Waller used pallets and chicken wire to make a composter in just one day.

Building An Inexpensive Composter

By Carolyn White

John Waller of Cedaredge, Colo., wasn't happy with a barrel-type tumbling composter he bought. So, he decided to build his own.

He collected unwanted pallets from a local grocery store and warehouse, all free. "Make sure the wood hasn't been treated," he says. "You don't want any chemicals seeping into your soil. The usable pallets will have a red or black stamp on one of the boards to indicate they are chemical free."

After selecting the best pallets, he chose a sunny spot in one corner of his backyard. Three pallets were used for the back of his composter with one on either side. Everything was screwed together with 3-in. galvanized wood screws. The result was a frame 12 ft. long, 4 ft. wide, and 4 ft. high.

Within that frame, he used two additional pallets as dividers, making three total bins for compost rotation and storage. He lined each of the bins with galvanized chicken wire to keep compost from spilling out any cracks.

As a final step, Waller cut additional boards with his skil saw to fit across the front to contain the compost. He made them removable so he could turn the compost more easily at any height. The entire process took less than a day, with only the costs for a box of 3-in. wood screws and a roll of chicken wire.

The first bin was layered with yard clippings, leaves, cow manure from a local rancher, and non-meat kitchen scraps. "Think browns and greens when creating your compost," Waller says. "Browns, like leaves, are needed for carbons. Greens like vegetable peelings are great sources of nitrogen."

To aid in the composting process, three times a week during the growing season, Waller turns things, pitchforking the material back and forth from the first bin to the center bin. When finished, he also waters the material down to help activate the microbes, which must be kept moist.

A composting thermometer, periodically inserted into the mix, keeps the heat monitored to 140 degrees, although "anything up to 120 degrees is good. Don't let the temperature get much above that, or the microbes will die off."

The third bin receives the finished product - rich, dark, and moist dirt that is tilled into the garden and the flower beds and mixed with potting soil for house plants. "I always have enough to share with the neighbors, too," Waller says. "My wife's indoor lemon tree produced fourteen lemons last fall because of compost. She'd barely gotten anything to grow on it before. It's like gold, good for just about anything."

Hitch Turns ATV Into Mini Tractor

After Norman Sieting built a 3-pt. hitch for his ATV, he started using it as a mini-tractor. He plows, digs potatoes, blades his driveway, and more.

"I have 12 different implements I use with it," says Sieting. "It's also really handy for towing trailers or equipment."

The entire 3-pt. is designed to slide into a receiver hitch on the ATV. At the other end of the hitch, a second receiver hitch is bolted to a drawbar mounted to the lift arms of the receiver hitch.

The arms and the top link are raised and lowered by an electric winch mounted at the top of the front leg of the 3-pt. frame. The leg is a 3-ft. length of steel tubing. The lower 20 in. is 2 by 2-in. steel tubing before transitioning to 2 by 3 in. for the upper 14 in.

"Initially, the leg was only 2 ft. long with the winch mounted ahead of it with the lift cable running over a pulley on the leg," says Sieting. "I extended the leg by 12 in. and mounted the winch on it for better lift."

At the bottom front of the leg, a 10-in. long 2-in. square stub provides the connection to the ATV's receiver hitch. A 14-in. long 1-in. sq. steel tube is center welded to the back side of the leg with a slightly longer piece of 3/4-in. steel bar stock inside it. The lower link arms pin to either end of the bar stock.

A second length of 3/4-in. bar stock mounted inside a 12-in. length of 1/4-in. thick steel pipe serves as anchor points for stabilizer arms. The pipe is center welded to the main leg about 12 in. from the bottom. The 10-in. long stabilizer arms are held parallel to the lift arms with turnbuckles.

Sieting created an angle iron, top link connection point. First, he welded a short length of 2-in. receiver hitch to a steel plate, which he bolted to the drawbar. He then welded ends of two 20-in. lengths of angle iron to the sides of the receiver hitch. Holes drilled in the upper end of the angle iron make it possible to pin a top link turnbuckle and a small clevis in place.

