

## Owatonna Swather Makes Great Compost Turner

Hydrostatic drive swathers work great as compost turners because you can spread the wheels out without worrying about drivelines. "If I was doing it again, I would put orbit motors into steering wheels too to make it four wheel drive so it could go through anything," says Bill Kleinschmit about the self-propelled compost turner he built out of an Owatonna 260 swather.

Making the unit largely with parts from discarded equipment and scrap cost him less than \$5,000 out of pocket. That included buying the used swather for \$3,000. After stripping away the header, he raised and stretched the swather. He needed it to straddle an 8-ft. wide, 4-ft. high windrow of compost with room to spare.

"I made new rear legs out of 4 by 4-in. steel tubing and attached them to the swivel wheels and frame," says Kleinschmit. "I had the local metal shop fabricate leg extensions for the front wheels to give the frame an extra 2 ft. height and width clearance."

On Owatonna swathers, the legs are attached to pipes that slip into a sleeve attached to the frame of the swather. This provides

added rigidity and maintains leg alignment. To get an extra two feet between the wheels, Kleinschmit added 1-ft. extensions to each leg pipe.

"The compost roller itself was made from sheet metal rolled and seamed into 20-in. diameter drums that I welded together," explains Kleinschmit. "I cut steel plate picked up at a junkyard to fit for ends and welded it in place."

The steel plate provided a stable surface to mount a drive shaft and sprocket to one end and a support shaft to the other. Bearings for the shafts were mounted to lift arms made from 4-in. steel tubing. The lift arms themselves were connected by a 5-in. pipe, which in turn was fastened to the swather frame by pillow blocks. Header lift cylinders from an old combine were mounted to the frame and the arms to provide vertical lift for the compost drum.

Pieces of sheet metal were welded to the drum like flighting on an auger to throw compost toward the center of the windrow.

To drive the roller, Kleinschmit mounted a gearbox off an old Oliver windrower on the



Bill Kleinschmit built this self-propelled compost turner out of an Owatonna 260 swather.

motor and used it to redirect power to the drive sprocket mounted on the compost turner drum. A #60 chain drives the sprockets. If rebuilding the turner today, he would upgrade the drive chain to a #80 chain.

Kleinschmit built a roof shield over the turner to protect the driver from flying compost and to keep it in the windrow.

"At 300 rpm's, the compost would be thrown 10 to 15 ft. in the air without the shield," says Kleinschmit. "In some cases, I

have to go back in and turn it a second time to try and cool it down. I've seen it heat up 30 degrees within minutes of being turned the first time."

He would be interested in building similar units for others if they would provide the self-propelled swather.

Contact: FARM SHOW Followup, Bill Kleinschmit, 56048 Highway 12, Hartington, Neb. 68739 (ph 402 357-2217).

## Mini-Hoop Houses Fit Raised Garden Beds

PVC pipes and plastic can turn any raised bed into a mini-greenhouse, says Steve Upson at the Noble Foundation, an Oklahoma-based agricultural research foundation.

"It's a good way to get the benefits of a tunnel or hoop house without the expense," says Upson, who estimates a 40-in. by 30-ft. raised bed can be protected for less than \$90 with a mini tunnel.

Basic components include 1-in. and smaller PVC pipe (schedule 40), 1-in. nylon rope, 6-mil. greenhouse poly plastic, a few wood screws and a couple of pieces of rebar.

Upson uses 1-in. dia. PVC pipe to make holders for the hoops which are made from the smaller diameter PVC pipe. He screws the 1-in. pieces of pipe to the sides of the bed.

Once the hoop holders are in place, the smaller diameter PVC pipe can be cut and inserted into the holders to form hoops. Upson notes that a 20-ft. piece can be cut into

three 80-in. pieces resulting in a tunnel 2 1/2 ft. high at the center of a 40-in. wide bed.

