LU research aims to hook small-time fish farmers

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James Wetzel talks Wednesday about the trout farm program at Lincoln University's Carver Farm on Bald Hill Road. Wetzel serves as the aquaculture program coordinator and has been researching ways to make this an affordable investment for farmers who may want to supplement their income by selling farm-raised rainbow trout, seen at right. Photo by Julie Smith.

A Lincoln University professor is working to develop a fish-farming technique that will benefit small, part-time producers in Missouri — and some of the results have already been eaten.

James Wetzel, aquaculture program coordinator for LU's Cooperative Research and Extension, is looking for a way to use small springs that dot the landscape as water sources for user-friendly rainbow trout-farming systems.

"What we're currently doing here with rainbow trout is we're developing a lowcost, low-input system for raising food fish for someone who would be engaged in this activity (on the side), not as a primary source of income, but as a secondary source of income — assuming that they have a small spring or water source that they can use to provide water needs for the trout," Wetzel said.

Inside the lab off Bald Hill Road are rows of tanks filled with lots of water and lots of trout. Wetzel wants to raise 150 fish per tank at an ideal weight of 1.25 pounds per fish.

Researchers at the lab are working on better controlling the size variation of the fish so fewer of them are too big or too small, he said.

“A problem we get into is the fish don’t stop growing,” he said while standing in front of a tank of trout ready for market. “As long as you’re feeding them, they keep growing.”

The animals are fed by an automated system — a belt with fish feed piled on it that slowly turns over the course of the day and dumps the feed a couple pellets at a time into the water from above. Wetzel said it’s something a farmer can turn on in the morning and return to at the end of the day.

On one end of the lab, water cascades downward inside pipes to simulate a source like a spring; at the lab, the water source is a well. Each trout tank has a jet of water spraying into it.

“What that does is, first of all, gives the animals a current to fight against. They like a current. But also the current helps move the feces and uneaten feed — mostly feces — to the center of the tank, where there’s a drain in the middle, and it helps get the feces out quicker,” Wetzel said.

On the other end of the lab, the dirty water is filtered first by plastic beads that remove the solid waste, then a large tank that’s home to bacteria that remove dissolved waste. Clean water gushes up at the end of the system.

Wetzel aims to have 50 fish a week ready to sell from the lab’s setup. He said rainbow trout are ready for market when they’re 7 months old.

Fish have already been sold at LU’s farmers market — starting consistently last November.

Wetzel said the system offers hope for genuinely fresh, locally produced fish made by producers that people know.

He pointed to the south-central and southwestern parts of Missouri on a map, where “you have numerous small springs that are not big enough for typical raceway production but are large enough for what we’re doing here at our lab, where you would have a low-input, recirculating aquaculture system — hybridized with a lot of spring water coming in, a stronger source, more replacement (of water) than you’d typically use.”

Why is it important to help small farmers?

“First of all, the smaller farmers are our target audience. It’s who we’re supposed to be working with, being an 1890 land grant school,” Wetzel said.

“Secondly, that’s where the resource is, and also these folks need options other than the typical farming they’re doing today. This would be a way of developing the waters that we have in relative abundance to produce a product that could be sold towards urban (areas) of the state,” he

said, motioning to St. Louis, tracing the Interstate 70 corridor with his fingers then pointing to Kansas City and Springfield on the map.

He’s not aware of anyone else doing this kind of research.

“Most of the research efforts involving aquaculture are designed to target more upscale parties that have much more resources, where they can dump millions of dollars into an effort. We’re talking about operations that would be much less,” he said.