

Making the Best Field from Existing Soils

How to create top-quality fields, by using the materials already on site and adding some minor amendments.

by Scott Pippen, Supervisor of Streets and Parks, Village of Lincolnshire, Illinois

orth Park is a 63.5-acre site that was purchased by the Village of Lincolnshire, IL, in the fall of 1999. The site was acquired to maintain open space in the rapidly growing Village, and to provide playing fields for the residents of the area. Prior to the development of this project, the Village's parks contained only two small playing fields. The schools in the area were expanding their buildings to meet the rise in their student populations, and constructing these expansions over many of the existing fields on their campuses. The local youth sports organization was having a very difficult time meeting the communities needs with the limited facilities available to them. Thus, the \$14 million North Park Project was born.

The North Park site contains 28 acres for active use, and 35 acres for passive use. The 28-acre active area includes six soccer fields, two baseball fields, three softball fields, ice skating rinks (hockey and figure skating), a sled hill, tennis courts, basketball courts, a playground, a 280-car parking lot, a concessions building, and a maintenance facility. The passive use area is divided into a parcel which will be a dedicated Illinois Nature Preserve, and a transitional area from the Nature Preserve to the active use area. The Nature Preserve is an extension of one the Village had already dedicated to the State several years ago, which borders the southern edge of the property. The transitional area will have trails for cross-country skiing and hiking, and a picnic shelter. The park is scheduled to open either this coming Fall, or in the Spring of 2002, depending on the development of the turf.

One of the first decisions the Village had to make, was what kind of sub-base the athletic fields would



The skinned surface of the infield was 60-70% clay and 30-40% sand, with calcined clay incorporated to a depth of one inch.

have, sand or native soil. We toured several facilities of both types in the area and talked to the sports turf managers at each site. We discussed the maintenance and construction requirements for each type, and came to the conclusion that the native soil field would best meet the Village's needs due to ease of construction, and less maintenance requirements.

The next step was to see what kind of soil was already on the site and determine if it would support the quality of athletic fields the Village wanted to construct. We wanted a soil profile that would provide good support yet have some resilience, and would be a good growing medium for the turf. A soil test was performed, and the results showed the soil had a composition of 36.6% clay, 19% sand, and 44.4% silt. Although the soil test results showed that we had a silty clay loam, which is a heavy soil, we felt that with some amendment, it should meet our requirements.

The Village brought in Ken Mrock, Sports Turf Manager for the Chicago Bears, as a consultant for the project. Ken reviewed the test results, and examined the soil firsthand. He recommended that since the soil had remained untouched for a number of years, and that it had good structure and was friable, that it would be best to use the existing top soil as a base for the turf's growing medium.

The next area we needed to address is how the soil would drain. Since the soil was heavy, it had a low percolation rate. Our park design consultant recommended several alternatives to improve the soil's drainage capacity, including amending with dirty sand, tilled sand, or mineral topsoil, and including a large number of under-drains throughout the playing fields. The estimated costs of these methods ranged from



It was important that the topsoil (growing medium) was thoroughly blended with the subgrade to prevent layering.

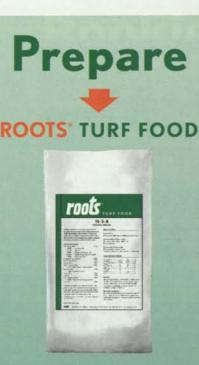
\$400,000 to \$900,000, which based on the projected results, we felt was prohibitive. I began discussing this issue with every member of the Midwest Chapter STMA that I came in contact with, and everyone of them made the same recommendation—calcined clay. So, we looked into calcined clay, and found that it would provide the percolation rate we desired, as well as many other added benefits.

The calcined clay, installed at a rate of two tons/1000 sq ft, would improve the drainage, moisture retention and pore space, and reduce compaction of the soil. It would also assist in reducing leaching of phosphorous, which was important to the Village as the headwaters of the Chicago River are on the site. The calcined clay allowed us to eliminate \$30,000 in under-drains and still maintain good drainage on the field. The only under-drains installed are around the perimeters of the soccer fields. I requested that these drains remain, so we would have a system to tie into in case we need to install additional drainage at a later date.

