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Circle No. 287

Verti-Drain

Verti-Drain, maker of the pre-eminent turf aerator on the market today, now offers the Verti-Seed 1204 model overseeder. The 1204, at 48 inches, is 15 inches wider than

its predecessor.

The Verti-Seed, which needs a tractor of 22 hp or more to lift and drive it, uses specially-designed PTO-powered cutting discs to slide a deep channel in the soil without damaging the turf. Immediately behind the cutter shaft are the seeding elements, consisting of a knife which further opens the channel, a special hopper that places concentrated seed into the channel, and a sliding pressure shoe to close the channel.

Circle No. 288

Groundtek

Here's a totally new product that we've seen demonstrated at trade shows. Take

Verti-Drain



our word for it: it's neat.

Groundtek's Lady Bug is an all-purpose spray machine with single-hand steering, hydrostatic variable speed and good maneuverability. Not only that, but the driver sits right up front where he can see everything.

It includes a three-section boom sprayer, a standard spray gun and an easily-attached hopper for spreading materials. A wide range of application rates can be achieved by easily changing nozzles, pressure or speed. And it can carry up to six bags of fertilizer that it can spread in widths of 4 to 15 feet.

The Lady Bug has an on-board speed and area computer and fits through a 48-inch space. With all its attachments, it can spray turf, ornamentals and tall trees.

Circle No. 289

Groundtek





Turfline

Turfline

Golf course greens rollers are becoming more popular as superintendents try to speed up their greens without lowering mowing heights. Now comes the True-Surface vibratory greens rolling system that adds something extra.

The vibratory action "energizes" sand topdressing to conform with the green's contour and "trues" its surface without damaging grass. The True-Surface also eliminates footprints, spike marks and ball marks. By varying the machine's ground speed, you can "stimp" all greens within three to four inches.

Circle No. 291

Ciba

Unparalleled stability is what you get when you use Banner Maxx fungicide, being unveiled at the GCSAA show in Orlando this month. According to Ciba Turf & Ornamental, the new microemulsion formula is a clear liquid that mixes completely with

water, eliminating the petroleum solvents that act as a carrier in other formulations.

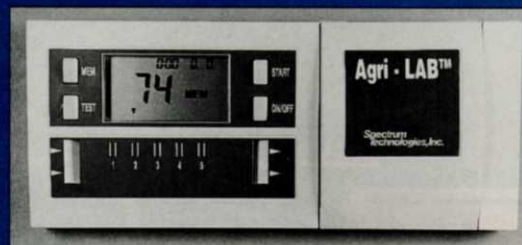
Banner Maxx's particles are about 1-25th the size of the particles of other sterol inhibitors.

In addition, three new diseases have been added to the label: take-all patch, necrotic ring spot and fusarium patch.

Circle No. 292



Ciba



Spectrum

Do you need to know how much nitrogen, potassium and phosphorus a specific soil, solution or groundwater contains? All you really need is Spectrum Technologies' portable Agri-Lab meter.

It measures N-P-K right on the spot, at the site, using test strips that turn color when reacting to specific elements, including some minor elements. The meter interprets the test strip color and provides the concentration in parts per million. The meter stores 50 test results, which can be transferred to your personal IBM or IBM-clone computer with the optional software.

For more information, phone toll-free (800) 258-8873 or
Circle No. 290



Allan Block

Allan Block

Here's a retaining wall system that you don't need mortar to build. The patented interlock on Allan Block Retaining Wall Systems makes them easy to install, yet strong and flexible.

These segmental retaining walls can be used on all types and scales of landscapes, from residential backyards to golf courses and large roadway projects. They can be used to manage water drainage and soil erosion, increase land utility, and add beauty to a landscape's design. In addition, Allan Blocks are lighter and easier to use than concrete blocks.

The blocks come with either straight or curved faces. They are available in either 4- or 8-inch heights.

