

SYSTEM from page 40

works as well as Ronstar for poa."

Genoff uses Subdue and Chipco Aliette brand fungicides for pythium control. Subdue provides control through root uptake while Aliette provides quick foliar systemic control as well as root uptake. He keeps Aliette on hand because its low toxicity and quick action al-

The sub-surface irrigation system used by Rick Genoff saves water, since none is lost to evaporation.

low him to respond fast to a disease problem. "If I see that the weather is getting up there in the 90s or 100s and the nights are staying about 80 percent humidity, then I'm going to be ready to go with Aliette."

for rhizoctonia and helminthosporium control, Genoff uses Chipco 26019 brand fungicide.

Try rotating fields to save turf

In everything he does, Rich Genoff keeps the players' needs foremost in his mind. "I adjust to the team's needs; they don't adjust to mine," he points out. At the same time, he says the coaches and players are cooperative. "If I rope an area off, they're pretty good about staying out. It's a good working relationship."

Genoff spends the winter months getting the fields ready for spring mini-camps. He then has to get the fields back into prime condition prior to the beginning of fall practice. "But once the season starts," he says, "the fields are to practice on, not to look at. I have the capability of making five different configurations of the fields, running two fields north and south, and two fields east and west. Then, if we make it to the playoffs, I go out and find the best turf, pull the sprinkler heads and put in a practice field. By the end of the season, the fields have taken a real beating, but they will still be playable because of the rotations." □

"All of these materials will perform well for you if you follow the label and treat them with respect. I have to be extra cautious because of the heavy use of the facility by the athletes. My fertilizers and granular pesticides are applied in the evening because they need to be watered in, and almost all of my spraying is done at about 4 or 5 o'clock in the morning. That way, the vegetation is dry and any odor is

gone long before the players are out here."

If you get the impression that Genoff takes a lot of pride in his work, you're right. "There's only one world champion and only one (49ers owner) Eddie DeBartolo," he notes. "Both are totally committed to being the best, and it rubs off on you. No one connected with the team gets left out. When the team wins, we all win." **LM**

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Circle No. 121 on Reader Inquiry Card

RESEARCH UPDATE

Rate of N release varies by fertilizer, soil

by Don Taylor, Ph.D, Univ. of Wisconsin

Slow-release nitrogen (N) fertilizers are often used on golf greens, athletic fields, and other turfgrass areas, even though they're more expensive than quick-release types. Longer turf response and low burn potential are reasons for their popularity.

When choosing and using slow-release fertilizers, remember that release characteristics can vary dramatically with different materials and with different conditions.

Some slow-release fertilizers, such as sulfur-coated urea and Osmocote, are a quick-release N like urea, coated with a material that must be penetrated or broken before the N is released. While breakdown of the coating is supposed to result from micro-organism activity, physical breakage from traffic or rough handling can also increase the rate of N release.

One slow-release N source, IBDU, releases N slowly because the module into which the N is bound dissolves very slowly in soil water. In the case of IBDU, the rate of N release depends principally on the amount of water in the soil.

The moisture factor

Other slow-release forms of N, such as UF and Milorganite, release N slowly because micro-organisms must break down the N-containing molecules before the N can be taken up by the turfgrass plants. The release rate depends on how easily the molecules are broken down on the level of micro-organism activity.

During cool or very dry conditions, N release will be minimal because micro-organism activity is limited.

The point to remember is, the rate of N release (and thus the length of time that turf responds to a slow-release fertilizer application) can vary dramatically with fertilizer properties and existing soil conditions.

The results of some experiments in Minnesota and Wisconsin demonstrate this fact well.

