VITAL FACTS ABOUT THE POWER OF MACH 2™.

- MACH 2™ Turf Insecticide mimics an insect-specific hormone that causes premature molting, disrupting the natural metamorphosis process.

- The residual power of MACH 2 spares the area from feeding damage by a new generation of grubs—making it an ideal preventative treatment.

- As a curative treatment, MACH 2 has the knockdown power that stops grub damage to the turfgrass within hours after it’s ingested.

- One application can take you through the peak months of the season.

- No immediate irrigation needed, under normal turf-growing conditions with normal rainfall.

- Universities and turfgrass professionals have tested MACH 2™ Turf Insecticide extensively on numerous types of turfgrasses and grub species.

- Two convenient formulations are available: MACH 2 Granular and MACH 2 Liquid.

- MACH 2 is odorless.
INSECT IDENTIFICATION GUIDE

A GUIDE FOR THE PROFESSIONAL TURFGRASS MANAGER

This special "Turf Managers' Guide to Insect Identification" has been brought to you by MACH 2 Turf Insecticide.

This guide was designed to help you—the professional turfgrass manager—with the difficult job of accurately identifying the pests damaging your turf so that you can confidently choose the most effective means of control possible.

Turfgrass entomologists have identified many species of pests that cause damage to turf on golf courses, industrial parks, home lawns and other turf locations. Frequently, the differences between some of these pests are barely visible—even to the trained eye. Yet accurate identification is necessary in order to choose the proper control method, whether preventative or curative.

Today's IPM programs demand the use of insecticides that are both highly effective and targeted specifically to control only the problem pests, without harming non-target species.

About RohMid

RohMid LLC, the sponsor of this supplement, is a marketing and sales joint venture between American Cyanamid Company and Rohm and Haas Company, two leaders in the professional turf and ornamental industry. The companies formed this venture in 1995 for the sole purpose of developing, registering and commercializing MACH 2 Turf Insecticide.

We're sure you'll find the "Turf Managers' Guide to Insect Identification" a useful resource for diagnosing and treating your turf for the toughest pests. You can always look to LANDSCAPE MANAGEMENT and MACH 2 Turf Insecticide for answers to your questions about the most effective turf management. For additional information about MACH 2 or for the distributor nearest you, call 1-888-764-6432.
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Spring is the time to initiate new growth for turfgrass, and for many managers, it’s the time to get some needed nutrition back to lazy turf.

After winter dormancy, both warm- and cool-season turf begins an important period of growth. For northern turf, spring and fall represent the peak seasons for shoot and root development, when temperatures range between 50 degrees and 75 degrees F. Root initiation occurs first in early spring, when soils begin to thaw. Active shoot development follows, as temperatures climb between 60 and 75 degrees F.

For warm-season turf, late spring through summer represents the optimum time for development, as temperatures mostly topgrowth, starter types contain higher proportions of phosphorous (i.e., a 1:2:1 ratio).

The added phosphorous helps initiate root development and early turf establishment of new seedlings.

Go easy on nitrogen

Nitrogen is the most important element in a turfgrass fertilization program. However, there are limits to its use.

When turfgrasses are over-fertilized with spring N, excessive topgrowth—which requires extra mowing—and shallow rooting will result.

There is also a greater threat of nitrate leaching, a higher incidence of disease and reduced environmental stress tolerance, including summer drought.

In most situations, avoid applications of more than one pound of N/1000 sq. ft. when using “fast release” or highly water soluble nitrogen.

Most turfgrasses need additional fertilization to achieve maximum growth potential.

by JOHN ROBERTS, Ph.D.

Fall fertilization benefits are obvious.
One of the author's key concerns is field errors that can result in misapplication, such as this fertilizer spill.

When using only fast-release nitrogen sources, light applications, 1/2 to 1/3 pounds of N/1000 sq. ft., are more desirable, and should be applied more frequently.

This spoon-feeding approach has become increasingly popular on golf course putting greens.

**Fast-release/slow-release**

A widely used strategy in the spring is to fertilize with products that have a combination of fast- and slow-release nitrogen sources. Fast-release nitrogen stimulates earlier green-up and growth which is often sought in recreational and landscaped settings. Slow-release nitrogen sources, whether synthetic or natural organic, last eight to 15 weeks, and are less likely to burn the turf and release nitrogen more uniformly than inorganic N sources.