Circle No. 293

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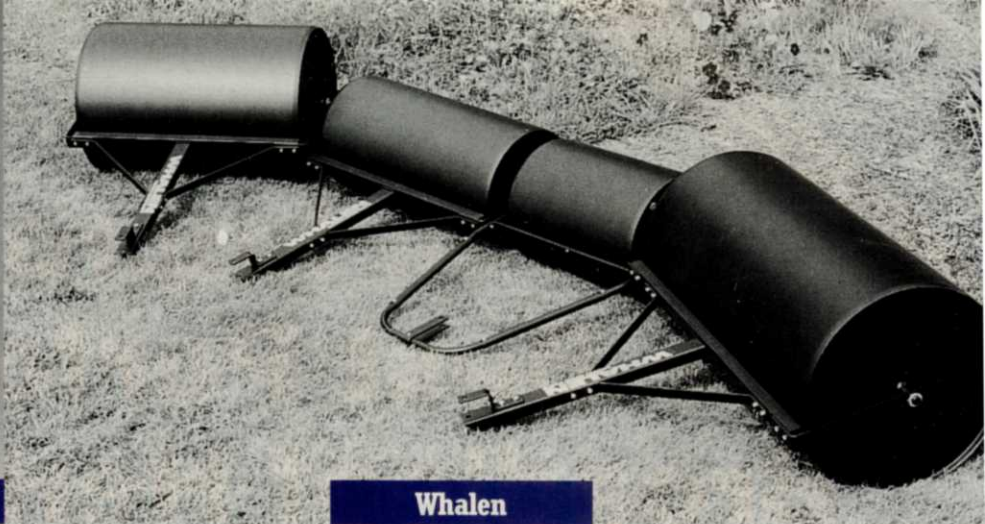
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Shindaiwa



Whalen

Shindaiwa

Shindaiwa is one of a few equipment manufacturers that is signalling its continued interest in the commercial market by introducing a totally new piece of equipment: its first professional backpack sprayer.

Durability is its key feature. The SP415, during tests at the International Pesticide Research Center in London, was operated 2,500 hours at 36 strokes per minute while pumping 23 gallons an hour at 45 psi with no required maintenance.

This particular unit has a four-gallon tank capacity and features a 250 psi maximum, 15-90 psi operating range. It comes with a limited one-year warranty.

Circle No. 295

Whalen

When spring comes around and you have to deal with new landscapes that have heaved or settled over the winter, Whalen Lawn and Turf offers its line of lawn rollers, which weigh from 185 to 910 pounds.

The rollers, which can smooth out unlevel terrain, are made of heavy steel with a baked enamel finish. All four models come with a standard pin-type hitch, and the smallest can be towed by a tractor or pushed by hand.

The smallest of the units is 24 inches wide, the largest 48 inches. For more information, phone toll-free (800) 447-5777 or

Circle No. 296

MycorTree

It's not often in this business that you can buy an extra insurance against failing plants. But that's exactly what Tree Saver Transplant is. Formulated in easy-to-use pre-measured packs, the product is a mix of mycorrhizal fungi adaptable to a broad range of plant species, environmental conditions and soil types, including heavily-distressed sites.

The micorrhizae, according to MycorTree, is normally lower in soils distressed by compaction, fertilizer imbalance and other problems associated with urban landscapes.

The mix also contains Terra-Sorb super-absorbent gel to help prevent drought stress, and natural yucca, seaweed and humic extracts to promote fast root regeneration.

Each pack of Tree Saver Transplanter contains material to inoculate a single tree of one inch caliper or three one-gallon containerized plants, at a cost of less than \$2 per tree.

For more information, phone toll-free (800) 421-9051 or

Circle No. 297



TerraBiotics

Root growth is everything to healthy turf. And healthy roots can mean survival for turf under stress. CytoGro from TerraBiotics is a root-building biostimulant that the company reports out-performs the nine top-selling biostimulants on the market today.

CytoGro is a blend of cytokinins, auxins and natural synergists. It stimulates root growth, improves water leaf status, and speeds recovery of damaged turf.

It also retards senescence, improves salinity tolerance and increases fertilizer efficiency. It is EPA registered and contains a guaranteed cytokinin content, for product quality. The photo above shows the root growth possible by using CytoGro. It's available as a liquid, with or without iron, and will soon be available in water soluble packets with calcium and iron to stimulate root growth in high-saline environments.

Circle No. 294

MycorTree





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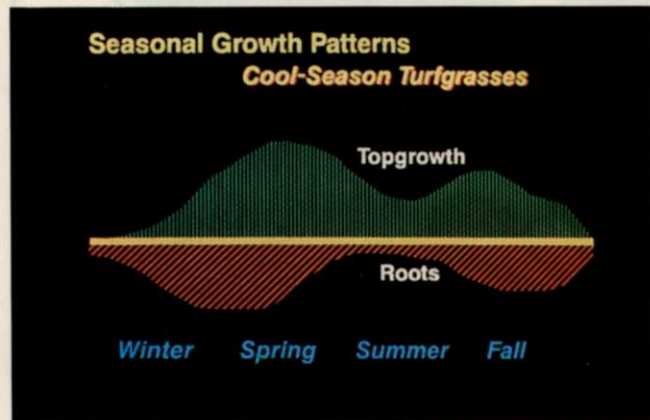


FIG. 1. Cool-season turfgrasses grow faster in the spring and fall, and slower in the other seasons.