We specified that the calcined clay be spread uniformly to a depth of 1.5 inches, and then be incorporated into the top four to six inches of the soil. This would greatly reduce our maintenance, repair time, and irrigation requirements of the turf once play begins at the park. The total required to do the entire area of athletic turf, was approximately 1400 tons which, according to the manufacturer, is the largest application of calcined clay ever done in a new park construction.

Next, we had to decide how the soil would be handled during the sub-base preparation, and what methods would be used to reapply it to the site. The project specifications called for the soil to be spread to a minimum depth of six inches. We requested that the soil and calcined clay be stockpiled in the area where our fields that would receive the greatest use would be located. This was done because we knew that there would be some material that the scrapers would not be able to retrieve, and we would have a thicker layer of good topsoil and calcined clay left, which would subsequently lead to a deeper root zone.

We specified that prior to the topsoil being re-spread, the sub-grade should be scarified to a depth of eight inches. This was to allow for a blending of the topsoil with the compacted clay sub-grade to prevent a layering in the root zone. We also requested that the topsoil be re-spread and rough graded using tracked machines. We wanted to minimize compaction to the topsoil as it was being reapplied, and tracked machines apply less pressure than wheeled machines. Once the soil was spread and the calcined clay incorpo-



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5 lbs. per 1,000 sq. ft., applied soon after time of play restores the turfgrass stressed by severe wear, and gets the field ready for further play.



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In the combination softball outfield and soccer field, calcined clay was incorporated into the soil to a depth of four to six inches.



The finished product, following hydroseeding.

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rated, vehicular traffic was kept to a minimum, and the remaining work was completed by hand as much as possible.

Another soil or surface issue we needed to look at was the composition of the skinned areas of the baseball and softball diamonds. Again, we wanted a surface that would be firm and provide good footing, yet would be resilient and allow some cushioning for the athletes. We wanted a surface that we would be able to maintain, and that would be affordable to construct. We investigated the crushed aggregates, and the clay-sand fields.

I then went back to my Midwest Chapter STMA associates for feedback and guidance on this issue. After looking at all of the options, the decision was made to install the fields with a 60%-70% clay and 30%-40% sand blend material, with calcined clay incorporated into the top 1 to 1.5 inches. This is the composition of all of the existing fields in Lincolnshire, so my maintenance staff has experience with this type of surface. A one-inch quick connect port was installed behind each of the pitching mounds just below grade to allow us to maintain an adequate level of moisture on the skinned surfaces.

The Village will soon be purchasing an infield grooming machine to assist with the maintenance of the fields. The material installed, and equipment provided, will allow us to maintain top-quality fields with minimal maintenance time.

The Village of Lincolnshire is committed to providing the highest quality fields for the athletes possible, while maintaining fiscal responsibility. It was this objective that led to the decisions made in the development of this park. The processes used in the surface preparation and other areas will lead to a top-quality playing surface for a variety of sports, which are able to be maintained at a high level without breaking the bank.

These processes were developed through many interactions with other Sports Turf Managers both local and around the country. I am grateful to all of them for offering a few minutes of their valuable time to help the Village achieve its goals.

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Rookies

Seed Varieties

Tall Fescue

Quest, from Jacklin Seed (a business unit of the J.R. Simplot Company), is a new tall fescue that is ideal for athletic fields. Developed from breeding plots in the Potomac River Valley of Maryland, Quest was selected and bred to take the heat and humidity of the Transition Zone. According to J.R. Simplot, Quest is one of its top performers for brown patch resistance, ranked number one for overall quality, and displayed the darkest color during field trials in New Jersey. Even in northern Idaho, Quest demonstrated excellent performance, and ranked number one for pink snow mold resistance. J.R. Simplot says the qualities of a Quest turf mean more energy can be spent on greening up in the spring, and less on fighting problems like microdochium fungi.

For more information, circle 130.

