fluralinate (Mavrik) have longer-lasting residual activity than the old pyrethroids. These products have low use rates (often between 0.05 and 0.20 lbs. of active ingredient per acre), quick knockdown and kill, and relatively low mammalian toxicity (that includes humans!). However, they are very toxic to fish, so use near water must be avoided.

Toxicity must also be considered in the context of hazard. Something may be quite toxic, but is not really a hazard because of the way it is formulated or because it is used at a low rate.

**Solubility**

Concerns over groundwater contamination and run-off make product solubility a concern for many turf managers. However, the likelihood of a pesticide moving in the soil is influenced by factors besides solubility, like soil type and texture, annual and seasonal rainfall, thatch and slope. Numerous formulations have been devised to help determine pesticide leaching. These formulas can then be used to rank pesticides

(see above).

**Persistence**

The persistence of a pesticide can be both good and bad. When a pest is present for a long time, then persistence is good. When a product persists longer than is needed and has a potential for negative environmental consequences, then it's bad.

When selecting a pesticide, choose one with the residual activity and use the rate necessary to get the job done. There are no benefits, either economically or environmentally, to over kill.

**Other factors**

**Rotation** is always a concern, because there is the potential for a pest to develop resistance to a particular pesticide. Moreover, in the case of certain soil insecticides, there may be concerns over enhanced pesticide degradation from using the same product year after year.

Chinch bugs have developed resistance to some pesticides, and a phenomenon called enhanced degradation has occurred to isofenphos (Oftanol). Although we are still unclear about the benefits of pesticide rotation in some situations, it makes good

sense to occasionally rotate products if you are using high rates or or treating for a pest that has the potential to develop resistance.

**Biological/biorational pesticides** are now more effective and cost-efficient than ever. They are, however, a little less forgiving than conventional pesticides. Appropriate timing, application techniques, environmental conditions and pest life stage are all very critical, since some biological or biological materials have narrower ranges for optimal activity. Before selecting such a product, be sure you understand what it takes to make it work.

**Alkaline hydrolysis** occurs when alkaline water causes a pesticide to break down more rapidly than it might under more neutral or acidic conditions. This may result in poor performance or limited residual activity. If you use alkaline water to mix and spray pesticides, consider using a buffer or acidifier. In the case of alkaline irrigation water, which will cause the same effects, buffering is not practical. However, you can select a pesticide that is not susceptible to alkaline hydrolysis. **LM**

# CHIPPERS/SHREDDERS

**...for the golf/landscape market can help you save the money you normally spend on disposing debris.**

by JERRY ROCHE / Editor-in-Chief

Not too many years ago, the "Don't Bag It" program started in Texas and expanded from coast to coast. Though the original program was meant to address turfgrass clippings, there is some wisdom in extending the concept to other landscape debris like tree prunings, broken branches, twigs and brush.

And the best way to "not bag" organic landscape debris is to chip or shred it up and return it to the landscape in the form of mulch.

Chippers/shredders, detailed elsewhere on these pages, are the perfect means for converting organic landscape debris into various types

and consistencies of mulch. They are true "garbage disposals" for the yard.

Not only does such a plan save you the money it would normally cost to cart the detritus to an approved dump site, but you can also make money on the other end (if you are a contractor) by charging clients for the mulching service.

Before purchasing a chipper/shredder, here are some factors you might want to consider:

- ▶ Make sure that you're buying a commercial-grade machine. Many homeowner-grade chippers and shredders are available through local retailers and dealers, but they are not built sturdily enough to stand up to the longer, harder hours you will be using it. The money you invest in a commercial unit at the front end will save you at the back end in machine life and downtime.

- ▶ Know the difference between a chipper and shredder. Chippers are required for woody branches; shredders are better for brush, leaves, twigs and stalks.

- ▶ Answer these three questions in your mind before visiting your local dealership: "How am I going to use it?," "How big are the yards I'm going to use it on?" and "Will I be chipping large pruned branches?"

That said, here are some special features to consider before buying:

- Know whether you want fixed hammers or flail knives; each has its advantage.
- Do not buy too big or too small a model. Engine size begins at about 4 hp and goes all the way up to 100+ hp. Select the right size for your operation.



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- Many available units come with blowers and/or vacuums. Such a machine could give you extra versatility that you might need in your jobs.

- Consider safety features: make sure that your choice comes with a power feed safety clutch release if you need it, or perhaps a folding safety door on the chipper chute.

Speaking of safety, always make sure proper training is available, either from the dealer or from the manufacturer. Then train your employees in the proper use of chipper/shredders (which can be very dangerous because of the rapidly-revolving hammers or knives), and make sure they are wearing the proper clothing and safety gear when operating the machines.

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*cont. on page 63*

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Circle No. 113 on Reader Inquiry Card

**I**n the early days of golf course design, the going rate for an 18-hole layout was \$25. The designers would plot out the course with stakes, leave instructions for the greenkeeper on how to build and care for the finished product, and move on.

That's just one of the many interesting bits of information I learned while researching my segment of the "LM 100" (see page 12).

Toward the end of all the phoning, I was writing notes on envelopes, desk calendars, whatever was handy. The phone would ring, and all other available scraps were filled with barely legible notes from conversations with superintendents and athletic field managers.

And I wasn't going to keep a Joe Hahn or a Mike Trigg waiting as I searched for a new notebook, especially not after protracted sessions of telephone tag.

This was the kind of project that helped me see how little time is available for anything

other than the job. The more messages I left, and the more phone calls that were returned—during brief stops at the maintenance shop, inside of hectic schedules, or with a tournament under way—underscored the large work-load and duties that rest on the shoulders of the modern day turf manager.

To help in my search for some of the most visible golf courses, I referred to *The Golf Course*, by Geoffrey S. Cornish and Ronald E. Whitten. It's a nifty reference book, and it helped me realize the rich history of golf course design (it's also where I got that \$25 figure), and the accomplishments by people such as Donald Ross and Willie Park, Jr. These men churned out hundreds of designs, at a time when equipment technology was still in the Model-T stage!

## Telephone tag: expect it with supers and groundsmen



*Terry McIVER*

TERRY McIVER  
Managing Editor

**GOLF/GROUNDS**

PAGE 1G ▶

Football prep: know your field

PAGE 6G ▶

Ingenuity keeps Pinehurst going

PAGE 10G ▶

Green Team teens hard at work

PAGE 11G ▶

Building a field for St. Louis Rams

Fast forward to present day, and I see how the modern day superintendent must keep the turf healthy and green without compromising the original design.

Athletic field managers also nurture turf that is in constant use, for a variety of not-so-turf-friendly sports: football, soccer, moto-cross, tractor pulls and concerts.

Most with whom I spoke, from both industry segments, feel it's essential to be organized, with a positive attitude. You also have to get along with people.

A solid knowledge of turf science is helpful, too, and is what most interests people like Scott Niven at the Stanwich Club. Steve Glossinger of Oakland Hills would agree. He keeps his eye on the basics: greens, tees and fairways.

The work can be tough, the days long and the schedules hectic, but the rewards of lush, green turf, a job well done, and a dedicated crew are all worth the effort. **LM**

**Comments? Write Terry at** 7500 Old Oak, Cleveland, OH 44136; **phone him at** (216) 891-2709, **fax him at** (216) 891-2675 or **e-mail him at** 75553.502@compuserve.com.



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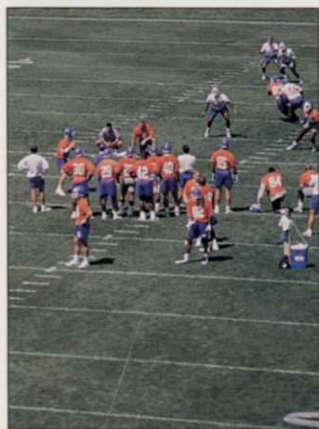




# GETTING READY FOR FOOTBALL

*Formula for success: (1) safety; (2) playability. Keep your priorities straight, and the field will follow.*

by STEVE & SUZ TRUSTY



Safety and playability should top your list of field priorities. Assess past problems, and develop data on water movement on and from the field surface.

**F**ootball only starts in the fall from the fans' perspective.

For the sports turf manager, football field preparation and maintenance is a year-round job. Demands are increasing for both game and practice field time. Football facilities usually must share space with soccer, baseball, bands, concerts, and other events. Proper field preparation entails bringing turf to optimum levels so it can stand up to the stress and maintain season-long playability.

Steve Wightman, stadium turf manager for San Diego's Jack Murphy Stadium, says, "The biggest difference between sports turf management and other areas of turf care is that our prime concentration is always on athlete safety and field playability. The optimum agronomic conditions for the turf and aesthetic appeal of the field take second place."

Sports turf managers must know their own field conditions, have a good understanding of agronomic principles, keep up

with the latest advances in turf-related technology, observe other fields and exchange information with other turf professionals, and keep detailed records of their own field maintenance procedures, including timing, weather-related influences and results.

On top of that, maintenance procedures must be "worked into" the small windows of opportunity allowed by heavy field-use schedules.

Tom Lujan, stadium turf manager of Denver's Mile High Stadium, stresses that planning and communication are the keys to success. Coordinating the grounds care staff with field user groups allows essential procedures to be scheduled around activities.

And all this must happen within the constraints of available time, money, equipment and personnel.

## **Eight tips**

**1) Know your fields.** Some sports turf managers have had the privilege of helping design and develop state-of-the-art

game and practice fields. Others have inherited decades-old established facilities. Whatever the situation, maintenance procedures must be based on your field conditions. The more you know about your fields, the more comprehensive your program can be.

**2) Do some digging, literally.** Take soil test samples from multiple sections of your game and practice fields and have these samples analyzed by a competent lab. Assess not only pH and nutrient levels, but also the soil profile breakdown.

**3) Study construction, reconstruction and/or renovation plans, if they are available.** Do some probing to verify for yourself whether subsurface materials, drainage and irrigation systems correspond with existing records. Develop an up-to-date plot plan of each field, noting dimensions, elevation changes, soil type and the depth of various layers, including any changes in soil profile within portions of the field, the sub-surface drainage and the ir-



rigation system.

4) **Develop data on water movement** on and from the field surface and the percolation rate of absorbed water during and after heavy rains and during and after normal irrigation.

5) **Study wind patterns, temperature and humidity** variations and sun and shade variations across the field during different seasons. In cold weather regions, track "normal" snow accumulation patterns and snow melt variations.

6) **Pull plugs of turf from multiple areas of each field.** Check density, color, crown condition and the length and development of the roots. Note turf variations between segments of the field and how these variations are related to the conditions already tracked. If your budget will allow it, send turf samples for tissue analysis to determine how effectively soil nutrients are being used.

