

Owner's Report On "Making Compost"

Are you generally satisfied with your compost windrow turner? Is composting cost-effective compared with other methods of manure disposal you've used? What types of operations do you think are best-suited to composting?

These are a few of the questions we asked farmers and commercial composters about their operations.

Pulled by a tractor with a "creeper" gear, windrow turners are used regularly to sustain aerobic decomposition in compost piles. Among other things, decomposition raises temperature in windrows - ideally from 120 to 150 degrees F - high enough to kill weed seeds and pathogens. That's one of the biggest advantages of using compost instead of raw manure for fertilizer, many of those surveyed for this report said.

Here's how our survey shaped up.

Byron Green, Morresville, Ind.: Byron has been composting sawmill waste, yard waste and livestock manure for nearly 30 years. "It's a great way to add value to an unusable product," he notes.

He uses a **Sandberger** 10-ft. windrow turner equipped with flotation tires and a hydraulic cylinder on the back wheels that raises and lowers the drum. He also runs a standard **Scat Engineering** 8-ft. engine-driven model.

"We've been quite satisfied with both of them," Green says. "I like the Sandberger because it can handle in one pass the 10-ft. wide by 4-ft. high windrows we make with a front-end loader. You have to make two passes with the Scat, but it handles windrows up to 14-ft. wide and 6 ft. high. However, it does have a tendency to flatten windrows."

Before he began using commercial windrow turners, he used a front-end loader to turn windrows. "It took two or three days to turn them, compared with six or seven hours with a compost turner," he notes.

"You won't get rich composting livestock manure, but the government may force farmers into it," he says. "It can take 16 to 18



"You won't get rich composting manure but the government may force farmers into it."



weeks and 20 to 22 turns to complete the process. That makes the compost cost at least \$10 per ton. On the other hand, 1 ton of composted manure is equivalent in nutrient value to 4 tons of raw manure but is a lot easier to spread."

Will Kilpatrick, Brevard, N.C.: Will researched windrow turners for six months before purchasing a 1997 **Aeromaster** PT-120 10-ft. machine for his farm. The turner is equipped with a watering system that includes an 1,800-gal. pull-behind tank for injecting water into the windrow as it's turned. There's also an inoculant tank to add various chemicals.

"We're well pleased with the turner," he says. "It allows the operator to see behind him to see the water as it's being injected into the windrow."

Between March and November last year, Kilpatrick's operation generated 495 tons of compost from 5 by 6-ft. round hay bales mixed with sawdust and cow manure. The bales were broken up with a Bobcat skid steer loader equipped with a grapple hook and placed into 8 by 5-ft. windrows on a 1-acre

plat. The farm uses all the compost itself on 120 acres of organically grown herbs.

"It's cost-effective for us," Kilpatrick says. "When we started using compost, we had to purchase it all. We've found we can make it a lot cheaper.

"Composting is suitable for almost any farm operation, in my opinion, as long as there's access to raw material within close proximity of the farm."

Arnott K. Duncan, Goodyear, Ariz.: Duncan Farms produces 8,000 to 9,000 tons of compost a year out of six to eight semi loads a day of horse manure and straw that Arnott gets from a nearby race track. He applies all the compost to his 2,000 acres of specialty crops, which include 200 to 300 acres of organic lettuce and carrots.

"We just bought a 1998 12-ft. turner from **HCL Machine Works** and we're generally well pleased with it. What I like best is that it leaves a nice, peaked pile. However, I want to double the machine's water capacity by expanding the manifold and installing a bigger pump so I can inject 260 gpm's of water into the pile instead of the 130 gpm's the machine is designed to handle. I also wish the machine was a foot or so wider.

"I used a **Wildcat Mfg.** 10-ft. turner for two years before buying the HCL. It was a good machine but it simply wasn't big enough for my needs. It also left piles somewhat flattened."

Whether or not composting is cost-effective depends on what it's being used for, he says: "If I didn't have organic crops, I wouldn't be composting to the extent I am."

Still, he believes composting is the coming thing.

"It's conceivable that everybody will be doing a certain amount of composting in the future."

Dennis Felt, Centralia, Wash.: "We've been pushing it to the max with no problems in the short time we've had it," says Dennis, who just bought a 1998 12 by 5-ft. machine from **Frontier Manufacturing Company**. It's the first pull-type turner this manufacturer of self-propelled units has ever built.

