



Loyet checks every property his company maintains at least once a week. He confers with workers like Josue 'Joe' Sanchez almost daily.

sonal employment, are replacing the industry's traditional labor mainstay—the young, white, male U.S. worker.

A 1996 LANDSCAPE MANAGEMENT magazine survey discovered that 20 percent of green industry operations now employ at least some "non-English speaking" people. Fourteen percent of landscape contractors told us that their labor workforces are now predominantly "non-English-speaking." (By contrast, about 12 percent are mostly high school or college-age U.S. youths.)

Increasingly, the green industry is employing Hispanics—mostly Mexicans—as its labor of choice.

Consider St. Louis. Less than a decade ago, a Mexican worker on a landscape crew in St. Louis was rare. Now, some of the top landscape contractors in that marketplace don't feel like they can compete without them. They've been feeling that way since a branch office of the Brickman Company, one of the nation's largest landscape companies, began using Mexican workers on its maintenance crews. That opened competitors' eyes, especially when they saw how these crews produced.

#### Out of necessity

"Our back was against the

pany will drive into the city to meet him and take him to the apartment he'll share with several other Mexican workers.

#### A changing labor market

Need reliable laborers for your mowing crews or to tend your golf courses?

Find yourself a Hugo, and a few others just like him. Get some Hispanic workers who are used to working outside on a farm. On a ranch. In an orchard. Mexicans. Guatemalans. Nicaraguans.

"You get two things with Mexicans," says Robert Wingfield, a Dallas-based labor contractor. "Mexicans show up for work every day. If you just got the increased reliability, you'd be ahead of where you are. But you're also going to get anywhere from 10 to 30 percent more production."

Okay, so that may not be the politically correct way to put it. But what's politically correct about the hot, long hours demanded from a landscape laborer? Hispanics, because of their willingness to work long hours at mostly sea-

## Getting off to a good start

Joe Loyet of Loyet Landscape Maintenance uses the following procedure to welcome each Mexican worker to his St. Louis-based company:

- ▶ Greet the new hire at the downtown bus station.
- ▶ Drive the new employee to a Denny's for a meal, where Loyet and the new employee get to know each other better.
- ▶ Proceed to Loyet's office/maintenance facility just outside of St. Louis. Here Loyet checks, photocopies, and files the documents that establish the Mexican worker's identity and employment eligibility. Loyet and the worker fill out a Form I-9, the Employment Eligibility Verification that must be completed for each new employee.
- ▶ Provide the new hire with a company work uniform and hat.
- ▶ Drive to a K-Mart store and provide the employee with boots and, if needed, work pants.
- ▶ Take the new hire to one of the three adjacent house trailers that Loyet's company leases just outside of the city. The employee will share the trailer with several other Mexican workers. Allow the employee to rest the remainder of the day. "I tell him, 'Take a siesta, mi amigo, the other workers will be back later.'"
- ▶ After the first day of work, Loyet advances the new employee \$50 cash to tide him over until payday.

wall when we brought in our first Mexicans. We just could not keep a stable labor force on the maintenance end," remembers Joe Munie, founder and president of Munie Outdoor Services in nearby Belleville, Ill. "We had to seek a viable workforce or we were going to have to look at backing out of that."

Joe Loyet, who started Loyet Landscape Maintenance 12 years ago, adds: "It was a problem getting people to come to work every day. I knew we had to do something different." That something, of course, was to find Mexican laborers for his company. Contacting Robert Wingfield, a Dallas labor con-

tractor, he did just that.

At about 5:30 a.m. every day, Loyet's employees begin arriving at the company's office/maintenance building in a rural area just south of St. Louis. The Mexicans come in small groups because most of them share three leased house trailers in a nearby trailer park. Most also don't have U.S. drivers licenses.

Each employee checks and loads his own equipment onto the trucks. Mexicans can be picky about the condition of their mowers, says Loyet. They want their mowers to operate at peak efficiency so that they

*cont. on page 13*



# Superintendents like Hispanic workers, too

Superintendent Bruce Williams has employed Hispanic laborers for more than 20 years at Bob-O-Link in Highland Park, Ill. His dad, Bob, first employed them at the course in the 1960s.