Perennial Ryegrass

Palmer III, from Lofts Seed, is a turf-type perennial ryegrass ideally suited for lawns, golf courses, athletic fields, race tracks, parks and other applications. In athletic field applications, Palmer III can be used as a monostand, or in combination with Kentucky bluegrass for use on fields that experience moderate to heavy play. Where bermudagrass is the desired sports field surface, turf-type perennial ryegrass is primarily recommended as the warm season overseeding alternative. Lofts Seed says Palmer III provides quick germination and excellent seedling vigor, offers excellent wear tolerance, tolerates compacted soils, can establish and compete against a potential Poa annua invasion, features improved heat tolerance and mowability, and is a popular choice for winter overseeding of dormant bermudagrass. Other qualities of Palmer III include an upright growth habit that forms a dense, fine-leaved stand of turfgrass; bunch-type grass, that spreads via tillering; it does not produce thatch and will withstand soil pH of 5.5 to 8.0.

Rve Blend

Pacific Four Seasons Perennial Rve Blend, from Pacific Coast Seed. can be used to seed new fields, as well as to interseed or overseed sports fields. The seed is made by teaming up Arena (a product of New Zealand breeding programs) with one of the best North American varieties, such as Brightstar II. Manhattan 3 or Paragon. Such combination applies the latest developments in ryegrass breeding to the demands placed on Northern California sports fields today. Arena maintains a higher level of winter activity than other perennial ryes, shows strong spring recovery after winter use, can adapt when stress from California's heat and dry season hit, and has a fine texture and dark green color that match top-scorers in National Turf Evaluation Program trials. Pacific Four Seasons Perennial Rye Blend can stand up to constant use throughout the year, and can be depended upon to contribute excellent summer growth.

For more information, circle 132.

Premium Turf Mixture

Sports Turf. from Pickseed West, was developed for athletic fields and high traffic areas that require deep roots, wear resistance and toughness. The seed is a proven mixture of Pickseed's hardiest varieties, including Quantum Leap Kentucky bluegrass, America Kentucky bluegrass, Jasper Creeping Red fescue and Cutter Perennial ryegrass. The bluegrasses provide rapid development and outstanding aggressiveness to force out weeds; have the ability to heal quickly from traffic and machine damage; and feature a dense growth habit to resist major turf diseases, even under the shortest of mowing conditions. The fescue contributes superior color, texture, spreading, and resistance to Helminthosporium leaf spot and melting out; while the ryegrass offers quick germination, winter hardiness, tolerance to summer stress and excellent mowability. For more information, circle 133.

Bermudagrass Blend

Bermuda Triangle, from Pennington Seed, is a professional quality bermudagrass blend which features certified Mohawk, Sultan and Sydney turf-type bermudagrasses. Bermuda Triangle-a superior turfgrass with good cold tolerance, excellent color and improved root density-is ideal for areas where wear tolerance is important. Other advantages of Bermuda Triangle are a medium fine texture, excellent drought tolerance, increased turf density, good seedling vigor, and a wide range of adaptation due to genetic diversity. Applications for the seed include golf courses (fairways, tees and rough), soccer fields, ballparks, parks, schools, lawns and commercial landscapes.

For more information, circle 134.

Intermediate Ryegrass

TransEze, from Roberts Seed Company, is a transitional ryegrass. This new type of intermediate ryegrass combines the turf quality of perennial ryegrass with the quick transition of annual ryegrass, without reverting to annual. TransEze, the product of a tenyear breeding effort, can be used as an overseeding grass in warm-season areas, and as a short-lived nursegrass in cooler areas. When used for winter overseeding of bermudagrass, TransEze quickly establishes a high-quality turf cover similar to perennial ryegrass. When spring arrives, however, the annual nature of TransEze results in a fast transition to the warm-season turfgrass without the excessive persistence of perennial ryegrass. In Northern areas, TransEze is ideal for use with Kentucky bluegrass, fine fescue or tall fescue, providing a quick, temporary cover which fades away within a year, allowing the perennial grasses to take over. For more information, circle 135.