7) **Identify problems from past seasons** and determine whether changes in the current maintenance programs will help alleviate those problems.

Because football is played "in the turf," often concentrating action in specific areas, compaction is a continual problem. Pre-football core aeration traditionally begins as early in the spring as other field use allows. Budgets, temperatures, grass types and irrigation capabilities govern when and how frequently core aeration can be used. Some stress can be alleviated with additional aerations only on the game field, or only between the hash marks of the football fields.

Topdressing is most effective when used in conjunction

with core aeration. When necessary, field soil profiles can be modified gradually by removing cores and topdressing with the desired media.

8) **Assess the grass types and varieties in use and analyze their performance under field use conditions.** Check out alternatives, compare performance at test sites and at other sports fields with conditions and programs similar to your own. New grasses generally are tested on a practice field, or portion of a practice field for at least a season before a complete change is made. These "experiments" usually start in the early spring.

Heavily damaged and thinning fields also will be overseeded, sprigged or sodded as early as possible, frequently following the first aeration of the spring or summer. Cool-season fields also may be overseeded with perennial ryegrass or a ryegrass/bluegrass combination just prior to the beginning of the football season, and weekly throughout the season. Players then "cleat in" the seed so it's in place for germination as conditions warrant.

Fertilization programs are adjusted according to specific turf needs, but generally, nitrogen levels will be kept sufficient to support sustained, steady growth while avoiding any flush of rapid, lush growth. Potassium levels will be increased to improve plant hardiness, both for the rigors of play and the approaching colder weather. Phosphorus levels may increase in conjunction with overseeding.

Turf color may be "perked up" a touch on the game field

with an application of a liquid nutrient "package" or chelated iron a few days before the season opener.

Mowing heights that have been moved up gradually during summer's more limited field use are gradually moved back down to game levels prior to the start of the season. Mowing frequency which also may have been reduced during the summer returns to play schedules. Mowing must fit into the multiple pre-game practices and the irrigation and field painting schedules.

Irrigation timing and amounts are critical to seed germination and turf rooting. For seedlings, frequent, light irrigation is needed. On established turf, less frequent, longer

irrigation periods encourage deep rooting. On fields with thick, well-rooted turf, compaction can be reduced somewhat by keeping moisture levels toward the dry side during practices and play. But fields can't be so dry during use that the turf is stressed.

#### **Cut the stress**

Safety and playability should be tops on everyone's list. Work with field users and plan field use to move some practices to the outer sections of the game field, to a practice field, or even to the outfield section of the baseball field. □

—The writers are partners in *Trusty & Associates, Council Bluffs, Iowa.* Steve is Executive Director of the national *Sports Turf Managers Association.*

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Circle 122

# Ingenuity helps carry on Pinehurst's reputation



John Clark doesn't really 'steal' good ideas to keep Pinehurst beautiful. He says he just 'borrows' them.

by JERRY ROCHE / Editor-in-Chief

**P**inehurst. When you're talking horticulture, the word "Pinehurst" ranks right up there with "Disney," "Pebble Beach" and "The White House."

Head horticulturist/grounds supervisor John M. Clark is no different than the many thousands of his colleagues at lesser-known institutions all across the country. His problems are just more numerous and more complicated. And they're not always solvable by throwing money at them.

"There are no open purses and no unlimited deep pockets," says Clark, a certified grounds manager (CGM) with the Professional Grounds Management Society. "That type of situation is a myth. We're like any other business: we have to watch each and every penny."

Because visitors to Pinehurst Resort & Country Club have come to expect eye-popping vistas, Clark must use his ingenuity to get the most "bang for his

buck," just like anyone else. And he's not afraid to borrow good ideas.

"Partial pre-finishing was an idea we got from Disney World," Clark relates. "Instead of going with cellpacks of 32 cells to a flat, we will start using 2½x2½-inch cubes in which annuals are grown. We pre-finish perennials in a 3½-inch pot. Starting next spring, when we take out pansies that are in full flower, instead of putting in a new plug, a pre-finish plant will minimize color loss. We want to get transition color in before anybody else. We can't afford to wait until the pansies go out."

The only difference between Pinehurst and other grounds operations is scale, Clark contends. He has 20 people working for him, and 10 additional are hired for four to five weeks, just to plant annuals.

"I admire people who don't have the huge scale we do," he notes. "They are folks who have to figure out innovative ways to do the job safely and efficiently with not as much equipment availability. I've been there, and I know it's a challenging job."

Pinehurst crews plant 100,000 annuals and hundreds of perennials every year. Having an assembly-line mentality has helped Clark cope.

"We use a ½-inch drill with a 'bulb bit' to speed up the plugging of annuals and perennials," he notes. "One person pops the hole, two people put the plugs of annuals in the holes and cover them up. We can average—with two groups of five people—5000 to 7000 annuals in the ground in one day, fertilized and mulched."

Grass is sometimes a small problem, too. Pinehurst has 13 acres of non-golf turf-type tall fescue, proprietary bermudagrass and common bermuda. But the only problem worth mentioning (except for mowing) is fungus on the fescue—mostly brown

*cont. on page 8G*

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*Geoffrey R. Blind  
Golf Course Superintendent  
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cont. from page 6G

patch because of the humidity.

No, the big problem is color in the landscape.

"The requests for and expectations of color have gone through the ceiling," says Clark, who has been at Pinehurst since 1987. "I'd say they've quadrupled in that time. So we're using more special fall and winter color, and we're working to improve our transition so we never look void of color.

"We have more than 8,000 sq. ft. of greenhouse space this year, with an additional 3,000 sq. ft. planned for next year. With that extra space, we can [test] the All-American selections and see if they work here."

Part of the key to successful color is successful planning, since the color is year-round and a large part of the budget.

"We plan our color six months ahead of time," Clark says. "The growers offer us a percentage discount for having our order booked by May 31st for fall and winter color, and by September 30th for spring and summer color."

#### **Dream job**

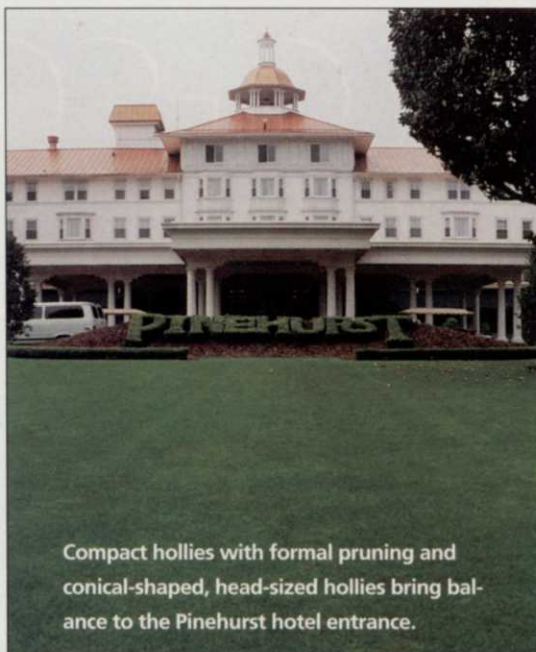
Despite the color concerns, there are many things to like about the job. For instance, the U.S. Department of Interior and National Park Service certified Pinehurst as a National Historic Landmark in June, so Clark now feels like preserving part of U.S. history and culture is part of the job description.

Frederick Olmsted was original Pinehurst designer of the resort and village. Monuments to him still remain, the towering, majestic oaks that dot the grounds.

"Everyone who works here carries on the tradition of hospitality and camaraderie that has made this area famous," Clark says.

"At the time I applied for the position, I thought it was a wonderful opportunity to allow me to incorporate some landscape ideas and designs I'd been pondering. The ideas really lent themselves to the formal landscape preservation of Pinehurst, too.

"I see my job as enhancing the history of the preserved landscape that's been here



Compact hollies with formal pruning and conical-shaped, head-sized hollies bring balance to the Pinehurst hotel entrance.

for more than 100 years—not recreating the landscape. It has been a dream job."

His predecessor, Lanny Garner, was the grounds manager who really brought the Southern "feel" back into the perspective of Pinehurst. Clark just added some personal "touches."

"My first project was to reformatize the front of the hotel area," he says. "It was a hodgepodge of shrubbery. The Formosa azaleas had grown absolutely huge. You couldn't see over them from the front porch, and you couldn't see the wonderful expanse of turf. So we brought rhyme and reason into the design by planting compact hollies with formal pruning and conical-shaped head-sized hollies."

#### **Special projects**

Making topiary and responding to the weather are two ongoing programs, though they're pretty much seasonal. Pinehurst displays "mock topiary" in the shape of what they call their "Putter boy" and "Tour boy," four flamingos and—in season—an Easter bunny. "They're wire forms covered with vinca minor. We also do Christmas tree shapes out of myrtle and we plant poinsettias, in season.

"In December, we clean up the natural areas, do small projects: tree pruning, moving and transplanting plant material. In January and February, we do ice and snow removal with our 'Ice Patrol.' The ice

storms here can absolutely wreak havoc. This past winter was as close to a total nightmare as I can remember. We lost six trees."

Clark especially remembers February of 1995 when high winds felled more than 75 trees on the resort grounds and golf courses and in the Pinehurst community. Because the year-round residents are so closely-knit to the resort, Director of Grounds and Golf Course Maintenance Brad Kocher took resort crews out onto the public driveways and lawns, and helped clean up debris.

"The chain saws and pick-ups were all coordinated by Brad Kocher and the other golf course superintendents—before the clean-up of the golf course and resort grounds," Clark says.

#### **Behind the scenes**

As with any successful venture, the people make the difference. Clark is surrounded with quality co-workers—and they're more co-workers than anything else because he gets his fingernails as dirty as anybody else on the payroll.

"We're specialists, but there's a lot of overlap," he claims. "I'm grounds superintendent, and Tim Kemper is the grounds assistant. Brad Kocher is director of grounds and golf course maintenance, Paul Jett is superintendent on Pinehurst No. 2, and manages the croquet and lawn bowling courts. We have an irrigation department and a vehicle maintenance department that maintains 120 vehicles.

"We have a lot of 'non-traditional' employees, too. Cynthia Alexander is our greenhouse foreperson. Michelle Buie is her assistant. We have a lot of minorities; interns from England, Australia and New Zealand; lots of retirees, including two who work in the greenhouse.

"We work our schedule around the retirees' hours, and people like Dr. Dick Nickerson—who is a retired tomato breeder for the Campbell's Soup Company—is an inspiration to us. This is a learning experience; there's a wealth of knowledge here." □

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# Young hands at work

A 'Green Team' composed of Lincoln, Neb., teenagers brightens city golf courses and parks.

by RON HALL / Senior Editor

**D**ick Neumann appreciates all the help he can get at the Highlands Golf Club in Lincoln, Neb. This year he's been really grateful.