Bruce Williams says their willingness—and in some cases, their preference—to work a short year makes them a good fit for seasonal golf course work.

"We have a seven-month need for labor," explains Williams. "It's difficult to find [local] people to work only seven months of the year. Many [Hispanics] come up from Mexico or Texas, and work from April 1st until October 31st, earning a very livable income. Then they



Hector Carrera mows the Bob O' Link fairways. He is one of a family of four employed at the club, which has employed three generations of the same family.

return to their families." Ten of his 18 crew members are Hispanic.

Williams says that Hispanic workers "love being outdoors, being with the soil. They're good at it, and they don't mind working whatever hours the job requires."

Some of the workers live in housing on the course.

"In the late 1970s, we noticed that it was hard for them to find affordable housing near the golf course," says Williams. "The distance they had to drive to get to the golf course was considerable. We built a four-bedroom dormitory where we house eight of our seasonal workers. They don't have to deal with trying to lease an apartment for seven months, and it makes it easier for the seasonality of the job."

## Family ties strong

Hispanic people "want to work," says Randy Wahler of Knollwood Club in Libertyville, Ill., which employs 12 Hispanics in its 18-person crew. One has worked at the course for 18 years.

"All the management books will tell you not to hire friends and relatives, but we have been successful in dealing with referrals to cousins, nephews and sons of past and present employees," says Wahler.

"It's good to get into a good family," adds Wahler, since the fam-

ilies stick together and support one another. Wahler finds his Hispanic employees by word-of-mouth or through family networks.

"Hispanic people are very close," says Wahler. "They're very good people. They share the same work ethic."

## No language barrier

While some speak good English, many do not. Williams says he's fortunate that one foreman can handle all verbal, one-on-one communications. Williams also knows some Spanish himself.

Wahler does not speak Spanish, so he leaves most communication duties to his Hispanic assistant and foreman, both of whom are bilingual. Only three workers do not know any English.

"We allow anyone the chance to grow within the operation itself," says Williams. His irrigation technician has been with the course for 18 years. Another Hispanic worker became head mechanic.

The Hispanics' work style might be described as more evenly paced than that of their American counterparts.

"Americans will work quickly, take a break, work quickly, take a



Alonso Esquivel top-dresses greens at Bob O'Link Golf Club. An 18-year employee at Bob O' Link, Esquivel is also its irrigation technician.

break," says Williams. "Hispanics work at the same steady pace, all day long. It's harder to get Hispanic workers to speed up the pace."

## Sad reality

Without Hispanic workers, Williams says he would have to try to recruit from among high school students who live in affluent neighborhoods surrounding the course. Unfortunately, his experience there has not been encouraging.

Wahler on American youth: "They want easy jobs, making big money. Parents today have spoiled their kids. I don't think they've prepared them for the future."

—Terry McIver





Ignacio Galvan is one of the Mexican workers that Joe Loyet is grooming to be a foreman. Co-worker and crew chief Mark Richardson is in the background.

can put in a full day's work, and earn a full day's pay.

By any standard, Joe Loyet would be considered a progressive employer. He helps pay the cost of housing and, occasionally, buys meals for his workers or hands out phone cards so they can call their families in Texas or Mexico.

"Some of the guys who try to bring Mexicans up here think they can work them like mules; that's not right," he says. "They're human beings, just like me and you. You have to respect them."

#### Business is business

Even so, Loyet, a normally cheerful and outgoing person, can get serious about business which, for him, means going to bed by 9 p.m. most nights, getting up by 4 a.m. and getting to the office by 5 a.m. "I don't believe in threats or in hollering," he says, "but I tell my guys, 'This is a business and this is the way it's going to be.' A guy who doesn't come to work every day is no good to us. We have to take care of our customers."

While Loyet seems to genuinely respect his Mexican employees, not all of them work out. "I'll go right out to a job site and pick them up, call our

accountant and find out how much we owe the guy to that point, pay him and get him out of the system right there," he says. "I'll take him right to the bus station. I'll make sure he gets on it to go home."