The other end of the top link turnbuckle is pinned between two square steel plates welded to the front leg of the 3-pt. The winch cable is clamped to the clevis.

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Sieting discovered a problem when using his ATV to dig potatoes. The digger wanted to sink into the ground. To control depth, he welded a chain hook to the upright leg, just above the stabilizer arms mount. A link welded to the receiver hitch on the drawbar provides an anchor for a short length of chain links.

"I can control the maximum depth by adjusting the number of links between the hook and the drawbar," says Sieting.

While the 3-pt. hitch worked fine in every application, Sieting was concerned about the ATV's rear suspension getting overloaded. He figured out a simple fix.

"There are plates with three holes in them where the suspension attaches to the axles, one on each side," he says. "When the suspension comes under load, the plates move outward. I attached a U-bolt to each plate and connected them with a turnbuckle so they can't move apart. I also reinforced the ATV's receiver hitch by adding a brace from it to the frame."

Contact: FARM SHOW Followup, Norman Sieting, 6112 Walker Rd. NW, Rapid City, Mich. 49676 (ph 231-564-1031; normansieting@gmail.com).

16 ft. conveyor can move firewood about 10 ft. high to drop into trailers or trucks.

Wooden Conveyor Moves Firewood

Paul Zawalick loads firewood the easy way with his homemade wooden conveyor. With the hopper set beneath his cordwood saw, pieces of firewood travel up the 16 ft. length to a height of about 10 ft. to drop into trailers or truck beds parked beneath. A hitch at the ground level end makes it easy to move the wheeled conveyor as needed.

"The conveyor length was limited to 16 ft. because those were the longest 2 by 8-in., treated boards available," says Zawalick. "I used two of them together for the floor of the conveyor and 3/4-in. pressure-treated deck boards for the 45-degree angled sides."

Zawalick used standard roller chain for the conveyor apron chains with angle iron cross bars at 2 1/2-ft. intervals.

"You can get apron chain with brackets for the cross bars, but it's more expensive, so I just welded the angle iron to the chains," he says. "I used sprockets from an old-style hay loader. The ones at the top of the conveyor are chain driven by a motor at the bottom."

When he first built the conveyor, Zawalick powered it with a 7.6-hp. Gravely lawn tractor with bolt jacks on either side to line it up with the chain drive.

"When I got rid of the Gravely, I bought a small gas engine, just 2 to 3 hp., from Harbor Freight and a 90-degree gearbox," says Zawalick. "The gearbox is belt driven from the motor with a sprocket on it for the drive chain."

The drive chain runs half the length of the conveyor from the gearbox to a sprocket that acts as an idler. Then it continues from there to the drive sprockets at the end of the conveyor.

"I like to keep the belt between the engine and the gearbox a little loose, so if the conveyor jams up, it'll slip," says Zawalik.

At the hopper end of the conveyor, the shaft for the elevator apron sprockets is held in place by pillow block bearings. The bearings are bolted to slots in lengths of channel iron. The channel iron is welded to steel plates bolted to the 2 by 8-in. floor of the conveyor.

"When I need to add tension to the apron chain, I loosen the bolts and use a pry bar to slide the shaft away from the conveyor before retightening the bolts," says Zawalick. "I've found I don't need much tension on the chains."

He mounted swivel wheels from a cyclone rake to the conveyor hopper to make it easy to slip it into place. He uses a concrete block at the hopper end to counter the weight of the firewood at the top.

The conveyor body is supported at mid-length, by a framework fabricated with 1 1/2-in. square tubing. The tubing starts at the axle with its wheelbarrow wheels and extends at least a foot above the conveyor as well as forward to the lower end of the conveyor. Truss cables run on both sides of the conveyor from the top to the bottom with the top of the tubing as truss supports.

"The cable helps support the length of the conveyor when it's loaded with firewood," explains Zawalick. "Also, at the midpoint, I have a crescent-shaped piece of wood mounted beneath the returning apron chain. It helps keep the apron chain in place."

Contact: FARM SHOW Followup, Paul Zawalick, 545 Sylvester Rd., Florence, Mass. 01062 (ph 413-584-4162; J0236@comcast.net).