Kentucky Bluegrass

Showcase Kentucky bluegrass, according to Seed Research of Oregon. is a great advancement in the development of Kentucky bluegrass for sports field managers, sod growers and golf course superintendents. An elite Kentucky bluegrass with a compact growth habit, Showcase is a strong

For more information, circle 131.

Rookies Rookies Rookies

performer in the shade, and offers benefits such as early spring green-up, excellent fall color, superior performance at low mowing heights, good drought tolerance, an appealing dark green color, fine leaf texture and high shoot density. Showcase Kentucky bluegrass was bred from a nursery of C-78 Kentucky bluegrass that was originally selected from an old turf nursery in Rhode Island. Well-adapted to a wide range of climatic conditions, the seed provides excellent resistance to turf problems like stripe smut (Ustilago Striiformis), necrotic ring spot (Leptospaeria korrae), powdery mildew (Erysiphe graminis) and leaf spot (Dreschlera poae).

For more information, circle 136.

Turf Overseeder

The Brillion Overseeder, from Brillion Iron Works, delivers precise seed placement, with optimum seed-tosoil contact for vigorous overseeded stands. The unit can provide hearty new stands of overseeded turfgrass into existing seasonal, outdated or less desirable varieties, and bare spots, and is ideal for sports turf managers and golf course superintendents. Brillion Overseeders are available with curved fairway knives for minimal disturbance in existing turf, or with straight knives for a more aggressive dethatching cut. Regardless of model selected, the machine features 3/16-inch, high-carbon, heat-treated knives that are set on two 9/32-inch spacings, and can be adjusted to cut grooves at depths of 0 to 1.5 inches. The Overseeder comes equipped with Brillion's famous seed metering system, and is three-point hitch mounted with PTO-driven knife cutters. A four-ft model uses a Category I hitch that offsets the Overseeder to the right for close-in work, and a six-ft model is centered behind the tractor using a Category I or Category II hitch. For more information, circle 137.



Soil Preparation

The RotaDairon RD 145 Soil Renovator, with a working width of 60 inches and a till depth of 5.5 inches, is intended for use with compact tractors. The unit is designed to fit all compact tractors on the market that have 30 to 50 HP and a threepoint hitch PTO. The RotaDairon RD 145 is ruggedly constructed, and utilizes an oil bath chain drive system and torque limiter device. The RD 145 can replace many labor-intensive tasks for athletic fields and golf courses. The unit's primary function is cultivation of topsoil for seeding and re-seeding, but it also helps cultivate existing turf by turning it under; buries stones, clods and overgrowth; and produces a level surface for seeding or sodding.

For more information, circle 138.



Field Marking

Pioneer Manufacturing's Brite Striper 1500 (BS1500) athletic field marking machine is gasoline-powered and features a heavy-gauge, welded steel frame that ensures trouble-free operation. The BS1500 has a large, seven-gallon, stainless steel tank that reduces the number of delays for refilling. Other features of the BS1500 include large, fully pneumatic 10-inch wheels that provide smooth rolling on rough athletic surfaces; a 12-ft hand hose with wand, to quickly spray large areas; and a fully adjustable spray box, which is offset to eliminate straddling of freshly painted lines. The machine is currently in use at over 4,000 high schools, colleges, universities, and park and recreation departments nationwide. For more information, circle 139.

Sod and Sprigs

SeaIsle1, a new salt-tolerant, warm-season turfgrass will be available for sale this summer as sod or



THE NEW CERTIFIED BERMUDAGRASS STANDARD FOR ATHLETIC FIELDS, GOLF COURSES & HOME LAWNS

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Rookies Rookies Rookies

This new fine-bladed sprigs. seashore paspalum cultivar was developed by Dr. R.R. Duncan at the University of Georgia's Griffin Experiment Station in response to water quality and water conservation concerns, and has the ability to handle a number of alternative water sources-recycled wastewater, effluent, ocean water, gray and brackish water. Because SeaIsle1 traces its roots to early seashore paspalum cultivars that evolved on sand dunes in coastal environments-where conditions like salt spray, prolonged drought, and inundation by salt water were commonit can handle stresses such as drought, salt, waterlogging, low light, and extremely high- or low-pH soils. SeaIsle1 is similar in texture, high wear tolerance and low shade tolerance to hybrid bermudagrass, but has a richer dark green color. For more information, circle 140.