His motto is: "Keep them busy, busy, busy; keep them out of trouble."

Says Loyet, "They want hours, 50-plus hours. They're here to work and make money. Most of them send their money home."

#### They're everywhere

The St. Louis labor marketplace is not unique. Hispanic landscape laborers, long commonplace in California and the rest of the Southwest, are now accepted by the green industry in the nation's heartland too. In fact, just about everywhere in the United States.

Laflamme Services of Bridgeport, Conn., has employed Mexican workers for the past eight years. The company started with four, but now employs about 35, says president Ed Laflamme.

**'Some other company will offer them more money and then they're gone,' says Jeff Sanders of Raleigh Turf & Irrigation.**

Even though many don't speak English (or, at least, not very well), they "understand the language of work," says Laflamme.

Laflamme, like Loyet, says he can give many of them employment year-round, but most leave early each winter. To get them to return in spring, and to bring other capable workers, some landscapers offer cash bonuses. "I don't know if I could be in business without them," admits Laflamme.

The Brintzer Design Group of Arlington, Va., employs Guatemalans. Most were displaced by the civil war that raged in their country in the 1980s.

"We employed one Guatemalan as a day laborer. He worked very hard, so when we needed to hire more help, we started hiring his brothers, cousins or friends," says Carroll LeTellier. Now, all but four of Brintzer's crew are Guatemalan.

"We've been in business for 10 years. For the first six or seven years, we were hiring

people who were born and raised in the U.S. It was harder to keep them on year after year," he adds.

#### Money is #1

What motivates Hispanic workers? Money. If they feel like they're not getting enough hours, or if they're offered more money by another company, they can leave in a blink, says Laflamme. "The only thing that keeps them is the money."

Adds Jeff Sanders of Raleigh (N.C.) Turf & Irrigation: "We have one worker, Salvador, who will go home and get me a number of laborers if we need them, but the loyalty isn't there."

That's why Sanders doesn't, as a rule, try to employ them over the winter. "Some other company will offer them more money, and then they're gone," he says.

Money is, indeed, the only reason Hugo says he's leaving his home in El Paso, which he shares with his mother and two sisters, and travels to Ohio to work for nine months.

Waiting for a bus that's already about 10 minutes late, Hugo says he'll be making \$7 an hour with the landscape company, about \$1.50 an hour more than he can make in El Paso. Even so, he says he wouldn't leave, except that the hours are steadier in the north, and the man who owns the company is fair.

—Additional reporting by Jerry Roche and Terry McIver.







The Allmand Bros. tractor-loader-backhoe is rugged.



Elite Trenchers makes six styles of small disc-blade trenchers.



Gehl trenchers feature a heavy-duty digging chain.

# TRENCHERS/ BACKHOES

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Trenchers and backhoes save immense amounts of manual labor.

Laying in-ground electric cables or irrigation pipe, for instance, would be tedious and back-breaking without today's trenching equipment. Because this equipment saves so much labor and time it actually makes these types of projects affordable.

And how would you bust up and remove concrete in preparation for installing a stone walkway without a backhoe? A backhoe is a workhorse, suitable for the rugged digging tasks.

Your task as a green industry manager is to match the jobs your golf course or landscape crew tackles with the proper type and size of digging equipment.

A trencher or a backhoe—even the smallest models—represents a sizable investment for most turf or landscape managers, so it makes sense to match equipment with the tasks for which it's engineered.

Depending on the size and cost of the equipment you're considering and the amount of use you intend to give it, you may want to consider leasing rather than buying. Or, perhaps, sharing costs with a neighboring golf course, grounds facility or a friendly competitor.

**Allmand Bros.**  
**Circle No. 280**  
**(800) 562-1373**

The Contractor TLB compact, heavy-duty tractor-loader-backhoe from Allmand Bros. offers the size and maneuverability needed to get into tight areas. Available with three different air-cooled gasoline engine options: 20 or 25 hp Kohler, or a 20 hp Honda. A 20 hp Kubota, water-cooled, diesel engine is also available. The unit's backhoe attachment offers a 2-foot, flat-bottom digging depth of 8'4" and a breakout force of 3,670 lbs.

