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Circle No. 120 on Reader Inquiry Card

### Property at a glance

**Location:** University of Missouri, Columbia, MO

**Staff:** University of Missouri Landscape Services

**Category:** School or university grounds

**Total budget:** \$1,510,000

**Year site built:** 1839

**Acres of turf:** 261

**Acres of woody ornamentals:** 32

**Acres of display beds:** 3

**Total paved area:** 160

**Total man-hours/week:** 1,980

### Maintenance challenges

- ▶ Entire site snow removal
- ▶ Burning the wildflower planting
- ▶ Eliminating paths
- ▶ Maintaining Botanic Garden quality

### Project checklist

(Completed in last two years):

- ▶ Established Botanic Garden
- ▶ Designed and built a 3-acre South Quadrangle
- ▶ Created a capital campaign – “The campus garden...a living legacy”

### On the job

- ▶ 43 full-time staff, 13 seasonal employees, 18 licensed pesticide applicators

# University of Missouri

## A 1999 Grand Award Winner of the Professional Grounds Management Society for School or University Grounds

With a 700-acre campus, the University of Missouri, a land grant college founded in 1839 and the first institution of higher education west of the Mississippi, presents many challenges to its crew, Landscape Services.

Climatically, the grounds are a turf-grass transition zone, USDA hardiness zone 5 and an ecological transition zone between the hardwood forests of the Ozark Plateau and the open rolling prairie.

The majority of the university's display gardens, plants and 38,000 annuals are located at the 104-year-old Francis Quadrangle. The annuals are located in the campus' highest maintenance zone, designated as Class A. Peace Park, a four-acre greenspace on the border of campus and downtown, contains over 200 trees representing 50 different species. Trees are watered for three years, and shrubs for two. With an average of 250 trees and 1,000 shrubs planted annually, the staff is kept busy, especially during dry spells.

- ▶ The Columns, the only remains of the Academic Hall, are the symbol of the University. Shown here with Jesse Hall in the background, this is the second most photographed spot in Missouri.





◀ With more than \$60 million worth of construction work on campus each year, Landscape Services keeps one crew busy with repairs. Here, workers resod following a major utility project.

Editors' note: *Landscape Management* is the exclusive sponsor of the Green Star Professional Grounds Management Awards for outstanding manage-

**PGMS**

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ment of residential, commercial and institutional landscapes. The 2000 winners will be named at the annual meeting of the Professional Grounds Manage-

Society in November. For more information on the 2000 Awards, contact PGMS at 120 Cockeysville Road, Suite 104, Hunt Valley, MD; 410/584-9754. Web-site: [www.pgms.org](http://www.pgms.org)





# Louis-Dreyfus estate revives soil

**Healthy plants are the result of a healthy plant ecosystem. Careful soil analysis and long-term treatment brought the gardens at this famous estate back to their glory**

BY KEVIN HATTORI

**W**alking amongst the amazing variety of flora found at the Louis-Dreyfus estate in Mt. Kisco, NY, it is difficult to believe the property is located less than an hour from New York City. Many liken this estate to a world where nothing is in distress, but that wasn't always the case, says its manager, Lewis Sparks.

When Sparks took over the estate in the spring of 1990, there were no gardens, small wooded ornamentals, perennials or annuals. One of the first things he did was to "open up some ground" to create some herbaceous gardens and vegetative areas. When he began planting, Sparks was baffled when the new plants did not do well.

He also noticed that many of the trees were producing an overabundance of seeds, a common occurrence when trees

are under severe stress or in a state of decline. It was then that he began to suspect something was wrong with the soil.

"William (the owner of the estate) has always been a big-time tree mover," says Sparks, "so I knew I had to do something to change the way things were being done." Although regular fertilizer applications were being made, Sparks knew there was something bigger that needed to be addressed. "It wasn't that the property wasn't always nice," he says, "but we kept seeing problems pop up on a frequent basis that pointed to certain nutrient deficiencies."

In 1992, Sparks met Growth Products' founder Clare Reinbergen and discovered they both believed healthy plants are the result of a healthy plant ecosystem, including the soil in which the plants grow. In short, what was in the soil was as vital to the plant as sunlight and water. "Clare

“Managing an estate and making it better is always a work in progress. Change won’t happen overnight, but it will happen if you are diligent about pursuing it.” – Lewis Sparks

made me more aware of the possibilities of affecting things in the soil,” he says. “I liked the whole scientific aspect to their program. It wasn’t ‘complicated science,’ but science grounded in soil health and testing.”