Turf fertilization is an important factor in turf survival, especially in the lawn care, golf course and athletic field sectors. In spring, the demand for dark green turf is very high, as homeowners, golfers and athletic event spectators all want to

see lush, thick stands of turf.

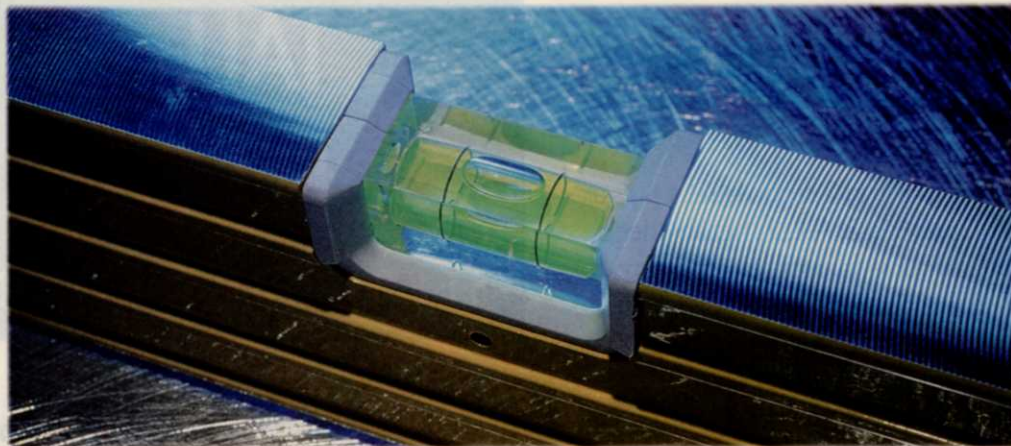
Nitrogen & timing

Assuming there are adequate levels of phosphorus, potassium and micronutrients present in the turf, nitrogen will show the quickest response. You can determine the level of nitrogen in the soil profile by way of a soil test, but calculated values tend to be of little value in that nitrogen is a transient element in the soil, and subject to rapid changes. Therefore, nitrogen fertilizer recommendations are based on typical plant usage, rather than soil test results.

Table 1 (page 28) shows nitrogen re-

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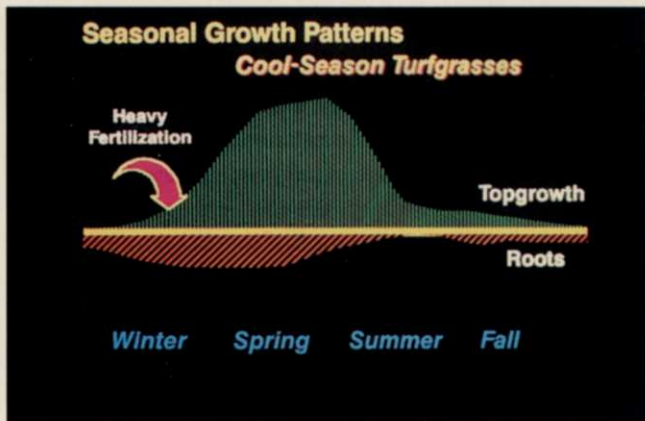


FIG. 2. When turf is fertilized heavily in spring, shoot growth is enhanced, while the root system naturally declines.

quirements for several turfgrass species.

Studies at various universities have confirmed that cool-season turfgrasses should receive the majority of their annual fertilizer in the fall. Heavier fall fertilization enhances root growth when roots are naturally increasing in depth and thickness (Fig. 1).

Cool-season turf tends to produce more roots, rhizomes and tillers in the fall than

in the spring. These structures are very important in avoiding drought stress and reducing the incidence and severity of diseases during the growing season. When turf is fertilized heavily in spring, shoot growth is enhanced, while the root system naturally declines (Fig. 2).

This creates a greater demand on the declining root system for moisture absorp-

tion, a greater need for mowing and produces soft, lush leaf blades that are more susceptible to foliar diseases.