**Darby Industries**  
**Circle No. 281**  
**(800) 344-2472**

This full-size hydraulic-drive backhoe is towable behind a half-ton truck. It features 17-foot reach and 6,681 lbs. of bucket break-out force. Built with high-quality hydraulic components and hardened steel bushings at all pivot points. Kohler engine. Optional diesel engine available. Can be towed at highway speeds by light-duty vehicles, without a trailer.

**Ditch Witch**  
**Circle No. 282**  
**(405) 336-4402**

Ditch Witch built the first compact trencher in the late 1940s and has built and sold more than 50 percent of the world's service-line trenchers since then. Ditch Witch offers the broadest range of trencher models. Models 30-hp and



higher are designed to accept interchangeable work models, adding versatility to a single machine. Also, a complete line of trenchless technology products.

#### Elite Trenchers & Concrete Saws

Circle No. 283

(941) 574-1906

Choose from six styles of small disc blade Elite Trenchers: DD6 digs 5 1/4" deep x 3/4" wide; DD8 digs 8" deep, 2" to 3" wide; DD10 digs 10" deep, 2" to 3" wide; DD12 digs 12" deep, 2" to 4" wide; ETI 8 Heavy Duty digs 8" deep, 2" to 4" wide; and ETI 10 digs 10" deep, 2" to 4" wide trench. The ETI 8 and ETI 10 come with larger hp engines and 3/8" x 3/4" rock teeth.

#### Gehl

Circle No. 284

(414) 334-6615

Gehl's three trencher models can be added to skid loaders. Trenching widths from 6" and depths down to five feet. Heavy-duty digging chain with cutting teeth operating on a durable boom. Trencher attachment side shifts for trenching near buildings or foundations. Gehl also has a backhoe that mounts on the skid loader lift arms.

#### Glenncorp

Circle No. 285

(501) 239-4796

The GCI-500 trencher is designed to operate on a three-point hitch. The trencher will operate with either a hydrostatic drive or live PTO. The reservoir is built into the frame. The unit comes with a PTO pump and a two-spool control valve. Glenncorp also offers GCI tractor-mounted backhoe that can be operated from the seat of the backhoe, the seat of the tractor or from the ground. Also a GCI tractor-mounted fronthoe (for 75 hp or larger tractor) with remote controls.

#### JCB

Circle No. 286

(410) 335-2800

JCB says the JCB 2085 MiniMaster is the world's first integral skid steer backhoe loader. It combines the digging ability of a 2-ton mini exca-



Vermeer increased the productivity and versatility of its V-3550 riding trencher with the addition of a backhoe.



Melroe's 325 Bobcat features multi-function hydraulics system allowing simultaneous boom dipper and bucket functions.

vator and the loader performance of a 1323 lb. skid steer loader which makes it unbeatable for working in small spaces. Independent hydraulic systems allow various machine functions to be operated simultaneously. The JCB's Series 2 line of backhoe loaders includes 8 machines in the 14- to 17-foot class, 2-wheel and 4-wheel drive.

#### John Deere

Circle No. 287

(919) 954-6343

Three backhoe models—No. 7 Backhoe for 670, 770, 755, 855 and 955 Tractors; No. 8A for 870, 970 and 1070 Tractors; and 10A for 5000 Series Tractors. No. 7 and 10A feature rigid, 4-point mounting system with more stability, better shock absorption than hitch-mounted systems. No. 7 and No. 8A available with Quik-Tatch system that allows easy hooking and unhooking from tractor. Each model has four buckets to choose from. Digging depths from 7 1/2" to 10 ft., depending on model.