Sparks found huge stockpiles of chemicals when he arrived at the estate. However, there was no history of how the estate had been maintained. What was clear was that the tree maintenance firm that had previously tended the estate had taken what he terms a “big gun” approach with chemicals, spraying everything without regard to long-term effects. A side effect of that approach was the elimination of beneficial insects and

organisms. “As far as I could tell, this had been going on since the mid-1970s,” he said.

**Investigating the soil**

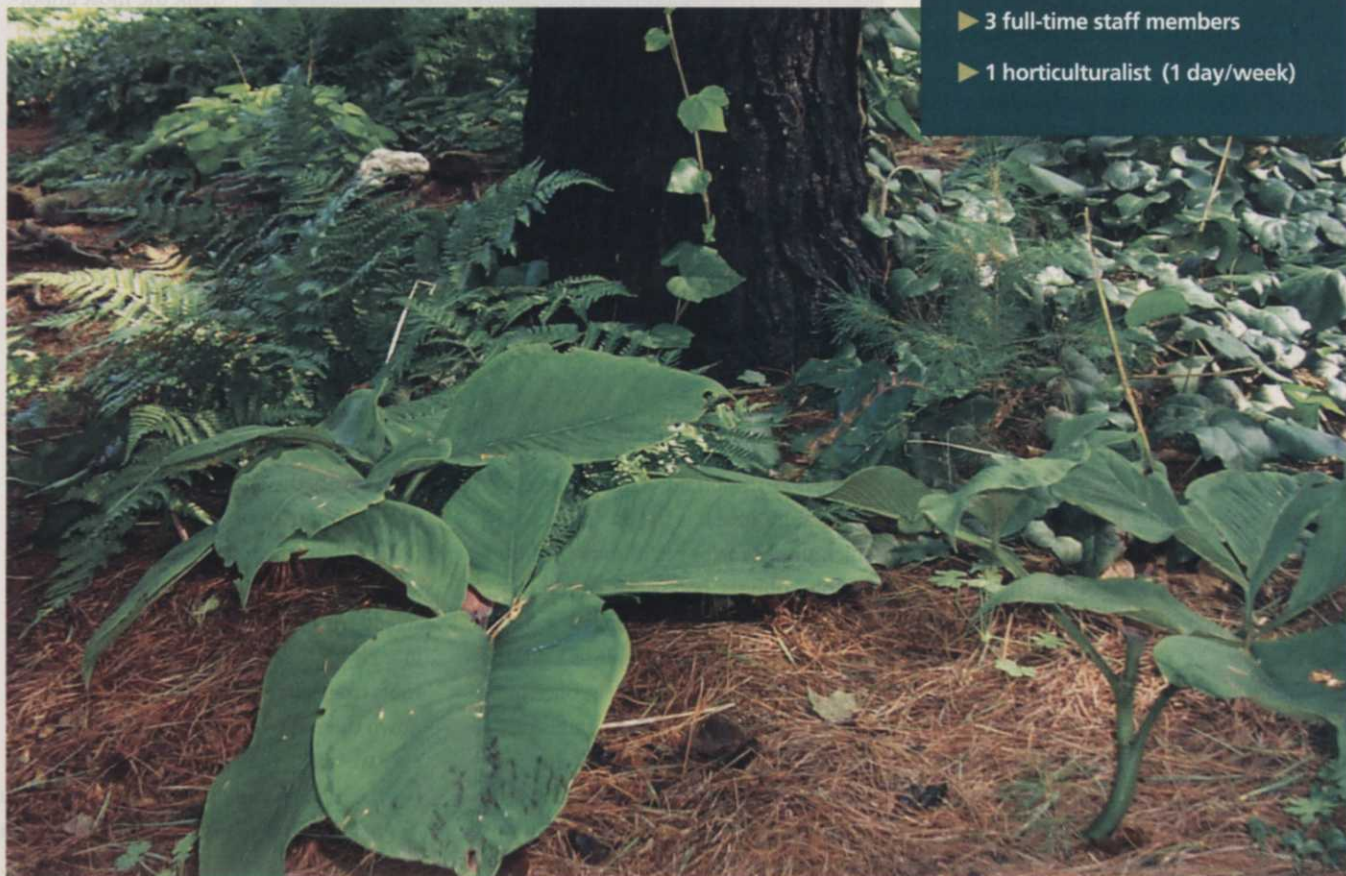
After consulting with Reinbergen, Sparks decided to take soil samples. The results confirmed that something was wrong with the property’s soil structure.