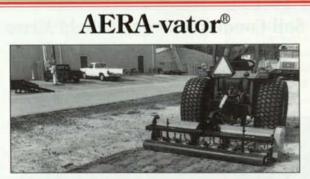
Marking Stencils

Newstripe Polytough Stencils are ideally suited for the marking and remarking of athletic fields. These virtually indestructible stencils are constructed of 1/8-inch-thick, high grade plastic material. Newstripe stencils for field and facility marking include NCAA football marking kits, six-ft by three-ft football marking kits, bold block letters for team names, standard emblems and symbols, mascot stencils for fields and press boxes, and custom stencils of logos and names. The company also markets a complete line of marking equipment and stencils for turf or pavement applications. For more information, circle 141.

Mower

National Mower's 8400 Hydrostatic Triplex Mower is the newest in the company's line of dependable and affordable trim mowers. The machine's low center of gravity and heavy-duty front end enables it to tackle the most difficult hills, slopes, banks and edgings with ease. The 8400 is powered by a 16-HP Briggs & Stratton Vanguard engine, has an 84-inch width of cut that covers 3.5 acres per hour, and features power steering for trimming difficult areas or negotiating tight corners. The new mower's hydrostatic drive provides independent reel and ground speeds, and electric reel clutches turn on and off all three cutting reels simultaneously for added safety.

For more information, circle 142.



I've been in the Grounds Maintenance business for 20 years. In my opinion, the Aera-vator is the greatest invention since the power mower. I came to the city of Brentwood as the Grounds Foreman and noticed right off the compaction problem in all of the public parks and athletic fields.

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Dan Vehlewald **Grounds Foreman** City of Brentwood, MO

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Winners

Dan Tolson, a junior at Colorado State University in Fort Collins, CO; Brian K. Pardoe, from Bethesda Country Club in Bethesda, MD; and Brian Thompson, from Elcona Country Club in Bristol, IN, have won slots on the maintenance team at the U.S. Open at the Southern Hills Country Club in Tulsa, OK. The Toro Company established the Toro Championship Tournament Training Program in partnership with the Golf Course Superintendents Association of America (GCSAA), to provide an opportunity for assistant superintendents and student members to learn what happens at the highest level of golf course management. The three winners will join John A. Szklinski, golf course superintendent at Southern Hills Country Club, alongside members of the maintenance staff detailing the course before each round.

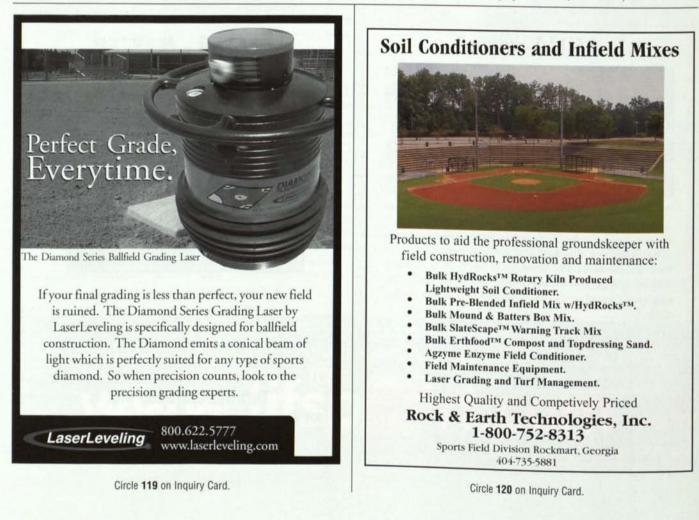
The applicants, all members of the GCSAA, submitted essays explaining where they see themselves professionally in the next 10 years, and what they hope to accomplish during that time. "The experience is designed to expose superintendents at the beginning of their careers to a variety of cultural practices and management techniques that make major tournaments a success," explained John Wright, director of golf marketing for Toro's Commercial Division.