#### Kelley Manufacturing

Circle No. 288

(219) 255-4746

The Kelley B15A Backhoe, with 8-foot maximum digging depth, features Category I three-point rigid hitch for maximum digging power. Double hydraulic swing cylinders provide double swing power and control with the Kelley exclusive patented Hydraulic Swing Cushioning. Bucket sizes of 9", 12", 15" and 18". Replaceable steel wear bushings at major pivot points.

#### Kubota Tractor

Circle No. 289

(310) 370-3370

Kubota Tractor's B5520 and B5520A trenchers are built to be

used on seven of the company's liquid-cooled, diesel-engine hydrostatic tractors. The trenchers dig to a depth of four feet and feature 15 trench-size combinations. Up/down boom arch is 70 degrees/65 degrees. Auger diameter is 10 inches. Speed is up to 600 feet per hour depending on depth and soil.

#### Melroe

Circle No. 290

(701) 241-8700

Melroe's new C-Series model of its 325 Bobcat compact excavator features: multi-function hydraulics system that allows simultaneous boom, dipper and bucket functions without a decrease in cycle time; two-speed travel; new joystick with improved metering; half-pitch tracks for smoother ride; increased boom-up and bucket dump/roll-back speed; lower overall height for easier access through doorways; improved hose routings for better protection. The 325 has a maximum digging depth of 99" and reach of 166".

#### Vermeer Manufacturing

Circle No. 291

(515) 628-3141

Vermeer added a backhoe with a center-mounted operator seat to its tough, reliable V-3550 riding, hydrostatic, rubber-tire trencher. Mounted on the V-3550, the B500 backhoe's bucket has a digging force of 5,978 lbs., and its 12-inch bucket can dig down 68", and rotate up to 126 degrees. A 43.5 hp Deutz engine powers the trencher which can trench depths from 38"-60" at widths of 5"-12". The LM-42 walk-along plow/trencher (43.5 hp Deutz engine) is designed for irrigation and service-line installations; its new V-1150 trencher powered by an 11 hp Honda engine which is handy in areas with narrow, limited access; and its V-5800 trencher powered by a 4-cylinder Cummins 483.9 (59 hp) engine. **LM**



# Cash in on low-cost

by JAMES E. GUYETTE / Contributing Editor

**M**oney spent on employee education programs can mean happier, higher-skilled and more productive workers. This, in turn, can lead to less downtime, less turnover and fewer workplace accidents (an employee indoctrinated in proper safety procedures is less likely to get hurt).

Pat McGovern, owner of International Data Group in Boston—one of the nation's leaders in corporate training—sets aside an amount equal to 3% of the company's payroll for training each year. However, landscape managers need not budget that much, simply because many low-cost and free training programs are available in this industry. It just takes a commitment on your part and a little bit of searching to locate the best opportunities.

An in-house training program at California's Stockdale Country Club has resulted in an "almost perfect" safety record and a better work atmosphere, says superintendent Corey Eastwood. "You have less damage to the machines and less disruptions of the members," he adds. "We use a lot of courtesy—and that's part of the training."

New workers at Stockdale are personally taught and shown the proper care of each machine by the facility's two mechanics, plus there are weekly training sessions. "We go over the operator's manuals," Eastwood explains. "We take each piece of equipment at a time (to study), and when we get done we start over again."

Because Stockdale is located in a warm climate, most workers stay on throughout the year, which means less turnover. In areas where turnover is a concern, an outside training program may lead to a more motivated and stable workforce.

## Just look

The landscape side of the industry is not much different.

"We try to get involved in as many programs as we can," says Ron Wilson, a general manager at Natorp's Landscape, Nursery and Garden Stores of Cincinnati, Ohio. "The safety training has been a tremendous help to the company."

Kate Goewey, Natorp's safety director, says the company gets increased performance and fewer injuries on the job. Ownership is particularly pleased that much of the training has been free or at low cost—and all they had to do was look for it.

Many manufacturers and suppliers are more than eager to provide free training sessions on the various products that they market—just ask. A good place to start looking locally is as close as your community's fire department.

A free session on "fire safety" at Natorp was most enlightening, says Goewey, "because most people do not actually know how to use a fire extinguisher." Goewey adds that any type of safety education will improve the work environment.

