



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

Walking 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

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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)



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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.*