Pulled with a 105 hp tractor, it helps Felt produce a "nice, consistent compost product" from yard waste and construction site waste. Last year, he composted 7,000 tons of incoming material composted in an 80 by 170-ft. converted dairy barn.

The new compost turner is a big improvement over the tub grinder Felt used before. Screens on that machine plugged too easily, especially when handling wet grass, he says.

"Composting pays more bills than dairying ever did," says Felt, who once milked 200 cows.

Junior Ruiz, Kersey, Colo.: As compost manager for National Hog Farms Inc., a

16,000-sow farrow-to-finish operation, Junior and his associates use their 1993 16-ft. **EarthSaver** turner from **Fuel Harvesters Equipment** from 7 a.m. to 5 p.m., 365 days a year. It's equipped with tandem wheels on the side where the hydraulic motor turns the drum and a swinging tongue for tighter turns.

"The drum does an excellent job of turning and aerating windrows," says Junior. "We had a problem with the hydraulic system at first. The hydraulic oil got too hot, but the company provided us with a 100-gal. tank, rather than the standard 50-gal. tank, to solve the problem. We're currently looking at a bigger hydraulic motor because we've had to replace the original motor every nine months or so."

National Hog Farms makes 14 by 6-ft. windrows of composted hog manure mixed with straw and sorghum on a leveled off 20-acre site. They end up with 100,000 tons of compost a year. Some of it is used on crop land and the rest is sold to area golf courses and landscaping businesses.

"The main reason we're composting is to get away from spreading raw manure on fields. It's better for the environment and keeps the odor down," Junior says. "Composting is definitely more expensive than spreading raw manure, but it's better for

the soil. Composting creates a readily available, stable nitrogen."

John Vollmer, Bunn, N.C.: "It's well-built and is doing the job better than I imagined any machine could," says John who's using a 1997 TA-250 **Sandberger** 8-ft. wide machine to turn 5 by 4-ft high windrows composted in a yard.

It's equipped with an optional "push" axle driven off tractor hydraulics to push the machine and tractor along the windrow when the tractor is in neutral. The option allows Vollmer to get by with a 40 to 50 hp tractor.

Last year, Vollmer started composting chicken manure from a nearby farm with wheat straw from his farm. He expects to produce 2,500 tons of compost a year.

He plans to use the compost on his own land to build up soils, with an eye on becoming certified organic.

"We're on sandy soils and we needed to change what was happening to our soil structure," says Vollmer, who raises about 100 acres of strawberries, vegetables and small grains. "We want to increase the organic matter content and water-holding capacity."

Vollmer says that even if you don't have livestock, you can probably get manure from other farmers.

Paul Shassetz, Sheridan, Wyo.: Paul is

Hirzel Farms' compost turner is based on the Sandberger pull-type machine.

They Built Their Own Compost Turner

"We built it seven years ago and have been working to improve it ever since," says Lou Kozma about the pull-type compost turner he and John Hirzel designed and built.

Hirzel Farms, Luckey, Ohio, has been composting cannery food waste and manure from nearby farms for 12 years. Early on, they decided they needed a way to efficiently turn piles but couldn't justify the expense of a big self-propelled unit, Kozma says.

"John saw a commercial pull-type unit at a show and decided we could build one of our own," he says.

The men built a 15-ft. A-frame for the machine out of heavy-duty 4 by 8-in. tubing. Then they built a 15-in. dia., 10-ft. wide drum out of heavy-gauge 1/2-in. thick steel pipe and fitted it with 10-in. long teeth arranged in rows in a helical pattern.

The windrow turner rides on a steerable axle off an old potato harvester.

It's fitted with a right angle gearbox to transfer power from the tractor pto to the drum. It takes a 110 to 140 hp tractor to power it.

"The hardest part of the project was the gearbox," Kozma notes. "Because of the right angle design, there's a lot of stress on the gearbox and we've replaced it several times. They aren't cheap, either, at \$600 apiece from a local pto parts supplier. We're still tinkering with that part of the design."

"We produce 3,000 to 4,000 tons of compost a year for use on 700 acres of organic grain and vegetable crops. We use the machine every day, May through November, to turn the 10-ft. windrows that we make in a 2-acre clay-bottom pad. It's worked out fairly well for us."

Out-of-pocket expense was about \$10,000.

Contact: FARM SHOW Followup, Hirzel Farms, 20790 Bradner Rd., Luckey, Ohio 43443 (ph 419 837-2710).