Office and Awards

Articulating mower manufacturer, Lastec, has established a branch office in Yalding, Kent, UK. The office serves the UK and parts of Europe, including a network of 13 dealers. Employed at the new office are John Millen, operations manager; Keith Elliment, senior sales representative for the South of England; Andy Russell, service technician; and John Lover, accountant.



In other Lastec news, the manufacturer recently gave out top awards and Rolex watches during its annual Distributor Awards Breakfast. The World Class Distributor of the Year Award was given to Tom Wojcik (above, center) of Finch Turf Equipment, Westminster, MD, while the World Class Sales Person of the Year Award was given to Denny Lehman of Reed Equipment Co., Stockton, CA.





October 31-November 1

The Turfgrass Landscape & Equipment Expo, Fairplex, Pomona, CA. Contact Southern California Turfgrass Council, at tel. (800) 500-SCTC, or tel. (818) 764-5016, or email: expo@turfcouncil.org. Web site: http://www.turfcouncil.org.

November 4-6

Mississippi Turfgrass Association Conference and Trade Show, Hattiesburg, MS. Contact Nell Cobb, at tel. (888) 268-9888 or email: sodfarm@c-gate.net or visit www.msstate.edu/org/mta

November 10-13

12th Annual Green Industry Expo (GIE), Tampa, FL. Contact Professional Lawn Care Association of America, at tel. (770) 973-2019, or e-mail: info@gieonline.com. Web site: http://www.gieonline.com.

November 13-15

New York State Turfgrass Association's (NYSTA) Turf and Grounds Exposition, Oncenter, Syracuse, NY. Contact NYSTA, at tel. (800) 873-TURF, or tel. (518) 783-1229, or e-mail: nysta@nysta.org. Web site: http://www.nysta.org.

December 3-6

35th Ohio Turfgrass Conference & Show, Columbus, OH. Contact Kevin Thompson, at tel. (888) 683-3445, (ext.3151). Web site: http://www.ohioturfgrass.org.

December 5-7

The Rocky Mountain Regional Turfgrass Association's (RMRTA) 48th Annual Conference and Trade Show, Denver Convention Center, Denver, CO. Contact RMRTA at tel. (303) 770-2220, or e-mail: rmrta@gwami.com.

December 12

Turfgrass and Landscape Institute & Trade Show, Sequoia Conference Center, Buena Park, CA. Contact Southern California Turfgrass Council, at tel. (800) 500-SCTC, or tel. (818) 764-5016, or email: expo@turfcouncil.org. Web site: http://www.turfcouncil.org.

Website and Return

Yazoo/Kees Power Equipment Company has announced vast improvements to its website (www.yazookees.com), which is now up and running. Designed as a resource for all members of the lawn care industry, the site offers a company history, product offerings, and operational, maintenance and safety tips.

Bob Morgan has returned to Yazoo/Kees, in the position of Sales Manager. Morgan is responsible for distributor coverage of the south/southeast region of the U.S., and will manage that same territory for BlueBird International (both companies are divisions of Husqvarna Turf Care Company). "We are eager to utilize [Bob's] product, market and distribution expertise to assist us in our growth efforts of the Yazoo/Kees brand," stated Denis Bedard, director of sales and marketing.

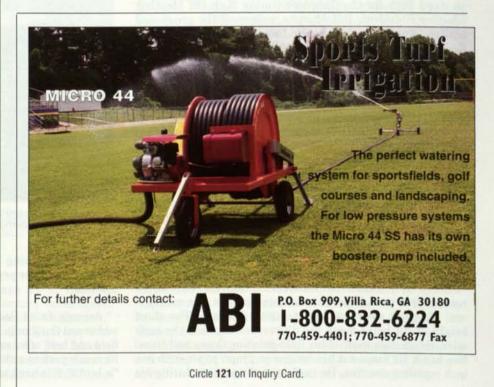
Consolidation

United Horticultural Supply (UHS) has merged its UHS Midwest Division and Great Lakes Division to form the new UHS Central Division, which will place its administrative office in the Chicago area. Concurrent with the restructuring, Bob Flynn has been appointed division manager, and Russ Mitchell will assume a new position in Denver as the company's National Technical Director. "While markets in the new geography can be unique," Flynn said, "there are enough similarities to offer greater representation and support to our customers in the new division. Our goal is to provide stability...to our existing customers and to take advantage of new opportunities in a way we never could before."

