



WILDFLOWERS IN WAITING

BY JAMES SAVAGE
PHOTOGRAPHY BY DOUG DUCAS

Possibility speckled the palm of Mark Simon's hand. "That's all seed," he said, looking through the circular lens of a magnifying lamp to examine the flecks up close. They resemble freshly ground black pepper. "It's so fine, birds aren't going to find it."

"There's so much potential waiting to come out. It's ready to sprout."

Once bloomed, the *coreopsis tinctoria* seeds he held will yield a wildflower species commonly known as plains tickseed. It's one of two native Louisiana plants cultivated, processed and stored in the recently completed Wildflower Seed Bank at the University of Louisiana at Lafayette Experimental Farm near Cade, Louisiana. *Rudbeckia amplexicaulis*, or clasp leaf coneflower, is the other.

Simon is the 600-acre farm's operations manager. He has watched as construction over the past year doubled the size of its former dairy barn to create a 10,000-square-foot seed bank. When fully operational in 2018, the new facility will provide the Louisiana Department of Transportation and Development with wildflower seeds to plant along interstates and highways, and at state parks and welcome centers.

But the beautification initiative is about more than adding vibrant yellow flowers to the roadside. It's also about keeping some greenbacks in the state's coffers.

Ryan Duhon, LaDOTD's roadside development manager, said the department's work crews mow 937 miles of interstate multiple times a year; that number does not include state highways also under the department's purview.

Growing wildflowers that reseed themselves will reduce mowing times and frequency, fuel costs, and carbon emissions from tractors and other equipment.

"It's an attempt to save money. A secondary aspect of it is that people like flowers. It's nice to drive by and see flowers on the side of the road," said Duhon, who graduated from UL Lafayette in 2005 with a bachelor's degree in environmental and sustainable resources.

That's the same year the University partnered with Southeastern Louisiana University in Hammond, Louisiana, and the University of Louisiana at Monroe, and secured a \$1.7 million federal highway beautification grant administered by the LaDOTD. ULM and SLU split \$500,000 to collect, propagate and store seeds from the northern and southeastern parts of the state, respectively.

Mary Courville, former president of Louisiana Project Wildflower, was among flower enthusiasts who sought the grant. Flowers and plants were an ever-present aspect of her childhood in Lafayette. Her father, John Lynch, was a research biologist. Her mother, Zoe, was a horticulturalist and owned Orchid Gardens nursery in Lafayette for more than a half century. "I tell people we had chlorophyll in our veins," she said, with a laugh. "I was indoctrinated at an early age."

Courville realized that Louisiana wasn't taking advantage of its native wildflowers in the same way other states were. For example, Texas draws about 1 million tourists each year who travel there to view its 3,000 varieties of wildflowers. Planting the wildflowers along highways has added environmental benefits. They curtail



Mike Simon shows off seeds that have been harvested for planting along highways, state parks and welcome centers in Louisiana.



erosion and filter roadway pollutants from entering bayous, rivers and other water sources.

Courville; Dr. Linda Vincent, dean of UL Lafayette's now defunct College of Applied Life Sciences; Dr. Durga Poudel, a UL Lafayette environmental science professor; and other UL Lafayette researchers began to explore the idea of creating a centralized wildflower seed bank for Louisiana. Over three years, they toured similar facilities in Texas, Iowa, Mississippi and West Virginia.

"We did pretty extensive homework," Poudel observed.

A familiar refrain greeted them wherever they went: preserve and propagate native wildflower species. It was a process they had already started. Volunteers across the state had scoured railway beds, cemeteries, roadsides, and public and private lands to find specimens.

They identified eight varieties in the northern region of the state covered by ULM: lance leaf tickseed; purple, grey-head and rough coneflowers; blanket flower; prairie blazing star; beard tongue; and wild black-eyed Susan. The southeastern region covered by SLU, like UL Lafayette's southern region, had plains tickseed. The other two varieties in the southern region were clasp leaf coneflower and wild petunia.

"We learned that Louisiana was blessed with certain types of

seeds," Courville said. "Bringing seeds from other states doesn't work. If they are Louisiana grown, they're going to come back, come hell or high water, as they say."