The 27-hole municipal course he and his crew maintains struggled through the spring and early summer recovering from winter kill. Seven bentgrass greens, including the nursery green, suffered severe damage. Four others required intensive nursing.

The extra help comes from four seasonal workers. They're part of the Green Team, an employment program for 14- and 15-year-olds. The four youths at Highlands are part of a much larger project, but more about that later.

At Highlands, Green Team members tackle projects that Neumann's crew is usually too busy to do.

"Because our crew is spending so much extra effort on winter recovery, we really haven't been able to do anything on our landscape beds or the wildflower beds around the clubhouse until we got the Green Team kids," says Neumann.

Green Team members, because of their age, can't operate heavy equipment, but there's still plenty to do.

Last summer at Highlands, they spread mulch and worked in beds, planted trees and buffalograss plugs, helped compile a list of plants and wildlife for



Thanks to the Green Team, Highlands Golf Course "has never been cleaner," says Dick Neumann.



The Green Team plants wildflowers at the Woodmen Outdoor Classroom. Nhan Le, Julia Eckles, LaShawn Mody, Renee Snoch, Lihn Nguyen, Ryan King, Curtis King, Mike Satorie (leader) and Kelly Williams.

the Audubon Sanctuary Program, and cleaned the maintenance shop. "I don't think it's ever been cleaner," says Neumann.

One project in particular drew appreciative comments from Highlands' golfers.

Green Team workers stripped sod away from the bases of tee marker signs, tilled in organic material and planted wildflowers that had been tagged from the course's five acres of wildflowers.

"The program costs us very little, just the use of some of our tools and the cost of a supervisor," says Neumann. The key to its success, at least at Highlands, is finding the right supervisor to oversee each four-youth crew. The supervisor is also typically a student and seasonal worker.

Neumann says the program teaches the youths valuable work skills. About half represent minorities; about a quarter come from poverty households. Most turn out to be competent helpers, and some develop a genuine interest in the green industry and return from season to season.

Sheila Vrana, who helped start the Green Team program five years ago with Parks Dept. colleague Tammy Casey, says 108 Lincoln teenagers are participating this summer. Each receives minimum wage. The program's budget of \$27,500 comes from donations from businesses in Lincoln, Nebraska's capital city of about 200,000 in the state's southeast corner. The coordinator for the program is Kristi Bornemeier. □



# Welcome to St. Looie

*Local green industry experts teamed to give the professional football Rams a field that should make them feel right at home.*



PHOTOS BY KEEVEN PHOTOGRAPHY

by RON HALL / Senior Editor

**C**reating a new field for a professional football team takes the coordinated efforts of a team of green industry pros. In St. Louis, which promised the sun and moon in luring the Rams from Los Angeles, that team included landscape contractor Munie Outdoor Services, sod supplier Emerald View Turf Farms, and Rams' groundskeeper Scott Parker. The NFL's "Sultan of Sod" George Toma personally oversaw all of their efforts.

While St. Louis is yet to deliver either the sun or the moon, it did come up with, perhaps, the best practice facility in the NFL.

The complex is located in the suburb of Earth City about a 25-minute drive north of downtown St. Louis and the city's new domed football stadium. The Rams' new headquarters consist of a 90,000 sq. ft. office building, with attached indoor practice area and training rooms.

The heart of the facility, though, is a 405-by-410-foot bermudagrass playing surface. It's the size of two football fields and can be lined east-west, or north-south. If needed,

**Joe Munie (left) built the field; now Scott Parker, the Rams' groundskeeper (right), takes over. Parker is a St. Louis native and has worked several Super Bowls with George Toma.**

the Rams will be able to use an adjacent, crowned tall fescue field. It's also new.

"When the Rams come back, they're not going to believe how good a field they're going to have to play on," says Scott Parker, the Rams' groundskeeper. He joined the club on its move a year ago.

Parker, a St. Louis native, learned a lot of his grounds skills from Toma, the nationally recognized groundsman formerly with the Kansas City Chiefs. Parker worked a couple of Super Bowls and a Pro Bowl with Toma, who, along with his son Chip, regularly advises and works with the National Football League concerning playing fields.

Says Parker, "With all the players and the money involved with this football team, they want the best field they can get."

Munie Outdoor Services of Belleville, Ill., built the practice fields. The company started last October and worked through a cold but relatively dry winter. The goal was



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to build the practice field with the same care and precision as a putting green.

"I took it upon myself to run this project because I knew what had to be done," says owner Joe Munie. "I wanted it to come out perfect, and we got pretty close."

After grading the field (Munie used a laser in the process, as he also did in setting Toro sprinkler heads), Munie crews covered four inches of pea gravel with 14 inches of sand/peat/topsoil rootzone mix. Unlike a putting green which is often just sand and peat, the mix contains 5 percent topsoil for stability. Drainage was installed in a herringbone-pattern on 20-foot centers running to 15- and 18-inch collector pipes.

In July, Emerald View Turf Farms installed the 18,403 square yards of fine-textured bermudagrass, a variety known as Baby Bermuda. Emerald View is the licensed grower for the grass in Missouri, Illinois and part of Kansas.

"Baby Bermuda is a very aggressive little



**Tom Keeven of Emerald View Turf Farms says the Baby Bermudagrass put down three inches of roots within a week of being installed in July.**

grass. It has fine texture and it can actually be brought down to putting green height," says Tom Keeven, who runs the family sod operation with brothers Ed and Jim.

"Around here I think it's going to make a great grass for athletic fields, especially those that have summer and fall play."

Because it is a relatively new grass, at least in the Midwest, sod for the Rams' site was trucked from Texas, 25 loads. Then it was laid in rolls, 42 inches wide, 32 sq. yds. to the roll.

"In seven to eight days in that sand, the rootzone was already down at least three inches. It was phenomenal," says Keeven.

With sod in place and rapidly knitting, Munie's crew rolled the field in two directions, sprayed Bovamura on it and a couple of days later topdressed it.

"We've got to start aerifying it and getting the water to perk down, but actually the water's going through it pretty fast right now," says Munie.

When Toma walked the practice field and presented Munie with a sweatshirt with his thanks scribbled across it, the veteran landscape contractor was pleased and relieved. **LM**

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\*The Marquette Report, Marquette University, 1992.



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Circle No. 109 on Reader Inquiry Card

# Snow jobs don't have to be so painful

**I**f you live north of the Mason-Dixon Line, snow removal is just part of life. And even in the South, it can occasionally be a nuisance. Across the middle of the U.S., the unpredictability of snow is a "catch-22" no-win situation, where you can be faced with the frustration of whether or not to even buy snow removal equipment.

But just as soon as the budget-minded professional—who has saved money by *not* purchasing snow equipment—is faced with the once-in-a-decade blizzard, he or she can feel "a penny wise and a pound foolish."

Even in the North where the question is only when (not if) it will snow, having the right equipment to handle the various kinds of snow can be a challenge.

Powder snow or thick, wet snow; sleet or snow mixed with rain that freezes on impact all present different problems. Let's start with equipment.

### Unpredictable?

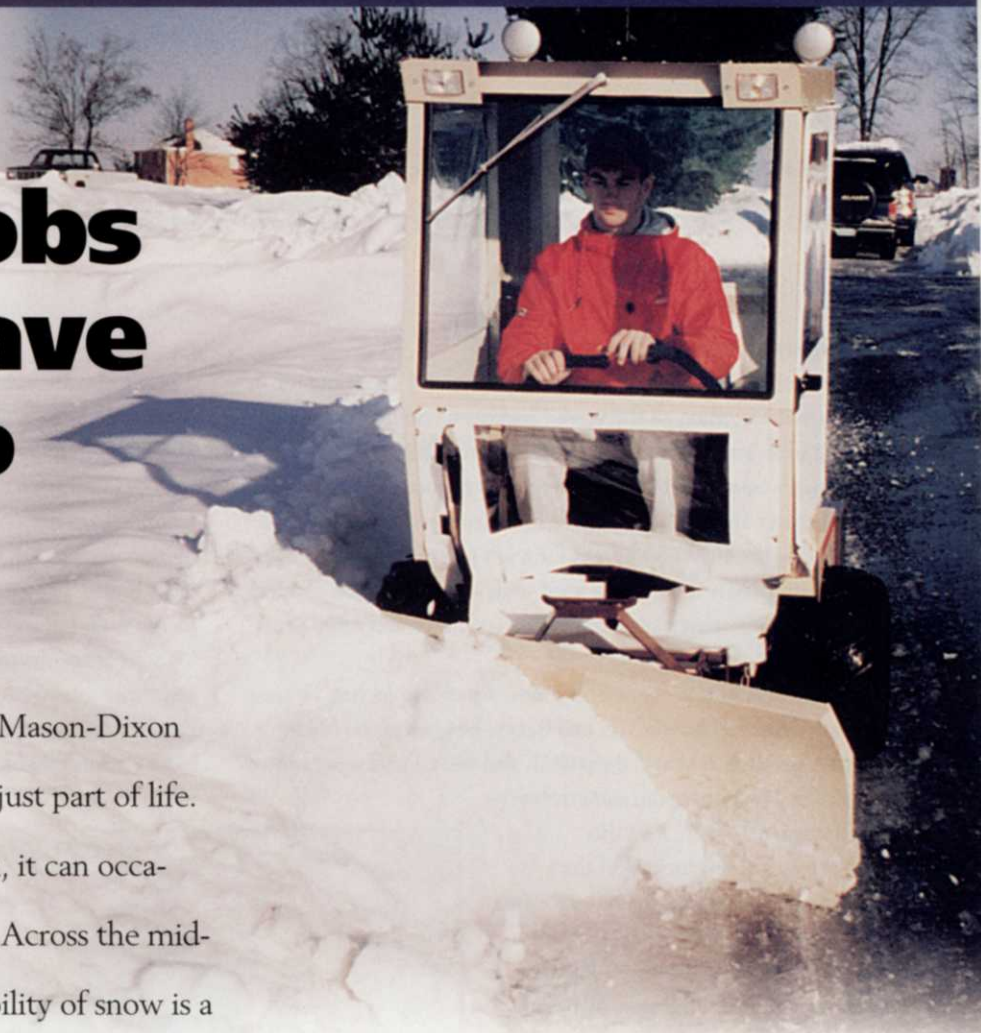
Being prepared for snow removal has its rewards for maintenance shops and contractors alike. But if you're a grounds/landscape contractor, the added dimension of offering clients snow removal services during the winter is an ideal way to strengthen those relationships. It can also help smooth out cash flow during traditionally slow months.