Name Change

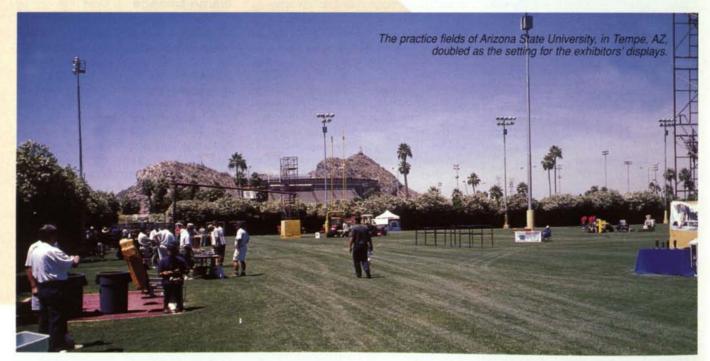
Deere & Company has announced that McGinnis Farms, a recently acquired wholly owned subsidiary located in Alpharetta, GA, is changing its name to John Deere Landscapesa change which will include use of Deere & Company's leaping deer in its logo, John Deere Landscapes broadens John Deere's traditional role of lawn and turf care equipment sales, to one that is more comprehensive. Although McGinnis Farms had operated branches under four different trade names-McGinnis Farms, Jenco Wholesale Nursery, Pipe 'n Heads and Plantland-this latest announcement unifies all operations under a single trade name.

"This name change allows us to create a larger vision of what John Deere Landscapes will become," stated John Jenkins, Deere & Company president of the Worldwide Commercial and Consumer Equipment Division. "Instead of serving just regional markets, John Deere Landscapes aspires to become a national supplier of products and services."



STMA in Action

STMA of Arizona Meets



F Orty-five members of the Sports Turf Managers Association of Arizona met in the Press Box at Sun Devil Stadium of Arizona State University in Tempe on April 20th for the Chapter's Spring Kick Off Meeting. Chapter President, Bill Murphy, welcomed the group and outlined the day's schedule. He turned the program over to Dr. David Kopec who gave an excellent presentation on "Soil Aerification & Top Dressing for Sports Turf." His presentation was supplemented with very informative handouts.

Brian Johnson, ASU Director of Athletic Facilities was next on the program. His presentation centered on the factors he must deal with in accommodating a full schedule of games including ASU football along with the NFL Cardinals, sometimes on successive days. In season, he keeps ahead of the game by pre-germinating seed in wheelbarrows. These have proven very effective for him and they are easy to wheel out to where needed. The pre-germinated seed comes up much more quickly and fills in any thin or bare spots in the turf caused by excessive wear. Transitioning back to Bermudagrass in the spring after the perennial ryegrass of fall and winter has always been a special challenge. Brian stated that the new Bermuda seed varieties have been a real lifesaver for him. He seeds at the rate of three pounds per thousand square feet. He uses several different varieties and mows at 3/8 inch. The short height of cut helps mask the differences between the varieties. Brian does most of his field-painting (logos and lines) free hand. He maps out his designs on graph paper, with one inch equaling one foot. He explained the process during his



Attendees examine and discuss the results of one of the aerification demonstrations on the ASU practice fields.

presentation, using descriptions and pictures, and then demonstrated the process in the afternoon out on the practice field.

Arizona State Secondary Coach (football), Dan Findley, addressed the group. He explained what he likes in a football field and how, after several years at a school on artificial turf, he much prefers natural grass. He stated that artificial turf "is brutal, it is hard, causes bad burns and produces excessive