

October 2007

Super-sized blooms blossom with biobased fertilizer

Ames, a modest-sized city in central Iowa and home to one of the state's three universities, has a new distinction. It is a place where the gardeners are strong, the grass is good looking—and the community flower beds are definitely above average.

In fact, city employees report the blooms have never looked better since they began applying biobased fertilizer, a corn byproduct, for the first time in 2007 to Ames' 52 beautification gardens. Tended by a cadre of avid volunteer gardeners, these miniature plots dot street corners, decorate pocket parks and appear in every public green space throughout this town of 50,000 residents, half of whom are college students.

“Our flowers have looked the best they ever have,” said Ames Parks Superintendent Kevin Shawgo, who has been a city employee since 1984. “The plants are the biggest that we've ever seen them.”

Alan Thompson, park maintenance specialist, also described the results as spectacular. For example, *Showstar yellow melampodium*, which sports diminutive, daisy-like flowers, grew to be 32 to 42 inches tall outside the Park's administrative office. The average growth is 14 to 16 inches.

Thompson applied Four All Seasons (www.fourallseasons.net) fertilizer heavily on the soil surface before the volunteers planted the beds because he knew the product was safe and wouldn't hurt anything. He estimated that he spread about 5 to 10 pounds per 100 square feet.

Shawgo initially was apprehensive about making the switch to the new product, but he overcame his reluctance when he learned from the company salesperson that Nick Christians, a horticulture professor at Iowa State University in Ames, conducted three years of turf trials using the product with positive results.

(The randomized trial compared eight different organic fertilizers, primarily derived from corn byproducts, against a urea fertilizer. Grass grown with Four All Seasons fertilizer outperformed the urea-fed grass.)

“I'm always looking for things that help the environment and the Iowa economy,” Shawgo said. “I thought I'd give this a try.”

Four All Seasons is located in Holstein—a three-hour drive from the Iowa Capitol in Des Moines—where an ethanol plant provides the source for the fertilizer. (And no, the tiny northwest Iowa town isn't named after the ubiquitous black-and-white dairy cow, but the province in Germany where German-American residents' ancestors originated.)

Shawgo ended up purchasing 500 pounds of the fertilizer for the beautification program after the salesperson agreed to match the price of the city's existing floral fertilizer. The new product, billed as Bio-Source Natural Fertilizer, is available online (www.fourallseasons.net).

Prices range from \$9.95 for 5 pounds to \$17.95 for 40 pounds of the 9-1-1 formula product—considerably cheaper than a well-known gardening fertilizer that's also packaged in bright green plastic bags. Four All Seasons markets another 11-1-1 fertilizer for preventing weed growth in lawns.

But the parks superintendent elected to buy the fertilizer only for the flower beds, nixing it for the city-owned 9-hole golf course or the 35 city parks because Four All Seasons doesn't manufacture a "greens grade" with smaller fertilizer granules for golf courses and contains a trace amount of phosphorus.

That nutrient poses a threat to rivers and lakes because it fuels the proliferation of algae and other undesirable aquatic plants. The problem has grown so great that the state of Minnesota—the land of 10,000 lakes—passed a law in 2002 restricting the use of lawn fertilizers containing phosphorous, the only state in the nation to do so.

The phosphorus in Four All Seasons is extremely low at 1 percent. General Manager Delayne Johnson said Four All Seasons has no plans to extract the phosphorus, although it may be considered in the future. Nevertheless, golf courses have been a source of frustration for this start-up enterprise.

"We currently do not have plans to make a greens grade because golf courses have been slow to adapt to our product and the greens are their most sensitive area, hence slowest to change," wrote Johnson, who founded the fertilizer firm in 2004, in an e-mail response. "Home owners who have used it are amazed at how green their lawns stay."

Ames resident Tom Canfield sounded impressed with the impatiens he has planted and tended along with his wife, Judy, in a city garden across the street from his house for a handful of years.

"The impatiens are the fullest and tallest that they've ever been," he said in a phone call. However, Canfield was unaware that the fertilizer came from corn and, therefore, is considered biobased.

"How can I get it?" he asked.

The good news for flower aficionados is Four All Season's Johnson has verbal commitments from retail merchants to carry the line of fertilizers in their stores next spring. Only then can flower gardeners with a yearning for more than knee-high corn find solace in flowers that look like they're on steroids.

For more information, contact Alan Thompson at AlThompson@city.Ames.ia.us.

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This USDA BioPreferred program success story was prepared by Iowa State University Extension's Center for Industrial Research and Service (CIRAS), www.ciras.iastate.edu/.



Ames residents Tom and Judy Canfield planted and tended these taller-than-average impatiens across the street from their house. The city of Ames used a biobased fertilizer from corn to prepare the plot.



Showstar yellow melampodium grew over 3 feet tall in the community beautification garden near the city of Ames administrative building.