However, buying snow equipment can be prohibitive if you don't choose versatile grounds maintenance systems that offer a wide range of year-round attachments, which most contractors and

in-house grounds managers recommend.

Mark Moyer of Kirksville, Mo., is right in the middle of the "unpredictable snow" belt. His ability to offer year-round service—including snow removal—has both strengthened his relationships with clients and added significantly to his bottom line.

"My approach to everything has changed since I saw my first demonstration of a zero-radius mower. The Grasshopper system, for example, is really a grounds maintenance system, not just a mower. The system's attachments are what allow me



## TIP #1:

*Choose versatile equipment that can be used not only in the snow, but also in your primary seasonal business.*

to work year-round.

"As soon as I bought my first zero-radius unit, I quit my job and started accepting all the work I had been turning down, including snow removal jobs. My income jumped immediately."

Moyer's equipment choices were rotary broom, dozer blade, snowthrower and enclosed cab for his three mowers.

"Having the right equipment for a job just makes sense," Moyer says. "I compare it with eating soup with a spoon instead of a fork. The right equipment makes the job easier, faster and more profitable."

Moyer says that for light fluffy snow up to five inches, he uses the broom. If the snow is wet and heavy, he goes to the blade, which also handles heavy, deep slush and sleet. For deeper snows and drifts, Moyer uses the snowthrower.

"If it is really deep, I set the snowthrower a few inches off the ground and cut a path," he notes. "Once you have a path, then it's a piece of cake. Zero-radius maneuverability lets me get into spots other guys just can't reach with bigger or less maneuverable equipment and is a lot faster than the smaller hand-pushed snow blowers. I don't even own a shovel."

Moyer's clients include banks, 24-hour restaurants, churches, private residences, the multi-purpose building at the fairgrounds and doctors' offices.

### **Predictable!**

Dave Combe of Salt Lake City, on the other hand, contracts snow removal for a wide variety of residences, condos, apartment complexes and commercial clients.

"Of course, we have Western blades and another V-blade for our three trucks. They take care of the big parking lots and streets. But then we go back in with our 721D Grasshopper with the snowthrower attachment and that gives us another three feet. It throws the snow over the berm and finishes the job."

Combe also uses a dozer blade and broom.

"We charge \$20 a push (per residential driveway) and we can knock off one in about 10 minutes," he observes. "We have about 80 driveways that we take care of regularly, in addition to the lots and other commercial customers."

Combe recommends low-pressure tires without chains, which

give you traction even on inclined driveways.

"We also start clearing even while it's still snowing if it's going to be a really deep snow. That helps us keep ahead of it, and the people seem to appreciate it, too."

Warren Brown, who is in charge of snow removal at John Knox Village in Lee's Summit, Mo. (the nation's largest retirement community), uses 60 hand-shovelers to clear sidewalks in eight hours. They use dozer blade-equipped mowers and John Deere walk-behind snow blowers for the 25 miles of sidewalks.

Streets are cleared with two one-ton trucks with sand spreaders and three four-wheel-drive Ford Broncos with 8-foot blades. Two Ford tractors equipped with rear blades also help clear streets, and New Holland skid loaders are used for parking areas.

Tom Hays of Alexandria, Minn., clears snow an average of 12 times a year, including drifts of up to four feet. He appreciates movable deflector chutes.

"They can be easily turned around with your feet to keep the snow blowing in the same direction whether you are going down or coming back," Hays relates. "It sounds like a little thing, but when you are out there moving around in deep snow, being able to direct the snow discharge without stopping is important."

### **City maintenance**

Marc Evens, parks crew leader for Kaysville City, Utah, has to get around a honeycomb of walkways and sidewalks when cleaning up around the two-block city office campus.

"I can't imagine how long it would take with conventional hand-pushed snow removal equipment," says Evens, "but the zero-radius units are ideal for that kind of job. If the snow is 8 to 10 inches or more, we set the snowthrowers high and make a couple of passes. There is no depth they can't handle if you either go slow the first pass or just set it high for the first pass and then repeat at a lower setting.

"Our snowthrowers are also ideal for keeping the cemetery clear because they don't scalp the grass under the snow. And their zero-radius ability makes removing snow around traditional markers or flat markers quick and efficient."



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Circle No. 116 on Reader Inquiry Card

# Be serious about snow business

by TERRY McIVER / Managing Editor



**J**ohn Allin of the Allin Companies, Erie, Pa. is serious about snow plowing. He runs a 60-truck operation composed of his own trucks and his subcontractors' equipment.

He has eliminated most of his snow competition by hiring them to work for him in the winter!

Allin knows the competition is going to be there, primarily from other seasonal businesses.

"Snowplowing is not exclusive to the landscaping business," he says. "It's seasonal, and companies that work during the summer also put the trucks they have to work during the winter."

Landscapers who offer snow removal face competition from a variety of sources including:

- roofing contractors,
- excavation contractors,
- masonry companies, and
- virtually any service business with pick-up trucks.

Allin has made the competition work...for him!

He has more than 45 subcontractors, 20 of whom are

self-employed in seasonal work for other businesses. "We also use three pieces of equipment from a local excavation contractor," he explains.

"That kind of competition is out there," says Allin, when talking of some of the unforeseen surprises that occur during a season. "It's just a different type of competition.

"Excavation people have the capital already invested in the equipment, and need to figure out how to use it for plowing.

"Snow plowing is an industry in and of itself. We're a 60-truck operation going against one- or two-truck operations. We have a decided advantage."

Allin has 12 residential accounts, most of whom are owners of commercial sites he plows. In the commercial market, says Allin, you have to have things businesses demand:

- 1) liability insurance
- 2) dependability: you

show up.

Allin and his crews see 18-inch snowfalls on a regular basis, which is why he calls it "a major business.

"If you're not making money by plowing snow, you're doing it wrong," insists Allin. "Approach snow plowing as a business, not as another add-on service."

Allin is serious about the need snow removal professionals have for useful information, which is why he and others who are heavily involved in plowing have formed the Snow and Ice Management Association.

### **Parks, too**

Mike Trigg, superintendent of parks for the Waukegan, Ill. parks district, deals with "the A to Z of snow removal."

His fleet of four vehicles and miscellaneous retrofits handle the wet stuff on pathways, sidewalks, around buildings and recreational facilities, including the grounds

## TIP #2:

*Be dependable. Customers don't want excuses, they want action. And keep the promises you make in your contract.*

around an outdoor ice rink, seven days a week.

"A lot of the time those operations are open till 10 or midnight," says Trigg, which adds to scheduling challenges.

"We also share snow removal for Park Place, a community senior center."

Trigg stocks up on de-icers in November. Thanksgiving is the deadline. Everything is

ready to go by then.

"We have a two-yard spreader unit on trucks. We set up an agreement with the city that we load at public work site. That eliminates pallets. We reimburse the city at the end of the season. We ended up buying them a semi load of rock salt. I didn't use that much, but it was a cooperative agreement."

Trigg says four tons of salt is an average winter's supply. He also uses de-icer on walkways.

"Truck maintenance increases in the winter," admits Trigg. "We have to maintain the transmissions. Trucks are up to 10 years old, so we have mechanics do a detailed inspection, and frequent fluid changes."

Plow damage to pathways is always a concern, and reducing damage requires care while plowing.

### Major accounts

Phil Cavotta of Cavotta Landscaping, Cleveland, Ohio, keeps a snow crew on his major account (the 180-acre Cleveland Clinic) around the clock.

"It's a massive undertaking," admits Cavotta, as he counts down the duties it involves.

"We've got driveways. We've got 1.6 million sq. ft. of surface lots that all have to be salted and plowed. We've got 400,000 sq. ft. of garage roofs that we have to plow with a special rubber-edged blade because of the expansion joints on the roofs. And on those roofs, we can only use sand and gravel—no salt."

Because the crew is on-site 24 hours a day, when the snow gets heavy, Cavotta sets up rest areas with coffee and cots where crew members can take



**Cavotta: snow removal 'a demanding service.'**

breaks on an alternate basis.

Equipment includes:

- 2 five-ton trucks with 10-foot road plows;
- two one-ton dump trucks with plows;
- one-ton pickups with plows;
- two-yard front-end loaders that do the heavy work;
- all equipped with salt spreaders.

Cavotta begins a two-week assessment of his snow removal equipment in August. For the most advanced warning of coming snow storms, he subscribes to a satellite weather service.

"Snow removal jobs are longer hours, and require more attention," says Cavotta. "It's a very demanding service, because you're always fighting the elements. I'd much rather landscape than plow snow."

## CHECK LIST: CAN YOU HANDLE IT?

Green industry consultant Ed Wandtke of Wandtke & Associates, Columbus, Ohio, says snow removal can be profitable if you:

- ▶ know the customers' requirements and expectations;
- ▶ know the level of service you are able to provide;
- ▶ know how much work will have to be sub-contracted.

"I often see green industry companies making promises to customers that they cannot keep," says Wandtke. "These companies have over-extended themselves, and could lose those valuable customers."

Here's Wandtke's list of questions you have to answer:

- 1) What snow removal equipment do I have?
- 2) How many qualified operators do I have access to?
- 3) What timeline do my customers demand for snow removal?
- 4) What type of back-up equipment does my company have for major storms?
- 5) Considering typical snow conditions, to what geographical area should I provide these services?
- 6) How much money is needed to make snow plowing a profitable business?



# Snow removal equipment: eliminate any surprises

by RON HALL / Senior Editor

**O**ne of your goals as a snow removal contractor is to eliminate as many surprises as you can before you begin moving snow. This is particularly true when it comes to your equipment.

After all, you can't use weather as an excuse when you're in the snow removal business. It's not like being a day late in mowing a property or building a stone walkway. When it snows, you have to provide service. Now.

But things do go wrong with equipment, even for the most conscientious service provider. One contractor, in fact, says that even in the best snow operations, only 90 percent of everything goes well.

Preparing equipment for snow removal begins well in

advance of the first autumn or winter storm. It starts with matching equipment with the services that you provide.

One of the first mistakes some contractors make is that they don't purchase the right truck for snow removal.

"You should consult a dealer or a snow plow distributor to make sure that you get the truck spec'd properly, that you get a truck with a heavy enough front axle, that you get the proper charging system, that you get the proper transmission cooler, and you get the so-called snow plow preparation package," advises Don Anderson of Scherer Truck Equipment in Auburn Hills, Mich. "You have to make sure that the truck is able to be outfitted with a plow."

