

AIR IS FORCED UP THROUGH MANURE TO DRY IT OUT, ELIMINATING LIQUID MANURE

## Elevated Hog Building Keeps Manure Dry

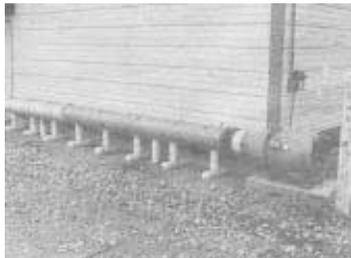
"It results in dry, reduced-odor manure that's a lot easier to handle than conventional liquid hog manure out of a pit. We've also found that our animals perform exceptionally well in this building," says Tom Menke, Greenville, Ohio, president of EnviroLogic Co., whose patented system for raising hogs like chickens is getting a lot of attention across the country.

Menke recently built a 45-ft. wide, 200-ft. long building with enough capacity for about 1,000 hogs. What makes the building unique is that it's two stories tall and doesn't have a below-ground manure pit. Instead, it has a ground-level manure processing area with a slatted floor 8 ft. above where the animals are kept.

The concrete manure floor has more than 3,200 aeration holes in it. Aeration fans and plenums are located at both ends of the building. Eight PVC tubes, 4 in. in dia. and spaced about 2 1/2 ft. apart, are embedded in the concrete manure floor and extend from each plenum the length of the building. Each tube has a series of holes on top. Air is forced up through holes in the concrete floor and then up through an 18-in. deep layer of absorbent material, such as wood shavings, which is under the manure. The material absorbs the urine and holds the feces during the drying process.

To remove manure, Menke opens doors on the side of the building and uses a skidsteer loader to scoop out the manure.

"It works much like the drying floor of a grain bin. Drying the manure creates a much better product that's more nutrient dense,



Photos courtesy Ohio Country Journal

**Fans on either end of building force air through the manure to dry it.**

easier to handle, and has less odor," says Menke. "The problem with hog manure has always been the excess water that's in it. With poultry manure, you only have to run air over the top of the manure to dry it. However, hog manure contains a lot of liquid so the air has to be forced up through the manure while the free liquids are being held in the absorbent material.

"One big advantage is that by drying the liquid in the manure, the smell is greatly reduced. Another advantage is that the dry manure is more concentrated and therefore requires a lower application rate per acre than conventional liquid manure. Pound for pound, dry hog manure is as nutrient-dense as poultry manure which makes it a valuable crop nutrient. Also, it can be handled like dry poultry manure and sold as a commodity.

"We've found that hogs really do well on this system. We put our first group of 45-lb. feeder pigs into the building last July. They



**To remove manure, Menke opens a door on the sides of the building and uses a skid steer loader to scoop out manure.**



**Ground level manure processing area also helps reduce odor at the Menkes' operation.**

were finished in an average of 113 days at a weight of 260 lbs., with a 1.84 lb. daily gain and a 2.5 lb. feed conversion ratio."

Menke says the elevated hog building design costs about 12 percent more than a comparable conventional pit building. "It appears that the hog performance advantages, as well as the lower operational costs of handling the manure as a dry product rather than a liquid,

more than compensate for the additional building costs."

He's working with a local building company which hopes to begin selling the new type of building soon.

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## "Bark-Scraping Sprayer" Kills Brush For Good

"For years we used rotary cutters to control brush on cattle pastures but it would just grow back thicker each time we cut it," says Tom Williams, Aurora, Mo., who came up with a totally new way to clear away unwanted brush and small trees up to 8 ft. tall.

Rather than cut off brush at ground level, the new "Roll-On Applicator" scrapes bark off the trunks, and then coats the "wounds" with an herbicide that kills them. The 10-ft. wide machine consists of a spring-loaded bark scraper up front followed by an 18-in. dia. drum that wipes on herbicide.

"Cutting brush is just a temporary solution because it all grows back. I wanted to find a way to permanently kill it. But it's hard to kill brush with herbicides just by spraying it on. This machine opens up the fleshy part of the wood where herbicides can be very effective," says Williams.

A tractor-powered pto pump and a series of low pressure nozzles spray herbicide onto two strips of absorbent material which then wipes the chemical onto the absorbent surface of the roller. The roller is hydraulically adjustable up to 12 in. above ground. Electric controls in the cab allow the operator to apply herbicide to the left or right hand side of the roller, or to the full width. Williams notes that if you're traveling on a side slope, you can just apply herbicide to the uphill end

of the roller to avoid runoff on the bottom end. The roller drum is driven at ground speed by chains and sprockets.

"We've used the Roller Applicator on our 900-acre ranch with very good results and plan to put the machine on the market next year. We're working on devices which control the flow of herbicide to the roller," says Williams.

He uses the herbicide Remedy mixed with either water or diesel fuel. "On thick sumac 4 to 5 ft. tall, I have to go over it again a second time a year later to get nearly a 100 percent kill because the wheels of the tractor knock some of it down flat and because some seed germinates the next year. On hickory, oak and persimmon, I spot spray the leaves after going over them with the applicator. The cab is equipped with a pair of 18-in. long spray guns - one on each side of the operator. I modified the orifices on the guns so I can precisely control the spray pattern.

"Rolling on the herbicide prevents damage to the grass around the brush. Once the trees and brush die, we can go in and mow it down."

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**"Roll-On Applicator" consists of a 10-ft. wide bark scraper followed by an 18-in. dia. herbicide applicator drum.**



**Bark is scraped off trunks to expose fleshy wood before chemical is applied.**