Test procedures

In the experiments, the fertilizers IBDU, Milorganite, and Sustane (a natural organic fertilizer derived from composted agricultural wastes) were applied and evaluated at three golf course putting greens. The fertil-

continued on page 44

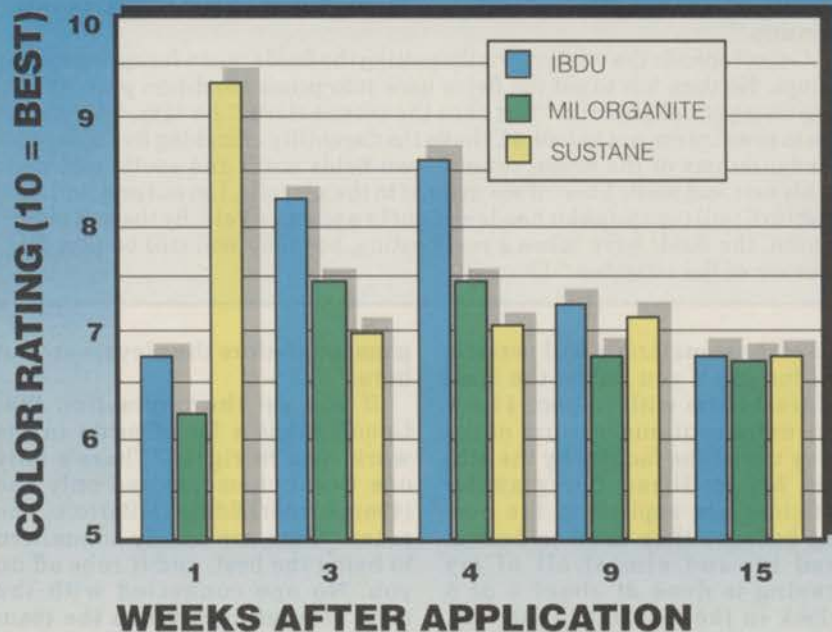


Figure 2. Average color ratings at three locations following June 9 fertilization. Rating scale was 1 to 10 with 10 best.

Source: Dr. Taylor

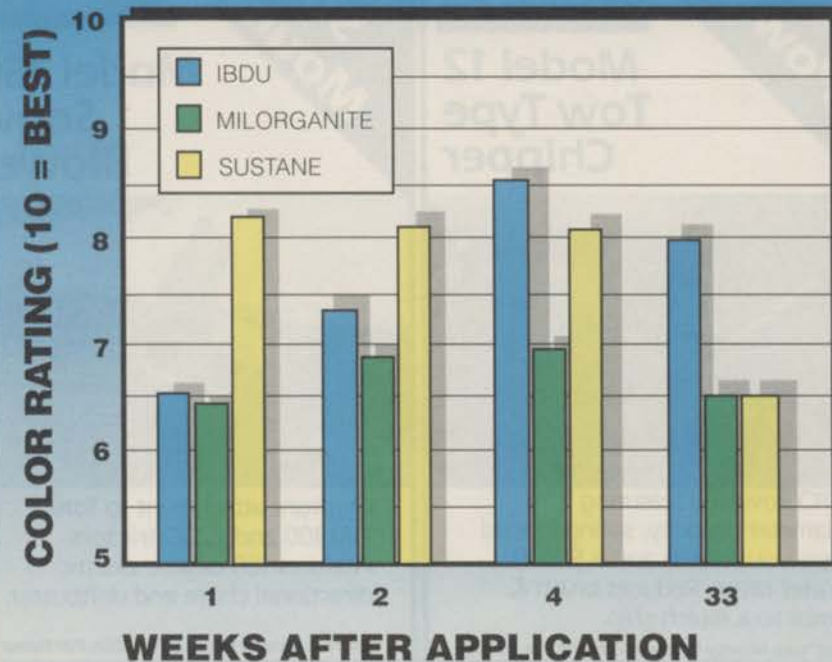


Figure 3. Average color ratings at three locations following September 27 fertilizer application. The 33 week color rating was May 19 the following year. Rating scale was 1 to 10 with 10 best.

Source: Dr. Taylor

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trols the cutting reels. One pedal controls the forward and reverse speeds and the braking. It's that simple.



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Circle No. 126 on Reader Inquiry Card

UPDATE from page 42

izers were applied at a rate of 2 lb. N/1000 sq. ft. on June 9 and September 27, 1988. Each fertilizer treatment was replicated three times on each green.

Following the June 9 application, a color response on the Sustane plots was evident within several days at all three locations, the most dramatic of which is shown in Fig. 1. Subsequent color ratings indicated the response to Sustane was of short duration (Fig. 2).