Turf managers often must strike a balance between which combinations to use in each situation.

Sometimes this requires supplementing small amounts of fast-release nitrogen into the spring application.

**Late/dormant application an alternative**

A late fall or dormant fertilization can provide a successful alternative to an early spring application. This strategy is primarily used by athletic field managers to:

- ▲ accelerate spring green-up and growth;
- ▲ help distribute the workload more evenly over the year;
- ▲ avoid traffic damage to soft, wet turf.

One major concern with late fall fertilization is the increased potential of nitrate leaching during the winter. Using lighter rates of slow-release nitrogen will help reduce this threat. However, this strategy will generally be slower to stimulate growth in cold spring soils.

**pH affects nutrient availability**

The soil pH has a considerable influence on the availability of most nutrients. Phosphorus is an example of a nutrient that is most available when the soil pH is between 6.0 and 7.0. However, in highly acidic soils with pH of less than 5.0, phosphorus gets "tied up" with iron and aluminum to form complexes which are unavailable to turfgrasses.

Maintaining near neutral soil pH values also favors the activity of beneficial soil microorganisms, the release of nitrate from nitrogen fertilizers and more vigorous growth of most turfgrasses.

In highly acidic soils, toxic concentrations of aluminum, iron and manganese may develop and cause impaired rooting (roots will appear short, brown and spindly) a decrease in overall turf vigor, shoot growth, drought tolerance and recuperative potential.

**Keep potassium levels high**

Potassium plays a vital role in plant nutrition, and deserves more attention in many fertility programs.

Research has shown how important it is to keep potassium levels high during the growing season. Potassium is known to enhance turf tolerance to various environmental and biological stresses, including cold, traffic, disease and drought tolerance.

A nitrogen to potassium ratio of 3:2 has generally been considered desirable. How-
High performance golf fertilizers

The Andersons’ Early Order Discount Program is in gear and now is the time to save on Tee Time products for golf course turf.

- Tee Time 16-4-8 with ammonium sulfate;
- 5-5-25 with Dimension;
- 21-3-16 and 18-6-15 Greens Grade;
- 25-5-15 with SCU;
- 14-0-24 Fairway Grade;
- 10-3-10 with Nutralene and Dithiohpyp.

Call 1-800-225 ANDY or Circle No. 274

Choose the right fertilizer products for the job

Quickly-available or water soluble sources provide a rapid growth response under good growing conditions and include:

1. Urea, which is a water soluble organic compound that contains 45% N.

2. Inorganic salts such as ammonium nitrate, ammonium sulfate, potassium nitrate, calcium nitrate and ammonium phosphates.

3. Methylol ureas, formed by reacting urea with formaldehyde have produced growth responses similar to other water soluble sources but vary based on formulation. Examples of such products include:

   - Form-U-Sol, which has 28 percent N, of which 67 percent is urea and 33 percent is methylol urea;

   cont. on page 48

Avoid burn with potash product

Sulfate of Potash from Great Salt Lake Minerals Corp. can be used during the hottest months to provide potassium and sulfur without fear of damage to the turf. Use of Sulfate of Potash also results in better rooting, drought resistance, heat and cold tolerance and better wear resistance. Increased grass response to nitrogen, phosphate and other nutrients is also provided.

Other benefits cited are disease resistance qualities for Fusarium Patch, Ophiobolus Patch, Dollar Spot Fungus and Powdery Mildew. Poa Annua can also be suppressed. To find out more call 913/344-9302 and mention you saw this item in LANDSCAPE MANAGEMENT, or Circle No. 278

20 solutions from Growth Products

Growth Products offers a line of 20 liquid fertilizers and micronutrients following 20 years of research and development in polymer chemistry. The company prides itself on offering the highest levels of consistency and accuracy.

Landscape managers are able to avoid salts, chlorides and excess sulfur when using materials from Growth Products, according to the company. For more information and a sample call 800/648-7626 and mention LM or Circle No. 279

Howard Johnson’s offers fertilizer line

Howard Johnson’s is offering a complete line of high-quality, water-soluble fertilizers with polybag packaging. Custom blending is another service provided by the company.