Anderson points out that certain extended-cab pickups, because of federal motor vehicle safety standards, can't be outfitted with plows. "That can be a real surprise to a guy who buys a \$30,000 truck," says Scherer.

Rob Harris of Knapheide Truck Equipment Co. in Kansas City adds that it's also important that the proper size plow is fitted to each truck. This information is readily available from snow equipment manufacturers. Or, consult with a knowledgeable dealer or distributor; they'll be glad to help.

### Maintenance

Larry Wright of Wright's Landscape Services whose company provides snow removal in the "down river" area



## Tip #3:

*If you don't have a full-time mechanic on staff, have a good list of people you can rely on in emergencies.*

of Detroit, recognizes the importance of matching the proper equipment with jobs—and of maintaining his equipment, too.

Two areas in his trucks—mostly Ford F350s and F450s and several larger trucks like F700s—receive special consideration: transmissions and electrical systems.

"We make sure that all of our trucks go into the transmission shop every fall, before winter, and the transmission fluid is drained, and they check all the filters and evaluate the condition of the transmissions," says Wright. (After 20 years of professional snow removal, Wright strongly favors automatic transmissions, even in larger trucks. "The fatigue on a driver is real tough with a stick shift. On a small truck, I wouldn't even think about using a stick shift," he says.)

"Electrical problems are insidious because you don't see them coming," says Wright. For instance, an electrical short can play havoc with a vehicle's lights. Hint: make sure that when an installer puts a dump body on a bare chassis and cab that he uses weather-tight sealed connections for splicing into the wiring harness.

As far as heavy duty items like plows, Wright says regular inspections will usually turn up cracks and evidences of fatigue before they fail. He urges his operators to periodically look over their equipment.

"If you're big enough to have a full-time mechanic on your staff, that's fantastic," he adds. "If not, you should have a pretty good list of people you can rely on for emergency service on your equipment. Whether it's somebody who can come out and do some welding, or a mechanic. Having someone with a strong electrical background who can trace those types of problems quickly is important, too."

Wright says snow removal equipment has improved quite a bit in the 20 years he's been in business. He started out using four-speed Jeeps, and he remembers some contractors still using plows that they had to shove by hand into the angle that they desired. Now, of course, electronic controls from inside the cab make blade operation a push-button affair.

Also very handy, he says, is the quick-attach plow mounting systems. (Western Products' UniMount System and Fisher Engineering's Minute Mount are examples.) This allows a contractor to remove the plow mounting assembly, including frame, lights, and pump very easily.

Even with these improvements, it's still essential that you prepare your trucks and equipment now to avoid those mid-

winter surprises. Remember, if your equipment isn't working, you aren't making money.

### Spreaders

You also need the proper spreading equipment for any de-icers you will be applying.

"Someone riding in the back of the truck with a shovel is a waste of time, money and material," says Bob Guy of Akzo Nobel Salt.

Some smaller spreaders use a crank or run off the truck's electrical system. Other, bigger, spreaders run off the truck's primary drive and give a much more accurate dispersal.

"I'm partial to several types of polyethylene hopper spreaders that mount on the back of a pick-up," says Guy. "You can put a couple hundred pounds of de-icer straight from the bag into the hopper."

If you don't calibrate your equipment frequently and use too much material, it's hard on the plant life, it's hard on the concrete, and it's hard on the cars. Highway departments calibrate spreaders once a month, Guy notes. Landscapers should calibrate as often as possible, and check to make sure that there are no blockages before every snowfall.

## Train, train, train

In the Minneapolis area, Henning, Rhode & Associates provides snow removal for a sizable number of townhouses, condos and some commercial property, too. But George Rhode says that his company wouldn't put even an experienced employee into one of its 35 trucks without proper training, much of it hands-on.

"They usually ride with an experienced person first," says Rhode. "Then they get turned loose, but with supervision from somebody else that's close by, maybe on the other side of the parking lot or on a nearby driveway."

This training also includes three or four hours by one of the company's three mechanics about how snow removal equipment works, with some instruction on diagnosing minor equipment problems that can be remedied on the street.

"When it snows, we usually put everything out there. We're going at it hard right from the beginning, so that if something goes wrong, we're not behind," says Rhode.

## Snow removal services help contractor stay productive year round.

"Being able to clear snow is a real added value I offer my clients. I have a snowthrower, dozer blade and rotary broom, and my system lets me change attachments fast, without tools. I'm a real believer in zero-radius maneuverability. It lets me get into spots other guys just can't reach with bigger or less maneuverable equipment. And it is a lot faster than the smaller hand-pushed snow blowers."

— Mark Moyer, Kirksville, MO



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Multipurpose dozer blades remove heavy snow, slush or sleet.



V-snow plow clears walkways.

Call or write for the name of your nearest dealer and a "hands on" demonstration.

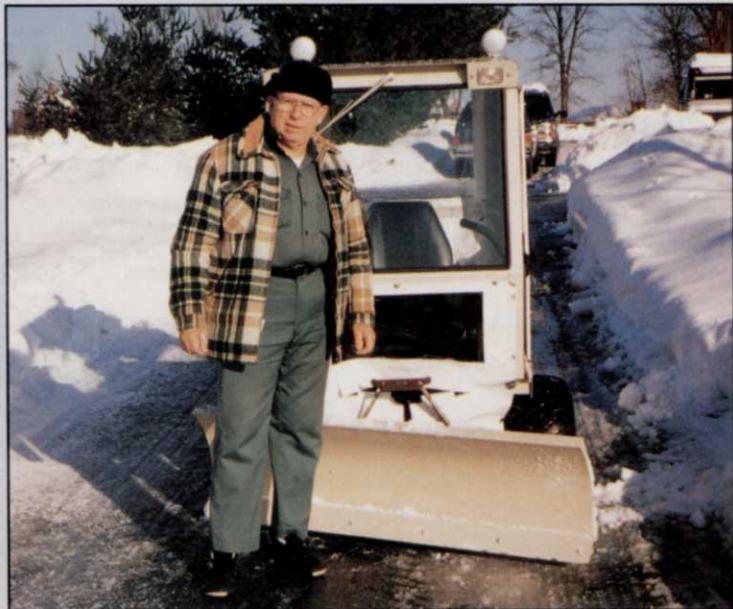
First to Finish...Built to Last

**GRASS HOPPER**  
YOUR NEXT MOWER

## Grasshopper passes the test in the worst storm of the decade.

"More than 25 inches of snow fell. Even though 1-2 inches fell each hour, we were able to keep the driveways in our area clear with our Grasshopper. The cab enclosure allowed us to stay warm for long periods of time – even with a minus 20° F wind chill index."

— Charles McIntire, Elkton, MD



# Let it Mow.

## When it shines . . .

Your Grasshopper turns into a high-efficiency zero-radius mower that lets you trim while you mow. Built for comfort, productivity and endurance, your Grasshopper will give you dependable service all year long, season after season.

## Switch attachments in minutes without tools.

Grasshopper's Quik-D-Tatch® mounting system\* easily connects a deck or attachment to the power unit and eliminates the alignment hassles often associated with switching attachments and deck sizes.

Other productivity tools include:

- Quik-D-Tatch Vac® Collection Systems
- Dethatcher • AERA-vator™ • Wand Vac™
- ROPS • Sunshade Canopy

Let it pick up leaves, mulch and aerate. Grasshopper lets you handle more jobs with the same machine.



**GRASSHOPPER is number one in productivity.** The exclusive Combo Mulching™ Deck\* with full-flotation option, lets you mulch, discharge or bag with the same deck for superior results in varying conditions.

\*patent pending

## A sample contract for snow plowing

The following is a sample contract that can be used with commercial/industrial clients.

Beware: it is only a sample,

covering some of the basic contingencies that historically have been forced upon contractors by fickle clients and bad weather conditions.

You may not be comfortable with some provisions. Your clients may not be comfortable with some provisions. So tailor this sample to fit

your individual situation. And, after devising your own version of this contract, please consult your attorney.

### SNOW PLOWING CONTRACT

To: \_\_\_\_\_ Date: \_\_\_\_\_

Time Limit: This quotation is firm for \_\_\_\_\_ days.

Contact Person: \_\_\_\_\_ Project: \_\_\_\_\_

Location: \_\_\_\_\_  
\_\_\_\_\_

#### We propose to furnish labor and equipment to plow snow for the following areas:

(Describe areas by sketch and/or monuments)

(Areas not covered by proposal)

This bid is based upon a season price of \$\_\_\_\_\_. The season shall commence \_\_\_\_\_, 19\_\_\_\_, and shall terminate \_\_\_\_\_, 19\_\_\_\_\_.

Snow plowing is to commence within a reasonable time after the accumulation reaches a minimum of \_\_\_\_ inches, but not before it ceases to fall. Snow depths in excess of \_\_\_\_ inches will be plowed at an additional charge of \$\_\_\_\_\_ per inch. Snow depths shall be determined by the official report of the National Bureau and General Weather Service.

If any equipment other than a snow plow, snow blower and snow shovel is required to clear snow from the area to be plowed (i.e. front end loader, dump truck, etc.), an hourly rate of \$\_\_\_\_\_ per man shall be charged to the customer, along with any other costs incurred, including rental fees for such equipment. Work involving the use of extra equipment as described above shall be performed within a reasonable period of time upon completion of the contractor's regularly scheduled route.

If the customer so elects that his/her place of business should be plowed before business hours, and a snowfall necessitates an additional plowing, the customer will be charged \$\_\_\_\_\_ for the addi-

tional plowing. If the customer elects to have additional plowings, please initial here: \_\_\_\_\_.

Drifted snow in excess of \_\_\_\_\_ inches will be plowed at the additional charge of \$\_\_\_\_\_ per time.

Due to variables of temperature, compaction, winds, drifting, piling, etc., it is impossible to guarantee removal to the bare pavement.

It is the duty of the customer to afford access to the subject premises at all times, and the contractor shall not be responsible for failure to perform plowing services when access is denied or unavailable. Furthermore, the contractor shall not be responsible for any delay in rendering services occasioned by the customer's failure to grant access to the designated premises.

Reports of damages must be reported to the contractor within twenty-four (24) hours. Failure to report the damages constitutes a waiver, and the contractor is released from liability.

This written contract may be cancelled by either party with thirty (30) days advance written notice to the other party. Delinquent payments will be due on their due date. Failure to pay on the due date will relieve the contractor from any further liability to plow.

Unpaid balances will be assessed at a charge at the rate of one and

one-half percent (1.5%) per month on the unpaid balance.

The contractor shall not be held responsible or liable for any accidents resulting in injuries due to falls on the customer's property due to weather conditions for any except employees of the contractor.

