



To avoid spreading raw manure on fields, Laurelbrook Farms started composting. After two years they put up these hoop-type buildings.



One week's worth of manure is enough for one windrow in the 100 by 250-ft. composting buildings.

Hoop Buildings House Dairy Farm's Manure

Laurelbrook Farm put up four new Farmtek hoop buildings this year to house composted manure from their 800-cow dairy herd.

Living in a highly populated area near East Canaan, Conn., the farm faces limitations on where manure can be spread.

So owner Bob Jacquier and family started composting manure and selling it locally.

"We composted outside for two years to see if the market was really there, before we committed the resources to put buildings up," says Bob Jacquier, who farms with his brother and father.

They sold compost to a couple of local nurseries, and without any advertising word spread. They soon had more demand than they could supply.

They moved the operation inside in early 2009 for a couple of reasons.

"We were concerned about runoff and wanted to do it in an environmentally friendly way," Jacquier explains. "For quality compost, being able to control the moisture in a pile makes a huge difference. If it

gets too wet or dry it stops composting. Inside we can add moisture exactly when we need it."

Working with grants and support from four state and federal agencies, including the Connecticut Department of Environmental Protection, they set up four Farmtek ClearSpan Fabric structures (ph 800 327-6835; www.farmtek.com) on 4-in. asphalt pads. The galvanized steel truss buildings should last 25 years.

Manure is scraped every day from free-stall barns and collected in a small storage pit, where liquid and solids are separated with a mechanical separator. Liquid goes on the fields, and solids are hauled to the buildings.

One week's worth of manure is enough for one windrow in the two 100 by 250-ft. composting buildings. Each building holds five windrows. Old hay, horse barn sawdust, woodchips and other material is mixed into the manure pile.

The manure composts in the row for about

four weeks and is regularly turned with a Backhus windrow turner that straddles the windrow. The material breaks down when it's between 130 and 160 degrees, so temperature is carefully monitored.

"We used to bucket-turn the manure with a loader when we were outside. The windrow turner is a big time saver," Jacquier says.

After four weeks, two rows are joined together. After eight weeks, the compost is hauled to an 80 by 200-ft. finishing shed for at least four weeks. Over the 3-month period the volume decreases by about half.

From there the material is screened and shipped out in bulk, or kept in storage during the off-season, from November to April. The Jacquiers plan to bag some of the compost next year.

"A big advantage is that it's stored indoors, so we always have dry product to sell," Jacquier says.

The Jacquiers have already developed different mixes - a garden mix, made of com-

post, subsoil and sand; and compost mulch, for example. By using different screens, they plan to add new products in the future.

The biggest challenge of composting may be the timing. Crops need to be planted the same time customers need compost for their gardens.

"We have two people working almost full time on composting at this point," Jacquier says. "We may need more in the future."

Besides labor, the farm's investment included the buildings (\$7.50 to \$9/ft.), asphalt, the windrow turner and screener.

Overall, adding composting to a dairy operation is a good fit. There is little to no odor, which is good for neighbor relations. The Jacquiers already had much of the equipment needed, including trucks and live-bottom trailers. And it's a way to diversify and bring in extra income.

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Moveable Greenhouse Goes Solar

Four Season's moveable high tunnel greenhouse was featured in a recent FARM SHOW (Vol. 33, No. 3). They've now been updated with solar panels so they can be automated off-grid.

"The solar unit is really working well," says George DeVault, Seed Savers Exchange, Decorah, Iowa. "We used a moveable high tunnel this fall for the first time drying sunflower heads. The solar units powered thermal controlled side panels and roof peak vents as needed," says DeVault.

The two 120-watt solar panels provide more than enough power, says Mike Bollinger, Four Season Tools. "One panel would probably be enough, but this was our first unit, and we wanted to be sure there would be sufficient power even if conditions were cloudy for 10 to 12 days," he explains.

He notes that while the side panels could be dropped manually, the roof vent would be more difficult to operate without power.

The \$3,500 upgrade (over the normal \$6,000 price of a 30 by 38-ft. moveable high tunnel) includes both side panels, a lightning arrester, inverter box and battery storage. It also includes a standard 120 plug-in as backup.

Bollinger says the solar panel power unit is only one of several innovations being added. "We're working on a track system to use instead of our current skids or wheels on pipe," says Bollinger. "The tracks are 10 in. wide and made out of 1/8-in. material. An owner will be able to lay down track and anchor it to the ground. The high tunnel will then anchor to the track." With Four

Season's current setup, the moveable high tunnel is anchored directly to the ground.

"The track will make the high tunnels even easier to move," says Bollinger. "Each high tunnel will come with two sets of track, one for use in the initial position and a second set to be laid ahead for the first move. Two people will be able to easily move a 30 by 48-ft. high tunnel by hand with the track in place."

Bollinger expects the track units to be priced close to the current pipe and skid systems.

Bollinger reports continued high interest in the moveable greenhouses, especially among home gardeners. They have sold a lot of 16 by 24-ft. units. Interest is also building in the Coop Hoop units like Jeff and Alethea Bahnck developed (Vol. 33, No. 5).

Final specifications are being worked out, but will be open to modification. Bollinger reports one customer wants to use a unit for chickens through the fall and winter and switch to transplants in early spring. "We have tons of ideas and are just waiting for customers who want to try them," he says.

Schools are also showing a lot of interest with four projects underway. "We are working with a school in Mass. where the students are growing food for use in the cafeteria," says Bollinger.

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Solar panels on Four Season's moveable high tunnel greenhouse power thermal-controlled side panels and roof peak vents.

"Payloader Tire" Mineral Feeder

Big industrial tires make good low-cost livestock mineral feeders, says James Pierce, LaPorte, Minn., who uses payloader tires and railroad ties to feed salt and minerals to livestock.

"Cattle can't knock them around and they won't rust out. They're practically indestructible," says Pierce. "I came up with the idea because my cattle were tipping over my commercial feeders, which were rusting. I've used these tire feeders for years and the cattle have never tipped one over and they can't rust."

The feeder consists of two big, junked, payloader tires and three railroad ties. Pierce cuts one tie in half and lag bolts it across the other two ties, then wedges the tires tightly between them.

"I already had the payloader tires and happened to have a cement slab to set the



"Cattle can't tip them over and they won't rust," says James Pierce, who uses big payloader tires and railroad ties to feed salt and minerals to livestock.

ties on. Without it eventually the dirt around the feeder would wear away," says Pierce. "I got the tires free from a local dealer. They're happy to get rid of old tires like these."

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