Materials are available in varieties that include high phosphorous, no phosphorous, acidity, “triple 20,” starter food, tropical food, bloom food and foliar food. Call 800/298-4656 or Circle No. 280
Sports Turf Managers Association

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The Sports Turf Managers Association (STMA) is an organization of professionals representing all segments of the sports turf industry. Our members work to combine the science of growing turfgrasses and the art of maintaining sports turf to produce playing fields that are both safe and aesthetically pleasing.

STMA provides members with a variety of benefits, including: education through regional institutes and conferences; support for sports turf research; facilities tours; a national awards program; access to the STMA National Conference & Exhibition; our Sports Turf Manager Newsletter; and MUCH more!

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(LM)

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☐ Professional sports turf facility manager $85
☐ Four-year colleges and universities sports turf facility manager $85
☐ Other schools, research, Ext. Agents, teaching $85
☐ Parks and recreation sports turf facilities $85
☐ Commercial (US or International) $195
☐ Additional members from same company $50
☐ Student (non-voting) $20
☐ International (other than commercial) $85
(must be in US dollars)
☐ Local Chapter (call for amount)

Total amount enclosed $ ____________

Please enclose payment (check, money order, Master Card, Visa, Discover or American Express) and send to:
Sports Turf Managers Association, PO Box 3480, Omaha, NE 68103-0480

For more information, contact STMA Headquarters at 800/323-3875, 712/366-2669, fax: 712/366-9119 or e-mail: TrustyTips@aol.com

“Promoting Better and Safer Sports Turf Areas”
Lebanon hones distribution network

Lebanon Turf Products is aiming at providing the best customer service by developing the industry's largest distribution network. The company has more than 70 local independent distributors nationwide. Lebanon says that customers can always count on right-on-time deliveries and elimination of the guess work frequently encountered by landscape managers seeking application materials. For more information, contact Lebanon at 800/233-0628 and mention LANDSCAPE MANAGEMENT or Circle No. 281

Nitroform has controlled release

Nitroform provides more than 90 percent controlled release nitrogen for sustained and predictable feeding all season long. The consistent release pattern is not dependent on coating or particle size.

Nitroform's energy-rich carbon and its nitrogen promote increased microbial activity—even in low organic soils, according to the company. The product resists leaching in sandy soils. For more information, call 888/764-1988 and mention LM or Circle No. 283

Turf Cocktail for golf courses

Turf Cocktail is being cited as a 100 percent environmentally safe organic fertilizer and bio stimulant. It is made from whole Atlantic fish, natural sugar and plant protein extracts.

According to Northeast Organics Inc., the product is proven to stimulate and support beneficial soil microbes and increase antioxidant activity. It also is effective in enhancing color by turning on chlorophyll. Distributor inquiries are invited. Say you saw it listed in LANDSCAPE MANAGEMENT when you call 800/924-7347, or Circle No. 284

Morral introduces Green Effects

Morral is introducing a new line of fertilizers and pesticides known as Green Effects. The company strives to provide innovation, quality and service.

The line has six product groups, which includes products for tree and shrub care, professional turf managers, golf courses, private labeling and ice melting materials. For more information call 800/554-3981 and mention you saw this notice in LM, or Circle No. 285

Calcium corrector on market

Quelant-Ca is a newly available amino acid, chelated calcium product that corrects calcium deficiencies in turfgrass. The product is normally applied as a foliar spray and may also be applied through fertigation. It is tank-mix compatible with herbicides, soluble fertilizers, insecticides, fungicides and plant growth regulators.

Contact Nutramax labs Inc. at 800/925-5187 and say you saw it in LM, or Circle No. 286

Green-T helps turf management

Green-T liquid fertilizer formulations contain an advanced new controlled release nitrogen source designed to enhance the health, appearance and color of turf.

One feature of Green-T is its clear liquid form, making it easier to measure and mix with water and compatible pesticides. The product does not readily leach or volatilize. Mention LANDSCAPE MANAGEMENT when you call 800/562-1291 or Circle No. 287

Plant Health Care branches out

Plant Health Care Inc. is marketing products aimed at Tree and shrub care, lawn maintenance and seeding and sodding. The line includes wetting agents, bio stimulants, inoculants and hydrogels.