Plastic sheeting needs to be wide enough to hang over the pvc pipe and the garden bed sides and long enough to be twisted together at the ends. An 80-in. hoop will require at least a 134-in. wide sheet of poly film. Upson uses short lengths of rebar bent in a U and pounded into the ground at either end of the bed to serve as anchors for rope ties to the end hoops and for securing the ends of the poly film.

"We recommend using 6-mil. greenhouse grade poly," says Upson. "It will reduce light by about 15 percent, but it will last longer. You can get it custom cut by suppliers like FarmTek." Upson secures the plastic with 16-ft. lengths of nylon rope between each hoop as hold-down straps.

The rope needs to be tight enough to hold the plastic in place in a windstorm, yet be able to be loosened so it can be raised out of



Photo courtesy Noble Foundation

With some PVC pipe and plastic, you can turn any raised bed into a mini-greenhouse, says Steve Upson at the Noble Foundation, an ag research foundation.

the way when gardening.

"In the fall you could put taller hoops in place with wider plastic to protect tall plants," notes Upson. "To protect against frost, just add a trouble light for warmth and a fan to keep air moving."

Detailed plans for the mini-hoop houses as well as plans for both corrugated tin and

car tire raised beds are available from the Noble Foundation at 580 224-6500.

Contact: FARM SHOW Followup, Steve Upson, The Samuel Roberts Noble Foundation, P.O. Box 2180, Ardmore, Okla. 73402 (ph 580-223 5810; sdupson@noble.org; www.noble.org).

## Self-Propelled Tree Chopper

Cedar trees with trunks up to 4-in. dia. are no match for Larry Estes and his self-propelled tree chopper. He has chewed his way through as many as 4,000 shoulder-high trees in less than four hours, clearing 480 acres of pasture.

"It'll throw chunks of a tree 30 to 40 ft.," says Estes. "I just drive right up and shove the tree over and start cutting. If it's too big to shove over, it's too big to cut with this rig."

Estes got the idea from a friend who owns a welding shop. Ronny Fiorelli's dad had built something similar 25 years earlier. With Fiorelli's help, Estes put his together from spare parts and elbow grease.

An Owatonna 265 windrower provides the power. After taking off the header, Estes changed the drive shaft to a pto shaft. A 7700 New Holland corn chopper provided the cutting mechanism and a gearbox off a 140 IH stalk cutter transfers power from the swather pto to the belt-driven cutter box.

"I picked the Owatonna because it has hydrostat motors right on the wheels instead of chain drives," says Estes. "It can turn without tearing up the ground, and it feels com-

fortable because it's long and wide."

Estes brought the parts into Fiorelli's shop, and in two afternoons, they put it together. They built a frame for the cutter box out of 2 by 2-in. steel tubing. Skid plates underneath keep it from digging too deep into the ground. The knife head is angled toward the ground so that the knives cut down about 5 in. below the skid plates.

"It throws a lot of dirt this way, but if you don't get the bottom branches of the cedar tree, it really takes off growing again," explains Estes. "When I finish, the tree is in pieces from 3 ft. long to 2 in. All the branches and bark will be cleaned off at least one side of the trunk. They rot fast and won't blow."

To mount the chopper head frame to the swather, Estes rescued a 3-pt. hitch from an anhydrous applicator. He just cut the tongue off and bolted it into place underneath the swather with 12 bolts. For a top link, Estes hooked chains from the cutter box frame to the swather frame.

"The 3-pt. lets me lower the cutter box over a tree, while the chains let it float over rough ground," he explains.



An Owatonna 265 windrower provides the power for Larry Estes's self-propelled tree chopper. It can chew up trees with trunks up to 4 in. in diameter.

The gearbox mounts over the chopper head, bolted to a steel plate that can be loosened to tightened the drive belt.

The one modification that Estes made after he started using the chopper was to mount a combine cab on the swather. "I ran it half a

day with dirt and chips flying before I went to work and put the cab on," he recalls.

Contact: FARM SHOW Followup, Larry Estes, HC-69 Box 110, Anselmo, Neb. 68813 (ph 308 872-5592; Estesfam.cornhusker.net).