Testing conducted in 1994 revealed that the soil contained excessively high levels of phosphorus (in many places, it was found to be 10 times the normal levels found in the area) throughout the estate’s root zone, an element that tends to form insoluble

*continued on page 46*

**Louis-Dreyfus estate**

- ▶ 19 landscaped acres
- ▶ 80 additional acres to be used for conservation and reintroduction of native species and wildlife plantings
- ▶ A wide variety of tree species (80% of which were moved to their present locations), including:
  - ▶ 12 different kinds of European beech
  - ▶ Dawn redwoods (very rare)
  - ▶ Pin oaks
  - ▶ Norway maples
  - ▶ Sugar maples
  - ▶ White ash
  - ▶ Tulip trees
- ▶ All gardens and terraces on the estate were designed and implemented by Lewis Sparks
- ▶ 3 full-time staff members
- ▶ 1 horticulturalist (1 day/week)



*continued from page 45*

materials in the soil. High levels of phosphorus have also been known to reduce soil pH levels, and additional testing showed that the property's pH levels were indeed low, around 5.5. Perhaps most telling of all was the extremely low organic matter percentage — 5% is desired, but most of the estate's soils were around 3% to 3.5%.

Sparks knew dramatic changes were needed. The obvious step was to stop all applications of phosphorus. Reinbergen also recommended repeated applications of a soil amendment (in this case, Essential was used). She hypothesized that the organic solution, which contains humic acid, would solubilize the excessive phosphorus in the soil. This would allow the phosphorus to be used by the plant or moved out of the root zone. She also believed that the humic substances, plant extracts and kelp contained in the product would address another critical situation — the need to increase the percentage of organic matter in the soil.

**Soil pH challenge**

When the time came to raise the soil's pH, the high calcium levels presented a tricky problem. Lime application was not a viable option because it would have increased the calcium levels further, so potassium carbonate (which has an alkaline pH) was used to raise the pH slowly. Finally, the turf still needed to be fed, so a fertilizer solution containing slow release liquid nitrogen and potassium was used to supply important macronutrients without worsening the existing phosphorus problems.

Sparks has been conducting his soil testing every two years since 1992, so enough time has passed to show the effects of the prescription program he undertook. Recent tests show that the pH levels now average 6.5 — one point higher than before the pro-



**Lewis Sparks (left) tells author Kevin Hattori about the Louis-Dreyfus estate's soil problems.**

estate's plants. Sparks believes there are a number of things contributing to this: "I think the most important thing is that the plants are stronger

**Lewis Sparks' experience**

- ▶ 10 years retail nursery experience
- ▶ 20 years estate work experience (10 years at Dreyfus)
- ▶ Board member, Bedford Tree Advisory Board
- ▶ Member, Yorktown Grange Committee

gram. More important, a soil pH level of 6.5 is optimum since it is the one pH level at which the 12 major plant nutrients (nitrogen, phosphorus, potassium, sulfur, calcium, magnesium, iron, manganese, boron, copper and zinc) are available as a group. The estate's phosphorus levels, once outrageously high, have dropped significantly (24%). And the percentage of soil organic matter throughout the estate is now 4.4%, far closer to the ideal of 5%.

Most telling of all is the health of the

now because they are being fed by what is in the soil. We get fewer weeds than we used to, even though we haven't used herbicides for eight years. We do get occasional flare-ups of fungal disease on some of our grassy areas, but it is important to note that they are never long lasting. They never seem to spread, and the turf always mends itself." To combat the fungal disease, he applies a biological fungicide twice yearly.

As far as the effects of the improved soil conditions on his plants are concerned, Sparks offers the following illustration: "The soil here used to be so bad that when we would use blowers, the existing turf would literally blow away. There were just no roots to speak of. Now, the roots are way down there. We're always amazed whenever we check the soil and rooting." **LM** — *The author is director of public relations at Growth Products, White Plains, NY. He can be reached at 800/648-7626.*



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Circle No. 121 on Reader Inquiry Card

## Living on the edge

BY CURT HARLER /  
CONTRIBUTING EDITOR

Just as a bit of starch accents the clean lines in a shirt, a sharp cut accents the edges where grass meets a path or flower bed.

At Evergreen Landscapes Inc., Newbury, OH, Dan Harb figures his edger paid for itself and made him money the first year. "I was looking for something that cuts a nice edge," Harb says. His choice was the Trenchmaster (see page 49).