The contractor will not be responsible for sod damaged by salty snow from streets or by snow piled next to roadways. Also, the contractor cannot be held responsible for scratches or scrapes in asphalt or asphalt curbs. The contractor cannot assume liability for any salt or calcium chloride damage to concrete or wood.

It is the duty of the customer to clear the designated areas of all movable obstacles including, but not limited to, automobiles, trailers, trash dumpsters, etc. Furthermore, any object which remains will be left in place and plowed around, and contractor shall be held harmless for any damage resulting to such obstacles unless the damage shall result from the grossly negligent or intentional conduct of the contractor, its employees, agents or servants.

#### DISCLAIMER:

The owner of the property is presumed to know his property boundaries. The owner will clearly stake or instruct the contractor to stake the areas to be plowed. In the event the areas staked are erroneous, the owner agrees to defend and hold harmless the contractor for any and all trespasses that may result from the owner's failure to properly stake his property. The owners agrees to pay the contractor's attorney fees in defense of the trespass claim.

The season snow plowing price does not include salt or calcium chloride application. Failure to salt or apply calcium chloride may result in unusually slippery conditions which may cause injury to persons or property. Salt will be applied at an additional charge of \$\_\_\_\_\_ per ton. Calcium chloride will be applied at an additional charge of \$\_\_\_\_\_ per ton.

If customer wishes salt and calcium chloride to be applied after each snowfall, please initial this box. The amount of salt and calcium chloride to be applied will be at the contractor's discretion.

If customer does not want salt applications, please initial this box.

If customer does not want calcium chloride applications, please initial this box.

The customer acknowledges that the real property is adequately insured for torf claims.

The customer agrees to defend and hold the contractor harmless from any and all liability, including attorney fees, which the contractor may accrue resulting from the contractor's work on the customer's property.

#### TERMS AND CONDITIONS:

This written agreement contains all conditions and describes all work to be done. This agreement supersedes all previous agreements and any verbal commitments made prior to the date of this agreement.

Unless specifically stated, sidewalk snow removal is not part of quoted rate. Quoted rate does not include front-end loader services.

Accounts that are past due will not be plowed until the account is brought up to date. The customer understands and accepts the fact that delays in payments made to the contractor may result in appropriate legal action being taken to collect monies owed.

If court litigation is begun, the customer agrees to pay the contractor's reasonable attorney fees.

This contract shall be binding inure to the benefit of the parties and their heirs, executors, administrators and assigns.

The customer understands that plowing (or salting) of a particular location may continue to prevail even after plowing (or application of salt). The customer understands that the contractor assumes no liability for this naturally occurring condition. The customer agrees to defend and hold harmless the contractor for any and all trespasses or suits that may arise as a result of this naturally occurring condition.

If sidewalk snow removal is selected as an option: The customer understands that sidewalk crews may not work safely if temperature and wind conditions combine to make wind-chill factors below 0 degrees Fahrenheit. The customer understands that the contractor reserves the right to stop working in these severe conditions so as not to force unsafe working conditions upon its employees.

This contract may be paid in three (3) installments. The first installment shall be fifty (50) percent of the contract price and is due on or before \_\_\_\_\_, 19\_\_\_\_. The second installment of twenty-five (25) percent is due \_\_\_\_\_, 19\_\_\_\_. The third and final installment is due \_\_\_\_\_, 19\_\_\_\_. Failure to make timely installments terminates the contract and relieves the contractor from any further liability to plow the snow.

#### CUSTOMER ACCEPTANCE AND WORK

##### AUTHORIZATION:

The above quotation is accepted as written, and you are hereby authorized to proceed with the work:

By \_\_\_\_\_ Date: \_\_\_\_\_

##### APPROVAL:

This proposal will not be binding upon the contractor until the signed acceptance has been received by the contractor with a minimum payment of fifty percent (50%) of the contract price.

By: \_\_\_\_\_

Title: \_\_\_\_\_

Dated: \_\_\_\_\_

**Thank you for using our service!**

# What kind of pick-up?

by JERRY ROCHE / Editor-in-Chief

Once you've decided to plow snow for a living (or been delegated it by your superiors), the biggest, most important purchase that faces you is the pick-up truck.

Snow plowing demands more from a pick-up than almost any other activity. Constant—almost abusive—changing gears, sometimes rapidly, with extra weight on the front (snow and the plow) and sometimes on the back (a load of de-icing material and/or spreader) means you need heavy duty equipment.

Here are some things you'll want to consider before purchasing a pick-up

truck that will be used to plow snow:

► **Is it a 4x4?** If you're going to be plowing snow, forget buying a 4x2. You need four-wheel drive. Period.

► **Does it come with a "snow plow prep package?"** Many brands of pick-ups can be purchased with such options as heavy duty front torsion bars (to support the weight of the plow), a 100-ampere alternator (for running electronic plow controls, standard and optional lights and heater, all at once), a heavy duty radiator, a heavy duty oil cooler and/or a transmission cooler.

"There are a lot

of what we call 'high-duty cycles' involved in plowing snow," says Ken Mussman of GMC Trucks. "Landscapers can order our snow-plowing VYU option for our ½-ton, ¾-ton and one-ton Sierra pick-ups for \$118. The important thing is to specifically order the snow plow prep package."

► **What kind of torque does the vehicle produce?**

Horsepower is fine, but a high-torquing engine "will allow you to not have to get a running start to plow a bank of snow," says GMC's Duane Paige. "Horsepower will allow you to go faster when you've started moving, but torque provides the power to push heavy objects."

Most vehicles will have torque ratings of 250-380 foot/lbs.

GMC's Vortec V-8 engine gets 410 foot/lbs. of torque, which is more than a standard V-10 engine, according to Mussman.

However, it is also important that you also buy a truck "with a high numerical axle ratio to get the power to the wheels," adds Ford's Tom Baughman. Ford makes the popular F-Series of pick-ups for snow-plowing.

► **Does it have limited slip differential, non-flotation tires and the same front and rear track width?**

"Limited slip rear differential is a major factor in getting out of situations where the plow might get trapped," says Baughman. "Also, non-flotation tires are the ones that are not very wide so they get down to the pavement. They



# THE LEADER IN SNOW & ICE CONTROL!

If your job is snow and ice control, we've got you covered!

Western offers a complete line of hopper spreaders – in 12 ga. steel or 16 ga. 304 stainless steel – along with several models of versatile, affordable tailgate spreaders.

The PRO-FLO 2™ tailgate spreader, for example, is made



of high-strength polyethylene and powder coated steel, and includes a belt conveyor to assure positive feed of all materials, including wet sand.

Western snowplows and spreaders – the choice of snow and ice control professionals for over 45 years!



WESTERN PRODUCTS 7777 N. 73rd Street Milwaukee, WI 53223

World Wide Web <http://www.westernplows.com>

## Tip #4:

*What to look for: four-wheel drive, high torque and a snow plow 'package,' at the very minimum.*

should also have a relatively aggressive tread pattern for biting into the pavement once they get to it. And the front and rear track must be the same so the tires will roll in the same rut and you don't lose power by making the front and rear tires both cut a path through the snow."

### ► Does it come with interior amenities?

"In the Sierra, you can run everything at once," says GMC's Paige. "You don't have to unplug something to do something else. There are three power ports to accommodate a cigarette lighter, a cellular phone or mobile radio and even a portable computer."

A sliding rear window helps in situations where you'll be backing up and the window might be frosted. Good ventilation will help keep you cool (yes, it'll get surprisingly warm under your jacket if you're working the truck hard). As a matter of fact, Ford has a heater/defroster with a halfway stop that allows you to use both at the same time, at enough power that your front window is defrosted and your feet keep toasty.

In the long run, vinyl seats and mats will pay off because it will get wet inside, and any moisture that is retained can quickly ruin the cab.

### ► What are heavy duty maintenance requirements?

With most pick-ups that are being used for heavy jobs like snow plowing, you will need to perform standard maintenance at narrower intervals. GMC and Ford, for instance, publish two maintenance schedules in each owner's manual: one for everyday light driving and one for heavy duty driving that puts added stress on components.

► **Is expert plow installation available?** Because of the relationship between the airbag (which is normally adjusted to deploy when the truck hits something) and the plow (which normally "hits something" hundreds of times a day), the airbag's trip mechanism must be adjusted so it doesn't blow up in your face everytime you push a load of snow.

"When we develop our vehicles, we engineer them for snow plowing," says Ford's Baughman. "The F Series is engineered to be as friendly as possible with respect to airbag deployment. We did computer modelling and designed 'transparent' snow plow brackets to make the magic of the airbags work."

► **Does the vehicle come with safety equipment, either optional or standard?** Besides four-wheel drive and airbags, you'll want four-wheel anti-lock brakes, running lights—and good back-up lamps for conditions where the back windows might be frosted up.



Four-wheel anti-lock brakes will allow you to hit the brakes on slippery pavement without spinning and yet you'll still be able to steer the vehicle in the desired direction. Four-wheel anti-lock brakes also brake the vehicle quicker than rear-wheel anti-lock brakes—and much quicker than disc brakes.

Running lights come in handy during early-morning hours when the sun hasn't quite peeked over the horizon. There is a danger that the driver may become so involved with his plowing duties that he becomes unaware of other vehicles around him. Special running lights will notify other vehicles of a plowing operation in progress, especially in those hours when other vehicles might be harder to see. "Many of the trucks we sell are white, and snow is white," says Mussmann. "In those situations, it's a good idea to have extra lights."

► **Finally, what about other goodies?** Here are some to consider:

- A block heater like the kind Ford builds into the engine housing. The owner simply unwinds an electrical power cord, plugs it in at night, and when the engine starts in the morning it doesn't take as long to warm up.
- Automatic transmission "so you can pay attention to all the things you have to do," notes Baughman. Because plowing snow is hard work, even from the cab of a pick-up, you'll also probably avoid a lot of sore muscles by the end of the day with an automatic tranny.
- Enough rear payload to carry de-icer and a spreader in the bed. Don't forget, however, that you'll be using the same truck during the summer and might be carrying heavier objects then.
- Most of all—bottom line—the main thing to remember before you buy your snow plowing pick-up truck is best voiced by GMC's Paige:

"The truck you buy should be a smart business investment."





# Pour on performance, profits with de-icing salt

by ROBERT GUY / Highway Field Sales Manager, Akzo Nobel Salt

**I**t's that time of year again. September not only marks the children's return to school, but also signals the time to begin planning for the business that occupies the winter months: de-icing.

An understanding of how the various de-icing products work, coupled with knowledge of proper application techniques, will provide for safe stepping in winter, a green landscape in spring—and satisfied customers all year round.

