

PROGRESSIVE STRATEGIES

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Hog Lagoon Pump-Out Pays

Liquid swine waste in lagoon is worth \$35 per acre-inch.

BY JOHN LEIDNER

Pumping out an old animal-waste lagoon is a mixed blessing. Sure, there's nutrient value in the lagoon wastes. But it's a dirty job few people volunteer to do. Finding a way to distribute the liquid fertilizer can also be a challenge. Yet it must be done on many farms just to meet current water-quality regulations.

Parrish Akins, a hog farmer from Berrien County, Ga., faced such problems this past year. He solved his lagoon waste woes when he teamed up with the Seven Rivers Resource Conservation and Development Council, the USDA's Natural Resources Conservation Service and the Georgia Cooperative Extension Service.

The RC&D Council provided the equipment Akins needed to clean out his lagoon. Meanwhile, NRCS and Extension developed a nutrient-management plan.

Akins grows hogs on contract. "We contract to grow the pigs for so much per head in and out," he says. The waste from his hog house runs into a 100- x 250-foot, 14-foot-deep lagoon he built 20 years ago. It had never been pumped out prior to this past year.

The plan Akins followed called for pumping down the lagoon and removing layers of sludge that had accumulated over the years. The expensive part was removing the thick sludge. Now Akins can maintain the lagoon in good working order by removing only the liquid portion each year, using his own irrigation and pumping equipment. The sludge itself probably won't need to be pumped out but once every 10 years or so.

Removing the sludge takes equipment most farmers don't have. That's why the Seven Rivers RC&D Council bought the equipment and hired an operator to use it on farms in south Georgia.

"We got into this in 1998, just as the hog market went down," says Luther Black, Seven Rivers RC&D coordinator. He points out that the equipment is available and that the council has lowered its rates for using the equipment to encourage its use. The setup fee is \$450 plus a \$45 per hour for pumping (see table).

"The cost is high," says Akins, "but so is the nutrient value. I am getting cost-share money from [Environmental Quality Incentive Program]. I pay 25% of the total cost."

Georgia Extension agronomist Glen Harris estimates that the nutrients in swine lagoon waste are worth \$35 per acre-inch.

The nutrient-management plan shows the nutrient value of the waste material, and it matches these values



Lagoon wastewater reaches crop fields through a cable-tow irrigation system (above). Parrish Akins (left) obtained valuable crop nutrients when he pumped out his 20-year-old hog lagoon.

PHOTOS: JOHN LEIDNER

COSTS, COST-SHARING ASSISTANCE AND RETURNS FOR LAGOON PUMP-OUT

Agitator, pump and irrigation equipment setup fee	\$450.00
Hourly pumping fees, based on charge of \$45 per hour for 80 hours	\$3,600.00
Total pumping costs	\$4,050.00
Approximate application costs per acre, based on 48-acre application area	\$82.00
Estimated EQIP cost-sharing assistance to Akins	\$3,037.50
Cost to Akins for lagoon pump-out	\$1,012.50
Nutrient value of lagoon waste, based on \$35-per-acre-inch nutrient value	\$2,100.00
Net returns to Akins for taking part in lagoon pump-out project	\$1,087.50

SOURCE: USDA-NATURAL RESOURCES CONSERVATION SERVICE

with the nutrient needs of the application area. On the Akins farm, the nutrients were applied to a field of sorghum-sudangrass grown for forage.

Samples of the lagoon waste must be taken and then analyzed to get a true picture of the nutrient value. Harris says the ideal is to agitate the lagoon and then take the samples for analysis.

"The problem is that when farmers agitate, they're ready to pump out," he says. "You often don't have the

time to get the samples sent, analyzed and returned."

Waste analysis is important because it shows the pH; the N, P and K content; and any heavy metals, such as copper and zinc.

On the Akins farm, the 30-foot-long agitator with inlet pipe was placed close to the bottom of the lagoon. NRCS district conservationist Hal Simpson says, "You want to get as much of the solids out as possible and that may take adding more water to the lagoon." Removing

the solids is important for restoring the holding capacity of the lagoon.

Richard Clark of Toombs County, Ga., operates the equipment for the RC&D Council. He brings the pumps, agitator, irrigation pipe and traveling gun system. He says his biggest problem is clogging.

"A piece of turtle shell can get in and clog the system at the gun," he says. "It takes a few minutes to clear it out." That's a part of the job few are willing to do. ■

More Grass, Less Stress

Research shows that fall-weaning calves on pasture produces healthier animals.

It's tough being a calf at weaning. First you lose your mama, then they move you to a muddy feedlot. Talk about stressful.

The truth is fall weaning is extremely stressful, and stress can weaken calves' health just as the winter weather moves in. To lessen stress, researchers at the University of Missouri suggest leaving calves on pasture at fall weaning. Fifteen years of study indicates that calves weaned this way have a better shot at good health than those weaned in a feedlot.

"We wean strictly on grass,"

says Dennis Jacobs, supervisor at the Forage Systems Research Center in Linn County, Mo. "It's more like their natural environment, more like they've gotten used to with their mothers. It doesn't stress them as much, so they don't get sick."

Allen Powell of Linneus, Mo., can attest to that. For years he fall-weaned calves in feedlots. But four years ago, he began segregating calves in pasture paddocks.

"We went from having to doctor 25% of our calves to having to treat only one or two [out of 400 to 500 per

year]," he says. "It was like daylight and dark."

For the first four or five days of weaning, Powell keeps calves in a relatively tight space—100 head on 2 to 5 acres. He uses a three-strand electric wire fence to teach the calves their boundaries. Later, he opens up the space and uses one- or two-strand wire.

"They bawl that first three or four days," Powell reports. "But they keep eating."

Powell says another benefit of pasture weaning is that it cuts feed costs. "Grass is our least cost item," he says.



Grazing on stockpiled grass is easier on calves than living in a feedlot, according to University of Missouri livestock specialists. PHOTO: JIM PATRICO

So he keeps calves on pasture as long as possible.

Calves weaned on pasture at FSRC typically gain 1.2 to 1.5 pounds per day during a two- to three-week weaning period, Jacobs says. "That's less than they'd gain in a lot. But the expense is a lot less. There's a better return."

If you do want to supplement forage with a little feed, KC Olson, a University of Missouri animal scientist, suggests 2 to 4 pounds per day of dried distillers' grain, corn gluten feed, soybean hulls or whole-shelled corn. Such supplements

will familiarize calves with the solid, nonforage feeds they will get later in a feedlot.

High energy can be important if winter weather is severe. But just being on grass can lower calves' energy intake requirements. "Cattle with muddy, wet hides [which they can get in a feedlot] have a maintenance energy requirement that is 35% higher than calves with dry, mud-free coats," Olson says.

By FORREST ROSE, UNIVERSITY OF MISSOURI, AND JIM PATRICO