"If you try to do it by hand, everyone's edge turns out looking different. With a machine, it is nice and uniform," Harb continues.

In addition to improving aesthetics, Harb wanted to speed up a labor-consuming job. "The machine costs a lot of money," he admits, "but with less labor required, it paid for itself in less than a season. If you don't do a lot of edges and beds, it might not pay back as fast."

Still, both he and his customers are impressed with the sharpness of the cuts the unit produces — and that makes for a good, long-term business relationship.

Check out the edgers below to find one that will put a crisp border around your jobs.

**ARDISAM, INC.**  
**800/345-6007**

[www.ardisam.com](http://www.ardisam.com)

Both the K286B and the K226B edgers from Ardisam, Cumberland, WI, are powered by 3.5-hp Briggs & Stratton engines. Each has adjustable cutting heights from 0 to 4 in. and feature cutting



angle adjustment. Frames are solid steel, and the robot head adjusts from horizontal to vertical. The 286 has dual steel hub wheels for extra stability. The 226 has a single front wheel; at 65 lbs., it is 2 lbs. lighter than the 286.

Circle #260

**BLUEBIRD INTERNATIONAL**  
**800/808-BIRD**

[www.bluebirdintl.com](http://www.bluebirdintl.com)

Cut sod quickly and efficiently with the SC-18 from Bluebird, Denver, CO. The unit has the same 4-wheel drive power of the



XT120SE stick edger  
from John Deere

- ▶ Create nice and uniform edges; jobs done by hand all turn out different
- ▶ Speed up a labor-intensive job
- ▶ Make more money, especially if you edge a lot of beds and lawns



older version, but features improved transmission design. A depth control knob offers consistent cut. Anti-vibration folding handle makes unit easy on the operator. Comes with 5-speed transmission, including two transport speeds, two cutting speeds and power reverse.

**Circle #261**

**BROWN MANUFACTURING**  
800/633-8909

[www.brownmfgcorp.com](http://www.brownmfgcorp.com)

The Trenchmaster line from Brown, Ozark, AL, will trench up to 7 in. deep and 2 in. wide with



the 100-lb. F-702; or a full foot deep and 3 in. wide with the 210-lb. F1201. The Bed Edger models, including the 8-hp F-780H and 9-hp F-990H, feature Honda engines, steerable wheels and interchangeable rotors for versatility with landscape or trenching jobs. Units edge 10 to 30 ft. per minute or trench 7 to 30 ft. per minute.

**Circle #262**

**CARSWELL DISTRIBUTING**  
800/929-1948

[www.carswelldist.com](http://www.carswelldist.com)

The Robin BE221 Precision Edger distributed by Carswell, Winston-Salem, NC, weighs just 12.6 lbs. It is powered by a 21.7 cc engine and draws fuel from a 17-oz. tank. Unit has solid state ignition, a loop handle and a 57-in. flex

shaft. The BE221 can be fitted with two-toothed blade accessory. Overall dimensions are 69 in. long, 13 in. wide and 12 high.

**Circle #263**

**JOHN DEERE**  
800/537-8233

[www.deere.com](http://www.deere.com)

Put the finishing touches on the job with the XT120SE stick edger from John Deere, Research Triangle Park, NC. Large, 9-in. blade, angled shaft and wide guide wheels make maneuvering along curbs, sidewalks and landscaped areas easy. This unit has a 1.2-hp Deere M-Series engine. It has a 54-in. flex shaft and a cutting depth of 2.5 in. Smaller cylinders with thinner fins help dissipate heat faster. Lined clutches and intake silencers mean quiet working.

**Circle #264**

**HUSQVARNA**  
800/GET-SAWS

[www.husqvarna.com](http://www.husqvarna.com)

Two new edgers from Husqvarna, Charlotte, NC, feature the E-tech engine which runs stronger and cleaner. The 322E has a 24.5 cc engine that develops 0.9 hp with a maximum no-load rpm of 11,000. The 325EX has a 22 cc engine that develops 1.2 hp at 11,000 rpm. Both have noise ranges of 96 to 102 dBA, 1.3 pint fuel capacity and weigh about 11.5 lbs. Sturdy guard above the blade prevents stoppage due to gravel and soil. Both have isolated support wheels and quick-cutting depth edges.