The four halide salts used as de-icers are:

- magnesium chloride,
  - calcium chloride,
  - sodium chloride ("salt")
- and
- potassium chloride ("potash").

They all have the same chemical-melting capacity. (If you took a pound of each, and kept pouring ice on them until they stopped melting the ice, they'd all melt about the

same amount.) The differences are in the melting rates, which are related to the chemical activity of the individual products.

**Magnesium chloride** provides a very fast melting action and a high penetration rate. However, the melting action does not last very long. Magnesium chloride is so active that it will drain moisture from the air until it dilutes itself so much that the water will freeze again.

**Calcium chloride** has a somewhat faster melting action compared to sodium chloride. It, too, however, draws moisture from the air in a manner similar to magnesium chloride, but at a lesser rate.

**Sodium chloride** provides a long-lasting melting action as a result of the product's chemistry and mixture of fine and coarse crystals.

**Potassium chloride's** melt-

ing action is quite slow and therefore not the best choice for de-icing.

### Which is best?

Salt (sodium chloride) is the most common melter used today. While other melters have different performance characteristics, salt melts the most ice and snow per dollar. A cost comparison of the four de-icing products reveals that potassim, calcium and magnesium chlorides are 4, 7 and 14 times costlier, respectively, than sodium chloride.

Salt is used as a de-icer because it lowers the freezing point of water. The melting action of salt forms a brine layer below the surface of the snowpack. The brine layer prevents water from bonding to the pavement or walkway.

### How much?

The amount of de-icer needed to achieve a desired

## Tip #5:

*Install salt-tolerant plants around the edges of landscapes where you plan to be spreading de-icing materials.*

pavement condition is a function of temperature and weather conditions.

When the temperature drops, two things happen to the ability of any de-icing product to melt ice and snow:

- 1) the total amount of ice a de-icer can melt decreases as the temperature falls, and
- 2) the speed at which the de-icer melts also decreases,

resulting in a longer period of time required to melt the same amount of ice per pound of de-icer applied.

The keys to the effective use of any de-icer, including salt, are to apply the proper amount based on the weather conditions and to allow sufficient time for the melter to work. This is particularly important at lower temperatures.

The effective temperature range for many common melters is often a point of discussion among snow-fighting professionals. Frequently, a set temperature is given for each di-icer; however, most de-icers continue to work well in the low-temperature range. Allowing adequate working time—usually 20 to 30 minutes—for the de-icer to perform can significantly reduce the amount of melter used overall. Pouring the salt on, five applications five minutes apart, is very wasteful and very expensive.

Another salt application procedure in the experimental

stages is "pre-salting." The idea behind pre-salting is to apply de-icing salt to the surface area prior to the winter storm. An application of de-icing salt 20 minutes before a snowfall delays the initial application of salt during the snowfall and can ultimately eliminate the final application of salt, thereby reducing product and labor costs.

Akzo Nobel has 95 depots across the country. It also offers valuable information on salt storage, application and estimation through a series of seminars. For more information, phone toll-free (800) 752-SALT.

## Application tips

Different conditions call for different approaches to de-icing salt applications. Salt industry manufacturers, working with snow-fighting professionals, have formulated the following guidelines for various weather conditions.

**Temperature: near 30° F.**

**Snow and sleet:** Apply .40 lb. of de-icing salt per 100 sq. ft. surface area. If snow accumulates, plow and salt at the same time.

**Freezing rain:** Apply 0.20 lb. per sq. ft. of surface area.

**Temperature: below 30° F.**

**Snow and sleet, surface starting to get slushy:** Apply 0.25 to 0.67 lb. of de-icing salt per 100 sq. ft. surface area. If snowfall builds up, plow and repeat de-icing procedure.

**Snow turning to freezing rain:** Apply 0.25 to 0.30 lb. per sq. ft. of surface area.

**Temperature: below 20° F.**

**Dry snow:** Plow only; wait to apply salt. Apply de-icer to wet or icy areas.

**Snow and sleet, wet road surface:** Apply 0.45 to 0.67 lb. per sq. ft. of surface area. If snow or sleet accumulates, plow and salt simultaneously. If temperatures rise, reduce salt amount to 0.45 lb. per 100 sq. ft. of surface area. Allow salt to act before plowing.

**Temperature: below 10° F.**

**Snow, sleet, with packed snow or ice:** Apply 0.67 lb. of de-icing salt per 100 sq. ft. of surface area. When snow or ice turns to slush, start plowing. Continue applying salt and plowing until you have safe surface.

## SALT-TOLERANT SPECIES

Plant type	Excellent	Good
Cool-season turf	tall fescue	perennial rye
	creeping bent	colonial bent
Deciduous trees	Norway maple	shagbark hickory
	horsechestnut	Russian olive
	tree of heaven	white ash
	honeylocust	largetooth aspen
	cottonwood	Lombardy poplar
	black locust	trembling aspen
Deciduous shrubs		choke cherry
		pear
		mountain ash
		red oak
		burning bush
		honeysuckle
Conifers		Japanese tree lilac
		common lilac
	blue spruce	red cedar
	jack pine	juniper
	mugo pine	
	Austrian pine	



# Akzo Nobel Salt will keep you going for years and years and years and y

You've relied on us for years. You can count on us next winter, and well into the next millennium. Whenever there are roads to be cleared, Akzo Nobel Salt will be there, providing the ice-control salt and other deicing products you need. And we just keep getting better.

We are improving our service to you by expanding our Cleveland and Avery Island, La., mines and launching the largest salt distribution center in North America, the Retsof Distribution Center. And, most important of all, we're putting the finishing touches on an unparalleled, integrated supply network of both domestic and international sources of salt.

We are well stocked and ready to deliver deicing salt for all your present and future needs. Remember — during the dreaded Winter of '96, Akzo Nobel Salt came through when others could not. We're proud of our record. And we intend to maintain it.

Call us 24 hours a day, seven days a week. We'll be here. What else would you expect from the world's largest deicing company?



**Salt Fact.** 90% of Akzo Nobel Salt customers say our service is "outstanding."\*

Call 1-800-752-SALT for more information.

\*Customer Satisfaction Survey, 1996.



## AKZO NOBEL

Akzo Nobel Salt Saves Lives.

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## De-icers have different uses

Akzo Nobel is America's largest supplier of salt products for highway safety. Marketed under the "Diamond Crystal" brand name, the product mix includes Halite, Calcium Chloride and JiffyMelt.



Halite de-ices walks and driveways, and helps to keep them ice-free well below freezing. Sodium chloride crystals will not chemically attack concrete or harm vegetation when used as recommended, Akzo Nobel notes.

Calcium Chloride is the most ecologically safe way to melt ice on walkways and driveways, according to Akzo Nobel. Runoff will not harm plants or the water table, and the product will not contribute to concrete spalling.

JiffyMelt is a specially formulated de-icing blend of calcium, potassium and sodium chlorides to minimize damage to vegetation and paved surfaces, without sacrificing the ice-melting capacity of rock salt.

For more information, phone (717) 587-9465 or

Circle 296

## Snowplows, spreaders for commercial users

Fisher Engineering snowplows feature trip-edge blade design and three hydraulic options.

When a Fisher blade strikes an obstacle, the lower edge trips back, compressing the springs on the backside. When the obstacle is cleared, spring tension is released, returning the edge to its normal position. Because the blade remains upright when it hits an obstacle, plowed snow out in front of the blade stays put.

In addition to the traditional belt-driven, cable-operated hydraulic system, the Electric Clutch/Solenoid valve system is reliable, "on-demand" like an electric clutch and fast. (A third option, the Fisher Electric Hydraulic Pak, is also available.)

For more information, phone (207) 594-4446 or

Circle No.297



## Four plows meet every requirement

Western Products has four lines of snowplows to meet the requirements of every type of plowing need: Sport/Utility, Standard, Pro-Plow and the Heavyweights lines.

The newest addition, the Poly plows, feature improved snow rolling action.

Western also sells hopper-type, bed-mounted and tailgate spreaders. The newest tailgate model, the Pro-Flo2, can be filled to 1,200 lbs. It has a belt conveyor to assure positive feed of all materials, including wet sand.

For more information, phone (414) 354-2310 or

Circle No.298

## 'No-clog' snowthrower, dozer blades do it all

Grasshopper offers a line of snowthrower attachments and dozer blades for its full line of zero-radius mowers.

The Grasshopper snowthrower attachment is available in 48- and 60-inch widths. Both sizes deliver "no-clog" performance, even in deep or heavy, wet snows, Grasshopper says.

A discharge spout rotates a full 180 degrees to deliver snow up to 20 feet. The attachment features heavy-gauge welded steel, a high-speed 12-inch diameter auger with heavy-duty 3/16-inch flighting and a built-in heavy-duty scraper blade. A cold-weather enclosure, with optional 16,000-BTU heater, is also available.

The 48- and 60-inch multi-purpose angle dozer blades can be used to move snow or dirt, sand and gravel. The 60-inch V-Snow plow is perfect for sidewalks, Grasshopper claims.