The makers of the Bobcat line of equipment conducted free training on their machines, and the workers also got an education on proper chain saw techniques.

The Blount Corporation's Oregon Chain Division markets chain saw replacement parts rather than the whole saw, but they do indeed provide training all over the world.

"We do it for free because a chain saw doesn't know the difference between a log and a leg," says George Ruggles, who heads the Oregon training seminars. "We go through a pretty structured program that many people find beneficial." The two- to three-hour sessions rely on hands-on

demonstrations and a graphic video presentation that grips the students' attention. "We don't have much trouble keeping them awake," Ruggles reports.

The ability of the speaker is important, says Goewey, adding that any instructor's program should be reviewed by a top member of the staff before presenting it to the workforce.

## Training tips

- ▶ Make your seminars part of your work week—pay your people to be there.
- ▶ Ask suppliers and other local sources (landscape associations, garden clubs, parks departments and schools) for speakers.
- ▶ Have a top member of the staff review the instructor's program before it is presented to the workforce.
- ▶ Send employees to training sessions that deal with techniques they can use on the job.
- ▶ Explain starting, break and finishing times at the beginning of the session.
- ▶ If possible, issue hand-outs and workbooks for each subject.
- ▶ Divide sessions into 18-minute (maximum) modules.
- ▶ Emphasize basic techniques. Use step-by-step lists whenever possible.
- ▶ Engage as many of the trainees' senses as possible (see chart). Hands-on demonstrations and graphic video presentations will keep employees alert.
- ▶ Beware of training consultants who offer boilerplate solutions to complex management concerns.



# training programs

"Generally, we're familiar with the speakers," Goewey explains. "I either go myself or we ask around. We won't send anyone to hear a speaker sight unseen." A clunker of a class means that "the people will get bored and they won't learn anything."

## Pay people

Use some caution in deciding which workers to send to which presentation, she suggests. Make sure they are learning techniques that are germane to their job assignment. Sometimes just one employee can be sent, but be certain that he or she has the verbal skills to adequately impart the lessons learned to fellow employees. "They will bring that information back to the crew so they don't lose a whole day of work," she notes.

The workers should understand that training is a priority and not just free time. "Make your seminars part of your work week," advises Goewey. "That means you will pay your people to be there. Although it is common for businesses to use the excuse that the seminar benefits the staff's personal professional development, and therefore you're actually providing an educational service to your employees, let's face it—training benefits your business and that's why you offer it."

Making the choice to offer a training program to employees can be a tough decision for management, simply because of the nature of the business: you're either too busy or else you're laying people off. It's therefore important to be selective in the kind of training program you offer.

Goewey recalls a program in electrical hazard training that cost a whopping \$700 per person. "Can I send 12 people to that? No. Can I devote the time to that? No." A tree crew foreman was sent, and he reported back what was learned.

## Beat the bushes

Programs offered by the cooperative extension service rate high with Goewey: "That's wonderful. It's a minimum fee and they bring in the experts—they pay for the experts and there's nothing wrong with that." Gardening procedures, pruning skills and other techniques are taught in an easy-to-understand style by masters in the field. "They're hiring the experts—your work is done; all you have to do is send your people."

The Red Cross is big on safety seminars,

## RETENTION OF TRAINING INFORMATION, BY METHOD

Reading .....	40%
Writing .....	40%
Listening .....	50%
Seeing .....	50%
Doing .....	80%

as might be expected, but other sources can offer useful education. "We make great use of the Bureau of Workers Compensation seminars," says Goewey. "You've already paid for that in your state" via the fees being charged the business. Sessions are offered in subjects such as ergonomics, power equipment operation and proper use of hand tools.

Beat the bushes to find quality instructors. Ask your suppliers and other local sources, such as landscape associations, garden clubs, parks departments and schools. Some speakers do it for free; others charge, but find out any fee ahead of time before signing up.

If you are a company owner, make sure you are committed to the learning process—especially if you have concerns

over management-type issues. "We can educate groups of workers in a relatively short amount of time, but the real change happens with the management," says Don Willig, a senior consultant with Management Concepts Inc. of Dayton, Ohio.