Spring fertilization comes on the heels of an adequate fall fertilization program. For cool-season turfgrasses, approximately two-thirds of the annual requirement should be applied in the late summer and late fall, with one-third applied in the

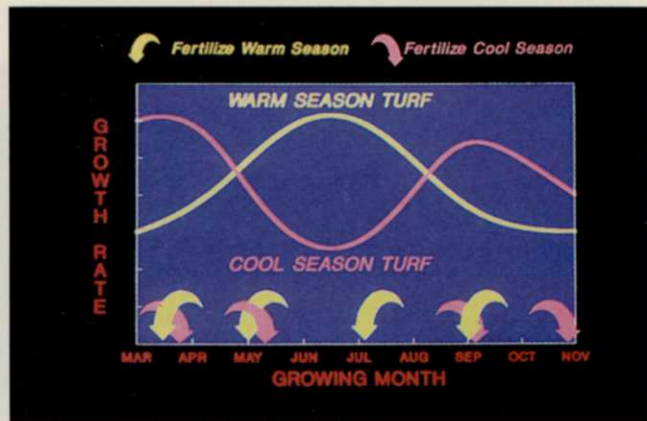


FIG. 3. Warm-season turfgrasses (bermudagrass, zoysiagrass and buffalograss) are fertilized in early and mid-summer.

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Table 1. Annual nitrogen requirements for turfgrasses

Species	Nitrogen/1000 sq.ft./year
Common Kentucky bluegrass	2-3 lbs.
Improved Kentucky bluegrass	3-4 lbs.
Perennial ryegrass	3- 4 lbs.
Fine fescue	1-3 lbs.
Tall fescue	2-3 lbs.
Creeping bentgrass	3-5 lbs.
Zoysiagrass	1-3 lbs.
Buffalograss	0-1 lbs.
Bermudagrass	3-6 lbs.

spring (Fig. 3). Divide the amount suggested for the spring into two applications, one in mid-spring and the other in early summer. Due to a different growth pattern, warm-season turfs (bermudagrass, zoysiagrass and buffalograss) are fertilized in early and mid-summer (Fig. 3).

Nitrogen types

Nitrogen products are generally grouped into three categories: water soluble; slowly-soluble; and slow-release. Water soluble forms—urea, ammonium nitrate, ammonium sulfate) produce a rapid plant growth response soon after application, and produce turf stands that are more susceptible to foliar diseases and have a high foliar burn potential. These last only three to five weeks.

Because the entire nitrogen amount is readily available in the soil profile, there is often more nitrogen available than the turf plant can use. As a result, the remaining non-absorbed portion has great potential to leach downward in the soil profile and contaminate groundwater.

The best use of water-soluble fertilizers is for supplemental fertilization. A light application (less than a half-pound/1000 sq. ft.) will produce a quick response and greening effect for a special purpose, such as opening day in baseball season and special golf tournaments.

Slowly-soluble forms of nitrogen include synthetic and natural organics such as IBDU, urea formaldehyde, animal by-products and activated sewage sludge. These products provide nutrient release

limited in the spring and fall. While this is beneficial for root growth, limited turf injury and reduced pollution potential, the turf manager may need to supplement with light rates of water soluble products to provide necessary nutrients in the spring.

Many products are formulated with both water-soluble and slowly-soluble carriers. IBDU fertilizers depend mostly on low solubility and a slow rate of dissolution to control their release.

Slow-release products are basically water-soluble forms, coated with a membrane to restrict contact with soil moisture. As the coating thickness decreases, the release rate increases, providing nutrients for the turf. Both slow-release and slowly soluble products have characteristics of gradual

more gradually than water-soluble forms. The release from natural organics and urea formaldehyde depends on the breakdown of the product structure by soil microorganisms. Due to lesser microorganism activity in cooler periods, nitrogen release is

availability and low foliar burn potential, which make them very desirable for use.

Product combinations

Certain turf pests also divert a turf manager's attention in the spring. Annual grasses, broadleaf weeds, overwintering sod webworms and bluegrass billbugs are some of the most important pests and should be monitored. If a damaging level is detected or predicted based on pest history, consider choosing a fertilizer/pest control product, especially if the application windows for each are near the same time frame.

Combination products

In areas needing both nitrogen and pest control, the number of applications and passes over the turf stand are cut in half or thirds, depending on the number of pest control agents in the combination product. However, the turfgrass manager can save money by applying only fertilizer in areas where there is no pest present, or in which no pest history has been documented. Another benefit of applying only fertilizer is reduced environmental contamination, as is always a possible outcome when pesticides are applied. As with any pesticide or fertilizer product, read and follow all label instructions carefully. **LM**

The author is an extension educator for the University of Nebraska at Lincoln.

Tips for successful sod establishment

Attention to detail following installation increases sodding success, according to John Huber, president of Huber Ranch Sod Nursery, Schneider, Ind.