The IronPak bio stimulant corrects iron deficiencies in grasses and ornamental plants. Call the company at 800/421-9051, or Circle No. 288

Nature Safe uses plant/animal meals

Nature Safe is a blend of various plant and animal meals that are balanced in sugars, starches, carbohydrates, proteins and fats. These meals contain essential natural amino acids, chelated secondary elements, vitamins and enzymes.

According to the company, Nature Safe has minimal leaching and volatilization and is ideal for applications around sensitive environmental areas such as wetlands, streams and lakes. Circle No. 282

Slowly-available, slow-release or water insoluble sources are released based on manufacturing processes. These include:

1. Urea formaldehyde (UF): Also called Nitroform, Ureaform, Blue-Chip, etc. Contains 38 percent N. Nitrogen release is slowly-available, slow-release.

2. FLUF is a flowable form of UF that contains about 18 percent N, of which 20-25 percent is water insoluble and thus has less burn potential than soluble sources.

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Circle No. 46 for more information.
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Circle No. 108 on Reader Inquiry Card
by the Plant-Wise Bistimulant Co. as it presents its 3D plant growth supplement concentrate.

3D is a special blend of fortified seaweed extracts, concentrated humic acid and readily available micronutrients designed to provide foliar enhancement, physiological integrity and foundation fortification.

For more information, contact the company—saying you saw it in LM—at 800/334-4962, or Circle No. 289

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3. Nutralene is a methylene urea product with about 40 percent N.

4. Isbutylidine diurea, also called IBDU, contains 31 percent N. Its rate of N release is dependent upon the hydrolysis of the product.

Coated N sources are made by coating urea or complete fertilizer prills with an impermeable or semipermeable coating.

1. Sulfur-coated Urea (SCU) is produced taking prilled urea and spraying it with molten sulfur.

2. Polymer-coated Urea (PCU) products are coated with some type of plastic polymer coatings to reduce the rate of N release.

Natural organic fertilizers include sewage sludges, composted manures and tan kages, hydrolyzed poultry feathers. Green-Releaf is composed of a biostimulant growth complex with minor fertilizer elements and plant extract concentrate added.

Dr. Gil Landry, University of Georgia

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Circle No. 290

Contec new from Scotts Company

The introduction of Contec controlled-release fertilizer in 1998 will offer more fertilizer flexibility for turf managers than ever before. Contec is the new complete line of homogenous methylene urea turf fertilizers from The Scotts Company. Contec “Premium,” Contec “High Performance” and Contec “Complete Course” provide turf managers a methylene urea that will respond in the cool spring and late fall. Contec will also provide a superior summer fertilizer that will give turf managers excellent results without worrying about burning or foot-printing. Contec has a smaller particle size, more uniform granule, and more particles per square inch, to provide the best coverage, no matter how low turf is moved. For more information on Contec, call 1-800-543-0006, and mention LM, or Circle No. 290

Bolster growth with Sustane

The Bolster plant growth supplement from Sustane Corp. comes in water soluble packaging and is also available in liquid form.

The line’s products are specifically developed for increased growth under sub-optimal and stress conditions. Be sure to mention LM if you call the company at 800/352-9245, or Circle No. 290

GoldCote precious for fertilizer

Terra’s GoldCote polymer technology delivers an exact controlled release fertilizer function that heeds temperature conditions.

As soil temperature increases, water vapor from the soil increases through the multiple coatings. The resulting condensation and pressure within the fertilizer granule causes a precise and predictable release of nutrients, according to the company.

For more information, tell Terra that you read about it in LM when calling 800/288-7353 or Circle No. 292

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ESN provides precision nitrogen

Recognizing that climates are different throughout the United States, ESN precision controlled nitrogen from United Horticultural Supply is custom formulated for maximum performance in each of the U.S. climate zones.

According to the company, the steady, predictable release characteristics of ESN result in high quality green turf based on a patented process.

For more information, call 800/847-6417 and note that you saw ESN in LM, or Circle No. 293

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MultiCote controls release

MultiCote from Vicksburg Chemical Corp. is composed of three different high-quality polymer coated fertilizer granules. Soil temperature determines the release rates of the nutrients that provide a constant source of superior turf, according to the company.

For more information, LM readers can call 800/227-2798, or Circle No. 295

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