Many times an owner will be convinced that he or she needs to be all-knowing and in on every decision and technique discussed, but eventually to be successful they have to hire other managers to get the job done. "At some point they have to bite the bullet and get someone to help them or else they will compromise their whole business opportunity," Willig warns.

An owner who has prepared a business plan ("What do we want to be when we grow up?") is better able to deal with outside training. Also, ask colleagues in the business to help find experienced trainers. Beware of a training company that offers boilerplate solutions to complex management concerns.

"No two organizations are typically the same, so you want flexibility and experience in this industry," says Willig. "There are unique things in the green industry that need to be recognized." Steer clear of a training firm that charges a high up-front consulting fee, he adds.

Each staffer at any given company can be made better by receiving advanced training, Goewey believes. "The benefits of a training program are well worth it. In our business, we must be teachers as well as sales people. Not only do we assist customers with selection, we have to help them keep those selections alive and growing." **LM**



**W**ithout an adequate supply of nitrogen the quality of any landscape will suffer, especially the turfgrass.

Nitrogen is available in many forms: totally soluble or slowly available to the plant; organic or inorganic; high or low salt index. All of these forms have their own characteristics and can have very different effects on plant growth. All plants prefer the nitrate or inorganic form of nitrogen, and have little use for the other chemical form of nitrogen, the am-

monical form. The third chemical form, organic nitrogen, is not used directly by plants. When a fertilizer containing nitrogen in the organic or ammonical form is applied to the landscape, it must be changed to the nitrate form before it can be used by the landscape. These changes are accomplished in the soil by bacteria. You do not need to add anything to any soil for these conversions to take place. Be assured that the right bacteria are always available. Examples of these nitrogen forms are found in Table 1.

Those fertilizers listed in Columns A & B are all soluble. So is the organic form urea found in Column C. When applied to the landscape, the nitrogen they contain goes freely into the soil water solu-

tion that surrounds the roots of the plant. If the soluble nitrogen is in the nitrate form, it may enter freely into the plant.

Plants do not always need a lot of nitrogen at one time. A slow, steady growth rate is better than a quick, fast burst of growth, as research has shown. Soluble materials have relatively high salt indexes. High-salt fertilizers can burn plants. If soils and/or irrigation waters already have a high salt level, avoid using these high-salt-index fertilizers.

One fact makes a soluble nitrogen material desirable: it can be applied to the landscape in water, through an irrigation system or sprayer. This is easier than using bagged fertilizer and a spreader. Most slow-release materials are great nitrogen sources for the landscape, but they must be applied dry. The best nitrogen source would meter out the nitrogen slowly, but would be applied through an irrigation system or by using the tank-truck-hose-nozzle system. The goal of research these past few years has been to find such a material; one that acts as slow-release but can be used in a water carrier system. These new nitrogen materials are now coming to market.

Urea is completely soluble, but through chemistry, it can be changed into forms that have entirely different characteristics. Not only are they slowly soluble in that they supply nitrogen at a low, steady level, they can also use water as a carrier. Perhaps "slow-release" is a better term for these new materials. The term that seems to be the most appropriate is "solution slow-release nitrogen."

Coron and similar products are the next generation in liquid fertilizers. Clear liquid fertilizers add versatility to fertilizer programs. Coron is a low-salt-index fertilizer that contains slow-release nitrogen (70% CRN). Being a polymethelene urea-based fertilizer combines the ease of handling liquids with reduced clippings and increased root growth that is associated with traditional dry slow-release fertilizers.

Injection into the irrigation system is easily handled by storage tanks and injector equipment. Tank-mixing requires little agitation and no pre-mixing to dissolve materials. This makes truck/tank/hose/nozzle systems quicker and easier to use.