"Check rooting after a few days to adjust water application levels," he says. "Sod should be wet enough to avoid drying out, but not so wet that puddling takes place. The root system should extend at least one inch down into the soil before watering is tapered off, two inches if hot summer weather is approaching."

Paul Zwaska, head groundskeeper for

the Baltimore Orioles, says, "Overseeding newly-installed sod with perennial ryegrass can help connect the pieces laterally as the roots from the germinating ryegrass develop sideways into the sod.

"As soon as sod has rooted sufficiently, core aerify in two directions and drag the cores back into the soil profile to mix the soils. Overseeding at that time also will help stabilize the sod and encourage rooting as the sod roots follow the seed roots into the soil." □



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Crew chiefs asked to do more with fewer workers

by RON HALL / Senior Editor

Crew chiefs provide muscle for most green industry jobs.

But competitive pressures are demanding even more decision-making responsibility and production from them....this as the size of their crews shrink.

"You have to put your faith in the crew chief," says Phil Christian, PDC Consultants, Alpharetta, Ga. "At some point you've got to turn your customer and the delivery of your service over to that front-line working foreman."

Crews usually contain no more than two, three or four workers, including the crew chief. Build crews may have a person or two more, but usually not many more.

In lawn/landscape, owners are going to smaller crews.

"Typically we'll send out a crew leader with only two other people," says Dale Stell, Lakeview Lawn and Landscape, Canandaigua, N.Y.

"That crew size will out-perform any larger crew. Maybe they look around the job site and they say, 'Geez, we're the only three guys here. We better get going or we're not going to have anything to show for it at the end of the day.'"

For larger commercial jobs, Stell prefers several small crews working on different areas of the project rather than increasing the size of crews. His 16-year-old, design/build company is 65 percent commercial by dollar volume.

Steven Glover of L&L Landscape Services, Santa Clara, Calif., says his maintenance crews generally contain just two or three people, while construction crews may, depending on the job, range from five to eight people.

"We've been in a program to upgrade the responsibilities of our crew leaders," explains Glover. "We want to develop crew leaders that take ownership of pro-

jects and personal interest in their sites."

Adds Glover: "We also recognize that it's our responsibility within the corporate to provide them the resources they need so they can be efficient and accomplish what they need to do."

Christian says the smaller the crew size, generally, the more production it will do per person. "I hate four-person crews," he says.

Christian points to the service delivery system used by the late Richard "Dick" Duke in building ChemLawn as a model of efficiency. (Christian was involved with construction before heading ChemLawn's Atlanta-based Commercial Division for eight years.)

In that system, the service deliverer was basically also a self-supervised crew leader.

"They could pretty much solve all the problems in the field," says Christian.

"They were not really that dependent on middle management."

He also cites fundamental differences between lawn specialist crew chiefs and maintenance foremen. The lawn specialist/foreman is more "technical" whereas the good maintenance/construction crew chief tackles projects like a "linebacker."

"He just wants to go and get it done," says Christian. "Your crew chief on maintenance doesn't behave like your lawn specialist and that's normal. You (owner) are the one who has to change gears."

Whatever the temperament, the crew chief must get the work done.

"That crew is either self-supervised or not supervised. There is no way you (the owner) can supervise a mobile crew, even with a cellular phone," says Christian.

"That means you've got some training to do. And you've got to hold your crew chiefs accountable." **LM**

Crew leader: can you do it?

A maintenance crew leader needs special qualities, says David Burnley, general manager of Contra Costa Landscaping, Inc., Martinez, Calif. They include:

► **Attention to detail.** Most crews can get the job to 90-95 percent. It takes a special employee to get the last details completed: the spent flowers by the front door; the turf in the first stages of water stress because of a plugged nozzle; the litter behind the shrub that is visible from inside the building but hidden from the street.

► **Organization.** From keeping his truck and equipment clean and orderly to his approach on the job site.

► **Communication.** Whether it's telling a supervisor about a problem on a job site or talking with a crew member about a better way to prune a shrub.

Brent Totman, general manager of Orkin Plantscaping, Knoxville, Tenn., adds these to the list:

► **Leadership skills.** The ability to influence the behavior and performance of others. Willing to accept the responsibility of authority and be accountable.

► **Technical skills** in applied horticulture and equipment. It gives the crew leader confidence to make good decisions in the field and be responsible to the customer.

► **A service attitude.** Having a genuine interest and motivation to serve others needs. A crew leader must be able to listen and respond to the customer.

—R.H.