Three weeks after the fertilizer application color ratings of the Sustane plots had dropped while IBDU plots were just coming to a peak. Four weeks after application IBDU plots were at their peak in terms of visual color.

Analysis of clippings taken four weeks after fertilizer applications showed that clippings from IBDU plots had higher N content (averaging 5.1 percent N) than clippings from either Milorganite plots (4.4 percent N) or Sustane plots (4.3 percent N).

Unlike Sustane or IBDU plots, the Milorganite plots never did show a period of substantial visible response to N being released, perhaps due to a gradual low level of N

release throughout the the experiment. After two months all the plots had rather low visual ratings and the turf appeared to be in need of N.

Visual response

Following the September 27 fertilizer application, there was again a quick visual response to the Sustane plots (see Fig. 3). The response to Sustane did not fade as quickly as it had following the June application and turf on Sustane plots continued to have

Turf color can indicate the need for extra N.

high color ratings up to four weeks after fertilizer application.

The longer residual response to Sustane may have been due to the cool temperatures of October, which reduced the microbial activity and thus lengthened the period of release of N from the Sustane fertilizer.

Visual response to IBDU again peaked about four weeks after application. Color ratings taken the

following May (33 weeks after fertilizer application) demonstrated a definite beneficial color response to IBDU the spring following a fall application of fertilizer. At that time, response to Milorganite and Sustane applied the previous September had disappeared.

Different reactions

These experiments show slow-release N fertilizers react dramatically different in terms of turf response and residual time. Even a single slow-release fertilizer can have differing results at a different locations or at different times of the year for a single location. Consequently, in choosing slow-release fertilizers and in developing a turf fertility plan, it is best to test how the turf at your location responds to different fertilizers.

By putting out your own test plots and watching the response to several to several different fertilizers, you will likely achieve better results than by using general recommendations determined elsewhere.

In implementing an N fertility program, turf color can be an excellent indicator of the need for additional N. **LM**

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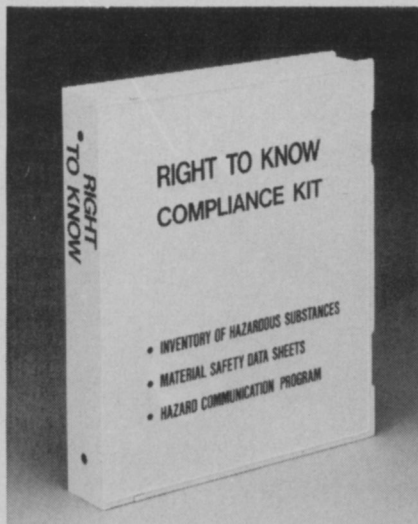
LESCO

LESCO, Inc. 20005 Lake Road,
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Compliance kit keeps chemical data handy

The Right-to-Know Compliance Kit was developed by Direct Safety Co. for the employer who buys, sells or uses hazardous substances.

The kit contains the OSHA 1910.1200 ruling which is required to be made available to employees. A special index form can list up to 40 hazardous substances and work areas in which they are located. The kit includes a form letter for requesting Material Safety Data Sheets, plus a written hazard communication program which states company objectives and plans regarding the protection of employees, and a sample employee training lesson with completion certification forms.



Circle No. 191 on Reader Inquiry Card

Organic fertilizers contain water insoluble nitrogen

Koos, Inc. has introduced two all-natural organic fertilizers for lawns and gardens.

"Nature's Best" fertilizers are produced as homogenous mixes, and are composed of all-natural organic nitro-



gen, phosphoric acid and potash.

The lawn fertilizer is a 10-1-4 mixture, containing 10 percent nitrogen, one percent phosphoric acid and four percent soluble potash. The garden mix is a 5-5-5 combination.

Koos says both products contain 80 percent water insoluble nitrogen that slowly releases nutrients into the soil. Because of the slow-release process, the granulated fertilizers are non-burning and do not require watering in.

The lawn fertilizer nutrients are derived from bone phosphate, sunflower seed hull ash and natural animal organic ammoniates, which contribute to better root development. The garden blend yields similar results, and is derived from bone phosphate, hydrolyzed feather meal and sunflower seed hull ash.