**Circle #265**

**LESCO, INC.**  
800/321-5325

The LHE-2500 Stick Edger from Lesco, Rocky River, OH, is a fast

unit designed for the professional turf care market. It has easy-



to-use wheel height adjustment for controlling edging

depth, rubber debris flap to minimize material kick-back, and large rubber gauge wheel for good tracking. The 8-in. blade is powered by a 25.6 cc engine with dual-ring pistons and anti-vibration mount.

**Circle #266**

**LITTLE WONDER**  
877/596-6337

[www.littlewonder.com](http://www.littlewonder.com)

The Xtra from Little Wonder, Southampton, PA, is a hybrid stick/walk-behind unit with the maneuverability of a stick edger and the power of a wheeled edger. It weighs just 16 lbs. Its



cross-blade system cuts through the thickest overgrown grass quickly and neatly. Unit has 6-position height adjustment and a 6-in. wheel that carries the machine's weight. It is powered by a 34cc 2-cycle gas engine.

**Circle #267**

**REDMAX**  
800/291-8251

[www.redmax.com](http://www.redmax.com)

New for this fall is the HEZ2500 stick edger from RedMax-Komatsu Zenoah, Norcross, GA. Powered by the Strato-Charged Carb Tier II certified 25-4 cc 2-cycle engine, it is a low-emission, lightweight, high-powered edger. It runs a third longer on a tank of fuel-mix than the standard 2-cycle engines. Shaft is solid steel. Guide wheel, with steel ball bearings, is adjustable.

**Circle #268**

**SALSCO, INC.**  
800/872-5726

[www.salsco.com](http://www.salsco.com)

Cut a cart path edge or create a new bed with the Model 09043 from Salsco, Cheshire, CT. Unit is powered by a 13-hp Honda engine with oil alert and hydrostatic forward/reverse. Options for cutting include the V-Groove that cuts to 9 in. for new beds or trenching, straight edge for narrow trench work, and combined Sod-Buster and Dish-type blades to break up sod. Optional brush mower deck is interchangeable with cutter deck by removing six bolts.

**Circle #269**

**SCAG POWER EQUIPMENT**  
920/387-1000

Lightweight and compact, this edger from Scag, Mayville, WI, features a 10-in. milled-edge blade for deeper edging and longer life. Unit is constructed of 1/4 in. x 1 1/4 in. bar stock for strength. It has no moveable parts near the drive head, no springs, and no sliding booms or tilt quadrant to wear out. Powered by a 3.5-hp Briggs engine with Dura-Bore cast



iron cylinder sleeve. Features specially designed handle bars and dual engagement levers.

**Circle #270**

**TANAKA**  
253/333-1200

[www.tanakapowerequipment.com](http://www.tanakapowerequipment.com)

Check out the TLE-550 walk-behind edger from Tanaka, Kent, WA. It features a 50 cc, 2.5-hp engine with transistorized elec-

tronic ignition and Walbro carburation. The 10-in. cutter blade runs to 3-in. maximum depth and is controlled from the handle to nine cutting depths. Also available are portable edgers, the TPE-2510 with 24 cc, 1.3-hp engine; and the TPE270PF with 26 cc, 1.4-hp engine. Both have 8-in. blades and a 3-in. cutting depth.

**Circle #271**

**TRU-CUT**  
323/258-4135

The Pro-Series power lawn edgers from Tru-Cut, Los Angeles, CA,



feature four Honda-powered models ranging from 2.5 hp to 4.0 hp. Units come with throttle lever and clutch depth controls at top of handle. Comfort hand grips make it easy to work all day. Blade is a 10-in. x 2-in. steel cutter. Strong protective belt and blade guards have an easily replaceable debris deflector. All models come with an all-steel, heavy-duty welded frame.

**Circle #272**

**WALKER MFG.**  
800/279-8537  
[www.walkermowers.com](http://www.walkermowers.com)

Edge at 3 to 4 mph with the Stevens Coultter Blade Edger at-



tachment for mowers made by Walker Manufacturing, Fort Collins, CO. The self-tracking coultter disk is mounted on a swing arm to smoothly and quickly trim grass along the concrete edge of sidewalks, curbs and cart paths. There are big labor savings, less mess, and no flying debris. Simple mechanical blade engagement, quick-mount bracket on the tractor, self-sharpening blade, and single hitch pin height adjustment make it easy to use.

**Circle #273**

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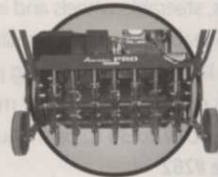
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