Advances in nitrogen chemistry have given us the most ideal form of nitrogen yet. Ease of application, low burn potential and slow feeding make these new materials far superior to all other forms. They are certainly worth trying. **LM**

# 'New' forms of nitrogen

by BILL KNOOP, Ph.D. / Technical Editor



Soluble nitrogen can be applied through an irrigation system or sprayer.

monical form. The third chemical form, organic nitrogen, is not used directly by plants. When a fertilizer containing nitrogen in the organic or ammonical form is applied to the landscape, it must be changed to the nitrate form before it can be used by the landscape. These changes are accomplished in the soil by bacteria. You do not need to add anything to any soil for these conversions to take place. Be assured that the right bacteria are always available. Examples of these nitrogen forms are found in Table 1.

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## Less hassle.

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## Less parts.

A new ground drive gearbox eliminates drive chains. The ground drive motor is incorporated into the gearbox, which also eliminates mounting and coupling parts.



## Less repair.

A standard outboard bearing support makes the digging drive assembly rugged and trouble-free. All the 1220's components are integrated to maximize reliability and minimize downtime.



## Less maintenance.

Three easily-accessed grease zerk make up the bulk of the 1220's routine service requirements. And because there are no drive chains, there are no drive chain adjustments.



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# When the snow flies, be a good neighbor

*Unforeseen surprises during a snow event happen all the time.*

*Preparation and friendship between competitors are keys to uninterrupted service.*

by JOHN ALLIN / The Allin Companies

**F**riendly competition is one sure way to get help when the unexpected and unforeseen events occur during any given snow event.

You never know when you will need to suddenly avoid a car pulling out in front of you, and you end up in a snow bank. Or, you find that you tried to stack that last "push" a little to high, and got the front end of your plow truck hung up in a snow bank. That is when it pays to have kept your competition on friendly terms. They are the people who are out at 3 a.m. doing what you are doing: trying to stay ahead of the storm. They can rescue you from hours

of "digging out" when stuck. If you are honest and fair in your dealings with the competition, then they should not mind "helping out" when the need arises, just as you should not mind helping them out.

I have even gone so far as to have one of our crews plow a competitor's account when I knew that he had a major breakdown. An unexpected breakdown can cause major problems for the small plowing operation. And while that operator may never have the opportunity to plow one of our accounts to help us out, he might just stop to lend a hand if one of our trucks is stuck.

Most plowing contractors carry at least some spare parts in the cab of their truck. But it seems that no matter what parts you carry, the problems that arise usually require the one part you don't have in the tool box. It can be quite inconvenient when you lose a plow pin and are miles away from the shop, and it is snowing like the dickens. Friendly competitors can loan or sell these type of parts to each other in a pinch. I tell our guys to help out this way when the need arises.

If you don't get to know the guys in the other plow trucks across the street, you can be left scrambling to get your accounts done on time, or worse. It can be very difficult to find a supplier open—and/or nearby—during the middle of the night. And most of us are usually cutting it close during a storm. We want to plow the customers as close to their opening time as possible, so that they are getting the best service possible. Customers get a bit testy

## Ten guidelines for snow fighters

- 1 Report for work physically and mentally fit, and properly clothed for any emergency in order to withstand the rigors of the task.
- 2 Never enter the cab without inspecting the lights.
- 3 Know your spreading and plowing routes, as well as the performance of the spinner and the life of the plow blade.
- 4 Be alert in order to avoid guardrails, headers, stalled cars, manhole covers, railroad tracks and mailboxes.
- 5 Stay calm on the job, even though cars and trucks pass on both sides and tailgate too close for comfort. Anger only multiplies the prospects of coming to grief by accident.
- 6 Use your radio as briefly as possible, if you have one. Remember fellow work-

ers may need to communicate in an emergency.

- 7 Shutdown the flow of power to the spreader before attempting to free foreign objects or blockages, if you treasure your fingers.
- 8 Take the truck and spreader out of gear and set the emergency brakes before dismounting from the cab.
- 9 Gauge your vehicle speed according to the conditions, or else you may wind up with your truck upside-down.
- 10 Mind your manners on the roadway; clearly signal your intentions; render assistance to stranded motorists; and remember that it is more blessed to give than to receive.