Circle No. 192 on Reader Inquiry Card

New spreader design features big capacity

True Temper's new Cyclone Commercial Broadcast Spreader, Model CB5000, is a large capacity spreader with state-of-the-art features providing productivity enhancements for the lawn care professional.

"The new Cyclone Spreader has been designed to make lawn care easier and more productive," says Jeff Lundeen, True Temper product manager.

Lundeen says the CB5000 is easy to



use, and features an ergonomically-designed handle to reduce operator fatigue. Handle and ground supports both adjust according to user preference. The spreader has an adjustable feed gate for even spreading. A semi-permanent, clear acrylic hopper cover allows the user to fill the hopper without removing the cover.

Circle No. 193 on Reader Inquiry Card

Tractor mowers offer choice of steering

Kubota's new G-Series of tractor-type grass cutters come with standard steering or a new four-wheel steering system.

Kubota says the new 4WS system

allows for smoother, tighter turning than a conventional garden tractor and is ideal for mowing around trees and obstacles.

The 4WS system allows for an uncut circle of 1.6 feet.

The G1800 and G1900 are equipped with Kubota's dependable liquid-



cooled diesel engine, providing 16 and 18 hp.

Gasoline-power enthusiasts can try the G2000, which features a 21 hp, liquid-cooled engine built from a diesel engine block.

A cruise control feature on the G-series mowers allows the operator to steer without using the pedal.

Circle No. 194 on Reader Inquiry Card

Versatile dump body meets landscaper needs

America's Body Company has designed the Landmaster dump body with many important multi-purpose vehicle features.

Landmaster is a dump body with a heavy-duty tailgate and standard adjustable material chute, with 35 cubic feet of storage space for tools, supplies and materials. The Landmaster dump body has a 2.3 cubic yard bed constructed of rust-



resistant, galvanized steel.

Landmaster performs well in tight quarters, whether plowing snow in a small parking lot or loading and unloading equipment in a congested commercial or residential area.

America's Body Company has offices in Oakwood Village, Ohio; Co-

lumbus, Ohio; Clinton, Md; and Nanticoke, Pa.

Circle No. 195 on Reader Inquiry Card

Walk-along trencher ideal for landscape specialists

The Model 520 is a low-cost, walk-along disc trencher from the Charles Machine Works.

The 5 hp unit is a light-duty trencher designed for trencher contractors, rental yards and landscape specialists.

The Model 520 is built with a tubular steel frame. A single front wheel makes turning and maneuvering easy. Two rear wheels provide stability.

The gasoline engine has an easy-pulling recoil start. Power to the trenching disc is direct, without chains, belts or pulleys.

An integral friction clutch protects the engine from shock loads.



Circle No. 196 on Reader Inquiry Card

Lightning detector sounds an early weather warning

Lightning detectors from Airborne Research Associates predict lightning events up to 20 minutes before they occur, according to the company.

The M-01 Optical Detectors have been used for the USGA, PGA Tour, PGA Senior Tour, LPGA and numerous other golf organizations and clubs for evaluation.

The detectors pinpoint "intra-cloud" lightning, a precursor to cloud-to-ground lightning strikes.

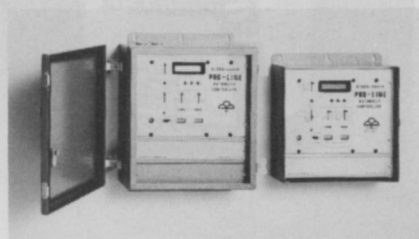
The ARA P-1 Atmospheric Potential Probe measures the earth's electric field and is interfaced to an IBM PC. If a thunderstorm is within five miles, it will be detected, since, according to Airborne, it is impossible to have lightning without high electric fields.

Circle No. 197 on Reader Inquiry Card

Irrigation controllers have water-saving features

Hydro-Electronics now offers the Hydro-Saver Pro-Line of 8-, 12-, and 16-station dual program micro-processor controllers.

Pro-Line features include a 365-day, built-in calendar for odd/even water restrictions and other com-



plex watering schedules. Dual programming and drip irrigation are available, as well as three-a-day starting times.