For more information, phone (316) 345-8621 or

Circle 299



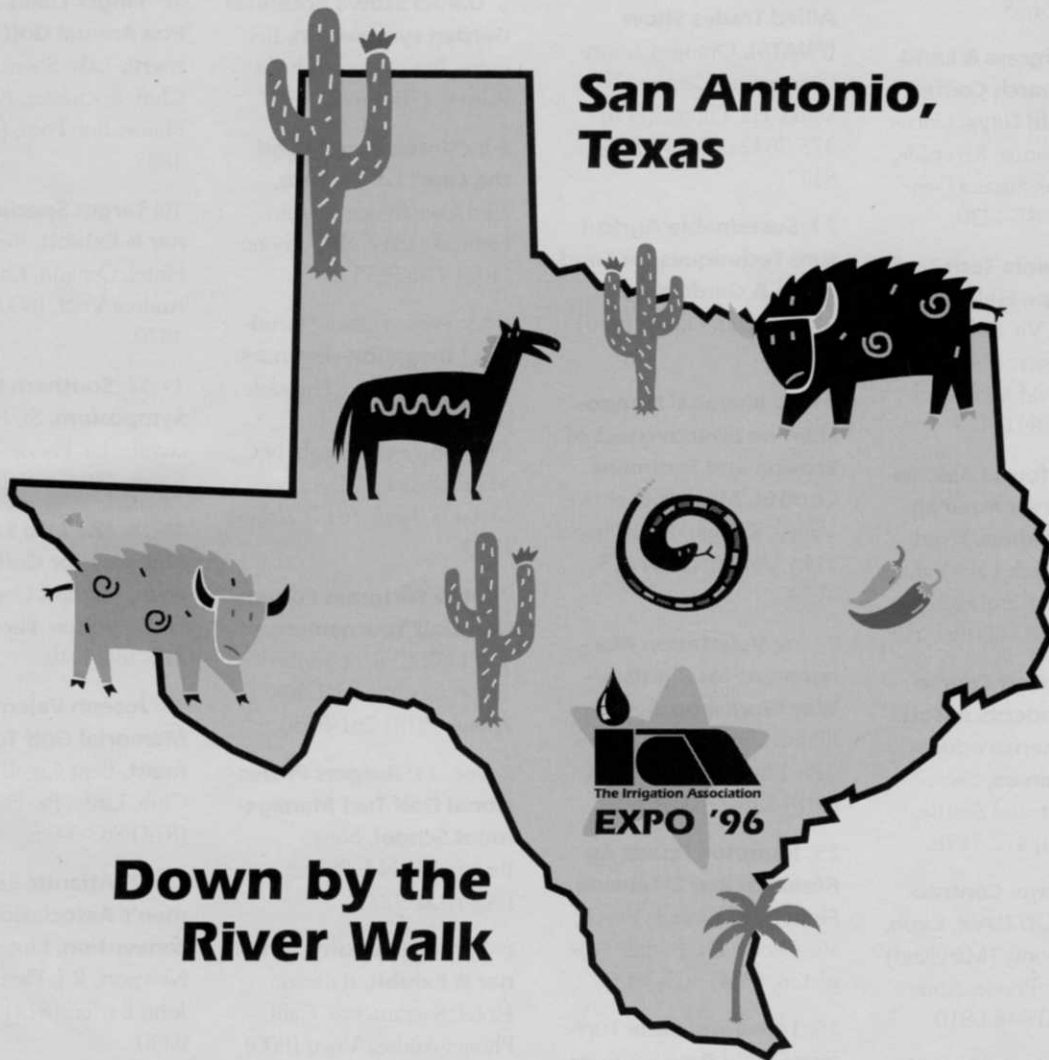
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# Events

## SEPTEMBER

**16-18: Pacific Northwest Chapter ISA training conference**, Yakima (Wash.) Convention Center. Phone: (206) 784-1945.

**17: "Building with Trees" seminar**, Dallas. Phone: (402) 474-5655.

**17-18: Turfgrass & Landscape Research Conference & Field Days**, University of California, Riverside, Calif. Phone: Susana Denney, (909) 787-4430.

**17-19: Virginia Tech Turf & Landscape Field Days**, Blacksburg, Va. Phone: Dr. Dave Chalmers (540) 231-9738 or David McKissack (540) 231-5897.

**17-19: California Association of Nurserymen annual convention**, Hyatt Regency, North Lake Tahoe, Nev. Phone: Carol Hutchings, (916) 567-0200.

**17, 18, 19: Golf Course Superintendents Association of America educational seminars**, Sacramento, Calif. and Seattle. Phone: (800) 472-7878.

**18: Landscape Contractors of Md./D.C./Va. Expo**, Howard County (Maryland) Fairgrounds. Phone: Anne Trone, (301) 948-0810.

**18-21: Galabau 96 (trade fair for landscaping, sports, rec areas, playing fields, golf courses)**, Nürnberg, Germany. Phone: Kathy Donnelly, (508) 371-2203.

**19: "Winning Fields" seminar**, Doubleday Field,

Cooperstown, N.Y. Phone: (800) 873-8873.

**19: Yoder Brothers Fall Field Days**, Leamington, Ontario, Canada. Phone: (800) 232-9557 or (330) 745-0617.

**19-22: Florida Nursery & Allied Trades Show (FNATS)**, Orange County Convention Center, Orlando, Fla. Phone: (800) 375-3642 or (407) 345-8137.

**21: Sustainable Agriculture Techniques for Landscape & Gardening**, Marin, Calif. Phone: (916) 756-6967.

**23-25: National Symposium on Effectiveness of Erosion and Sediment Control**, Marriott-Crabtree Valley, Raleigh, N.C. Phone: Toby Vinson, (919) 733-4574.

**24-25: Vegetation Management for Rights-of-Way Workshop**, Southern Illinois University, Carbondale. Phone: Sandy Rhodes, (618) 536-7751.

**25: Hampton Roads Ag Research and Extension Field Day**, Virginia Beach, Va. Phone: Dr. Bonnie Appleton, (804) 363-3906.

**26: Transition Zone Turfgrass Field Day**, Southern Illinois University, Carbondale. Phone: Sandy Rhodes, (618) 536-7751.

**26: Target Specialty Seminar & Exhibit**, Doubletree Hotel, Ventura, Calif. Phone: Andrea Vogt, (800) 352-3870.

**26: Yoder Brothers Fall Field Days**, Hightstown, N.J. Phone: (800) 232-9557.

## OCTOBER

**3: Yoder Brothers Fall Field Days**, Pendleton, S.C. Phone: (800) 232-9557.

**5: Daniel Stowe Botanical Garden symposium**, Belmont, N.C. Phone: Sheila Palmer, (704) 825-4490.

**6-8: "Trees, People and the Law" conference**, Lied Conference Center, Nebraska City, Neb. Phone: (402) 474-5655.

**6-15: Flowtronex "Final-Net" irrigation seminars**, Columbus, Ohio; Philadelphia, Washington, D.C.; Charlotte and Raleigh, N.C.; Myrtle Beach, S.C. Phone: Melinda Swan, (614) 262-1443.

**7: Ohio Turfgrass Foundation Golf Tournament**, The Golf Club at Yankee Trace, Centerville, Ohio. Phone: (614) 261-6750.

**7-Dec. 13: Rutgers Professional Golf Turf Management School**, New Brunswick, N.J. Phone: (908) 932-9271.

**8: Target Specialty Seminar & Exhibit**, Radisson Hotel, Sacramento, Calif. Phone: Andrea Vogt, (800) 352-3870.

**8-10: West Texas Turfgrass Conference and Trade Show**, Western Texas College, Snyder. Phone: Pam Deeds, (806) 354-8447.

**8, 9, 11: Golf Course Superintendents Association of America educational seminars**, Oklahoma City, Okla., Billings, Mont. and Honolulu. Phone: (800) 472-7878.

**10: Finger Lakes AGCS Poa Annual Golf Tournament**, Lake Shore Country Club, Rochester, N.Y. Phone: Bob Foos, (716) 621-4833.

**10: Target Specialty Seminar & Exhibit**, Red Lion Hotel, Ontario, Calif. Phone: Andrea Vogt, (800) 352-3870.

**11-12: Southern Garden Symposium**, St. Francisville, La. Phone: Larry Smart, (504) 635-6303.

**13-15: The Info Superhighway for Golf conference**, Marriott Copley Place Hotel, Boston. Phone: (888) 275-3643 x40.

**14: Joseph Valentine Memorial Golf Tournament**, Bent Creek Country Club, Lititz, Pa. Phone: (814) 863-3475.

**15-17: Atlantic Seeds-men's Association annual convention**, Hotel Viking, Newport, R.I. Phone: Dr. John Baylor, (814) 237-0330.

**16: Sustainable Agriculture Techniques for Turf & Golf Course Management**, Seal Beach, Calif. Phone: (916) 756-6967.

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Turf managers who buy natural organic **Milorganite** fertilizer this fall will help support turfgrass research. According to Milorganite's Larry Lennert, the company will donate \$10 for each ton of Milorganite purchased to the buyer's favorite turfgrass research organization. "Milorganite and its distributors have long sup-

ported turf research at the national level through the O.J. Noer Research Foundation," Lennert says. "This program enables customers to support research at the local level." Milorganite is celebrating its 70th year of serving professional turf managers with natural organic fertilizer.

**Jacklin Seed** received the 1996 Idaho Governor's Export Marketing Award for Service from Lt. Gov. Butch Otter at the World Trade Day in Boise this summer. Jacklin now exports 35 percent of its seed to more than 50 countries around the world. Elsewhere at Jacklin, Hagen Ledebor is new manager of Grower Services

Operations in Oregon. He will be responsible for managing all aspects of contracting and placing Jacklin varieties in the Willamette Valley.

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**Encore Manufacturing's** dealer base showed growth of 12 percent this year, according to company president Dick Tegtmeier. Sales were buoyed by the introduction of the Z42 dual-market riding mower for commercial users and consumers alike.

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**United Horticultural Supply** added a Southern Division, completing its coverage of the United States to the professional turf, lawn care, nursery and specialty horticultural markets. John Walther is manager of the new division (N.M., Texas, La., Ark., Miss.).

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Roger Bechle and Bart Fox join **American Cyanamid** as territory managers for turf, ornamental and pest control products. Bechle will handle the Northeast while Fox will service the Southwest.

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**Ransomes** is new official supplier to the PGA European Tour and European Senior Tour, which includes the British Open Golf Championship and the Volvo PGA Championship. The company's products will be recommended for use at all tour stops for the next three years.

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**Plant Health Care** acquired Industrial Services International, maker of Terra-Sorb water polymer gel products. James J. Quinn, previously president of ISI, is now a vice president for PHC, a leading



supplier of plant health care-related products and services to the horticulture, forestry and land restoration industries. PHS will warehouse and package Terra-Sorb at its Pittsburgh manufacturing facility.

Agway Inc. of Syracuse, N.Y. intends to sell the assets of its subsidiary, **Roberts Seed** of Tangent, Ore., to **Pickseed West** of Tangent, Ore. "The two companies not only share common trade objectives, but have developed close industry ties over the years," a press release says. "The combined entity will result in one of the largest seed companies in the Pacific Northwest."

**Jacobsen** is celebrating 75 years as a manufacturer of professional golf and turf maintenance equipment. "There's a new spirit at our company," says president Phil Tralies, "a bright, new spirit of enthusiasm and commitment to the products we build and to the golf and turf professionals we serve." According to the company, Jacobsen products are found on more than 75 percent of all the golf courses on Earth.

Two months ago, Vice President Al Gore and members of the Green Chemistry Partnership presented **Monsanto** with the President's Green Chemistry Award for new synthesis technology. Monsanto received the award because it developed a new "zero-waste" chemical process to make disodium iminodiacetate (DSIDA), a key chemical intermediate in the production of Roundup herbicide.

Gary Neyman is new product group manager for **Lebanon Turf Products**. He will be responsible for the sales and marketing of Country Club, Country Club-2, Nx-Pro and IsoTek professional turf products.

The **J.R. Simplot Co.** and **Best Professional Turf Products/Apex Professional Horticulture Products** have selected Swanson Russell Associates as their marketing communications agency of record. **LM**

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