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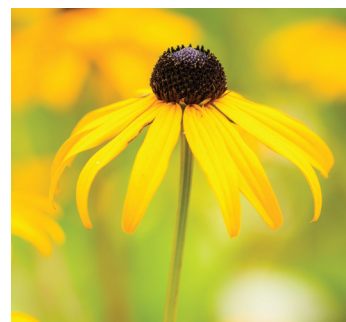
"The native Louisiana seed was much more productive. It was almost guaranteed to come back. Why spend money on seed that's not going to come back? That's when we realized we needed a seed bank."

The bulk of the LaDOTD grant, about \$940,000, went to add 5,000 square feet to the former dairy barn at UL Lafayette's Cade farm to create the centralized bank. Seed cultivation began shortly after the grant was awarded in 2005, even before the remaining \$350,000 was expended on specialized equipment for seed cultivation, processing and storage.

"We produced 2,000 pounds of seed under the crudest conditions you could imagine," Simon recalled while standing in the newly completed facility. "We dried the seeds out in the old dairy barn that wasn't dehumidified. We were harvesting with seed sweepers and string trimmers, then screening the seeds on top of a window screen" to separate seeds from chaff.

"We did that for 10 years."

Today, the results of those early days are stored in one of two walk-in coolers that can keep the seeds, encased within breathable cotton bags, viable for up to a decade. The coolers are the last home



for the specimens before they will be given to LaDOTD for planting along roadways.

Fall is ideal for planting wildflowers. When they are ready for cultivation in July, Simon runs the seed harvester over the 20 acres the farm has set aside for wildflower cultivation and picks up 150 pounds of seed per acre.

Here's where the math becomes amazing. A pound of the clasping leaf coneflower can contain up to 750,000 seeds. A pound of plains tickseed? About 1.2 million seeds.

Along with all those seeds, the harvester picks up stems, leaves and other plant material. Much of the bulk plant matter is removed by using a mechanical seed cleaner. When operational, it makes a noise that's a cross between a wheezing jalopy and two trashcan lids banging together. A blower spits lightweight, lower-quality seeds onto the ground. They'll be vacuumed up later and returned to the seed plots as mulch. The best

seeds drop into a 55-gallon blue plastic drum. This process can produce about 60 pounds of seed in an afternoon, Simon said.

Remnants of any stems and leaves are further filtered out using handheld sieves. That process occurs after the plant material is allowed to dry in two dehumidified rooms.

Drying the seed material completely is essential. Moist seeds might germinate during storage. The entire front-end process – from removing stems and leaves to drying and storage – eases planting, Simon said. A poorly processed seed might jam the specialized drills LaDOTD use to seed roadside tracts.

"If it gets stopped up in the drill on a 100-mile stretch of highway, you are in trouble. That seed has to fall down with precision the whole way.

"Once you plant the seeds, they are going to come back every year. They are going to reseed themselves. It's a management thing after that. So we get the DOTD personnel out here, train them, explain that to them," Simon continued.

The facility also includes two labs where researchers can study germination rates, moisture needs and seed quality to increase the seeds' viability once planted.

Duhon said LaDOTD has planted, so far, 12-15 miles of wildflowers along the state's highways. The seed bank ensures more miles are ahead. "It's still a very new thing to us, but beautification is going to be a bigger and bigger issue, along with reduced mowing."

To make sure crews don't have to replant the same ground twice, placement is important, both for safety and viability reasons.

Plains tickseed grows to a height of between 2-4 feet. Clasping leaf coneflower can reach 5 feet. Tickseed requires more moisture than coneflower, so crews have to take the plants' needs into account when seeding roadways.

"The area where we are going to allow these wildflowers to grow can't be a boulevard or median area that is elevated to where you are going to cause sight obstructions," Duhon said. "It's going to be more of a rural area where there are fields and farmland around. The traffic is faster. You're not going to get people who are going to be passing and expecting a high level of maintenance. You're going fast and it's far off the roadway where it doesn't look as tall. It's going to get tall."

Want to see how tall? Take a look at University Research Park.

This fall, UL Lafayette populated a 10-acre tract between CGI and the National Wetlands Research Center with plains tickseed and clasping leaf coneflower from the wildflower seed bank to create an urban prairiescape.

The goal is similar to that set by LaDOTD: to mow less.

UL Lafayette's Sustainability Strategic Plan calls for a 10 percent reduction in mowing across the University's multiple campuses over the next three years.

Poudel notes that wildflowers have lived up to the billing they received over a decade ago.

"Wildflowers are very functional. They are hardy. They are drought resistant. They are pretty. They are the real thing," he said.

"We have a long way to go, but now that the seed bank is here, this is not the end. It is just a beginning."