Other features include: flexible zone timing; water budgeting; rain-sensor bypass; advance button for semi-automatic operation; and manual override for watering one zone continuously without disturbing automatic operation.

Circle No. 198 on Reader Inquiry Card

New 10 hp aerator sprays 40-foot high

In response to market demand, Barebo, Inc. has added a 10-hp rocket model to its line of Otterbein floating surface spray mechanical aerators.

The new, computer-aided design aerator achieves a spray height of 40



feet. The easily detachable diffuser plate makes it possible to clean the unit without removing it from the water.

Barebo says all Otterbein aerators are complete turn-key operations, and require no external or costly plumbing fixtures.

Circle No. 199 on Reader Inquiry Card

Truck bed attachment makes loading a breeze

Landscapers, gardeners and horticulturists can now load and unload plants, tools and supplies from truck beds faster and easier than ever with the help of the SlideMaster payload attachment.

The SlideMaster three-rail telescoping cargo handling system instantly creates a convenient pull-out platform on any size pickup truck.

Developed by Innovative Indus-



tries of Madison, Wisc., SlideMaster instantly makes all contents in every corner on the movable bed easier to reach.

Circle No. 201 on Reader Inquiry Card

Pound-In Edging system for well-manicured look

Pound-in Edging, a new landscaping accessory from Heartland Products, saves time and energy, while giving all projects an extra well-manicured look.

Pound-In Edging can be used to border trees, shrubs, and flower beds. There are no trenches to dig. Pieces lock together so there are no unsightly gaps. Even on sloped areas and around curves, Pound-in Edging will fit together easily and provide a uniform border.

Heartland says Pound-In-Edging can be virtually invisible when tapped into place just below the grass cutting level.

Circle No. 202 on Reader Inquiry Card

continued on page 50

PRODUCTS from page 49
**Newest models appear
in full-color brochure**

Encore Manufacturing Company's complete line of commercial turf equipment is featured in a new eight-page, full-color Pro-Line brochure.

The publication includes model descriptions, photographs and specifications on Encore's Pro-Line of 32-inch to 60-inch mowers, as well as blowers, Power-Thatch and Power-Slice.

Encore's riding sulky and grass catcher accessories are also included.

Important features are given special attention, including the Pro mowers' double-V band belt to eliminate slippage.

This brochure is the first to focus on the complete Pro-Line of equipment and accessories. Product feature information and a price quote sheet make it a handy reference tool for both dealers and lawn maintenance professionals.

Circle No. 203 on Reader Inquiry Card

**Fertilizer line adds
high level N-P-K mix**

Growth Products rounds out its Liq-



uid Professional Fertilizer Line with Hi-Kal (15-0-10) and Hi-Kal++ (15-2-10).

The company says both products provide high levels of potassium with no chlorides; 40 percent slow-release nitrogen and iron for fall fertilization programs of turf, trees and ornamentals.

There is no mixing or special agitation needed with Hi-Kal or Hi-Kal++, and the products are ideal for root injection or foliar feed.

Circle No. 204 on Reader Inquiry Card

**Mower features designed
for operator benefit**

Exmark's 21-inch self-propelled and walk-behind mowers are powered by a 4 hp Briggs and Stratton engine, and feature variable speed control and differential action for easy maneuverability on curves and hillsides.

Exmark says there is also no reverse drag on the 21-inch self-propelled model, so backing is easy.

The mowers combine complete engineered design with operator convenience features, for a consistent cut and easy operation.

Exmark mowers are backed by rigorous testing and exacting production



procedures to insure high-quality products that deliver years of low-maintenance operation.

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Circle No. 101 on Reader Inquiry Card

**Videotape shows the way
with injection equipment**

Aquatrols is offering a videotape entitled "Selecting and Installing Aquatrols Irrigation Injection Equipment."

The video offers step-by-step instructions on the installation and calibration of the Little Squirt and the



P.P.M. Unit injection pumps.

"Increasingly, turf managers are recognizing the benefits of treating irrigation water with soil wetting agents to improve penetration, uniform wetting and increase water use efficiency," says

continued on page 52