Paul Bernier uses his 6 1/2-ft. wide compost turner on windrows that are 12 ft. wide. "It's a smaller machine so I can use my 70 hp, 2-WD wheel tractor to pull it," he says.

He built the 3-pt. mounted compost turner using a 20,000-lb. truck differential.

"Made It Myself" Truck Axle Composter

By Bill Gergen, Senior Editor

Sonoma grape farmer Paul Bernier of Geyserville, Calif., built a 3-pt. mounted compost turner using a 20,000-lb. truck differential. He uses the compost turner on windrows that are 12 ft. wide, 120 ft. long, and spaced 8 ft. apart.

"It's a cost-effective way of turning grape compost, or 'pomace', which I use to improve the organic matter in the soil around my vineyard," says Bernier.

"The machine is only 6 1/2 ft. wide so there's plenty of room to maneuver between windrows. It lets us pack a lot of windrows into a relatively tight space. The windrows are made up of both stems and pomace from a local vineyard press. We're composting the material into a mixture that breaks down easily and is also easier to apply with a spreader."

Bernier says he has been making compost for his operation for more than 35 years, in the past turning it with a loader tractor. "The loader did an adequate job, but it was slow and took up a lot of space. I borrowed a friend's commercial compost turner one year, but I didn't like the machine's 7,000-lb. weight or the 100 hp tractor required to operate it.

"I thought if I only turned half the width of the windrow at a time, I might be able to use my 70 hp, 2-WD wheel tractor to pull a much smaller machine. And I'd be saving money. Commercial compost turners sell for about $25,000 or more, whereas I spent only about $1,000. It took me about a month to build."

He copied the specs of the commercial turner to build his own machine. It's equipped with a 16-in. dia. drum fitted with 8-in. paddles, which rotate against the direction of travel at about 200 rpm's.

"I thought a truck differential would do the job of a right angle drive, and found a 20,000-lb. broken axle in a friend's scrap bin," says Bernier. "The axle was geared a little low at 5.28:1, but my tractor has a 2-speed pto which results in about 200 rpm's at the end of the axle. I had to mount the housing upside down to get the correct rotation. I cut off the unneeded axle tube, welded the spider gears to the cage to eliminate differential action, and carefully aligned everything so that it runs true."

The agitator drum is made from 3/16-in. thick by a length of 16-in. dia. well casing, which Bernier welded to a 10-hole bud wheel center. "I removed the brakes and backing plate from the axle tube, but kept the wheel hub which the agitator drum is fastened to with lug nuts. The agitator is 6 1/2 ft. long so it'll easily turn a 12-ft. windrow. I go down one side of the windrow, then turn around and come back down the other side.

"I've used the machine for 5 years and turned more than 10,000 yards of compost with no problems. Truck rear ends are built tough."

Compost turner is small enough to maneuver between windrows spaced 8 ft. apart.

Bernier used 1/2-in. thick flat stock to build the tines and bolted them onto brackets that are welded to the drum. A home-built angled steel blade runs alongside the tractor to lift up compost material just before it's turned. A length of truck tire tread bolted to a metal plate serves as a deflector at one end of the drum, to keep material from being thrown back at the driver.

"Anyone with high school shop skills and access to a junkyard could build a compost turner like mine," notes Bernier.

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Bus Bale Wagon Turns On A Dime

Jerry Ackermann's bale wagon makes hay movement easy and keeps heavy semis off the field. That is important when harvesting 350 to 400 acres of alfalfa a year. The wagon, converted from an old school bus, went through 2 modifications the first year, and has worked great for the past 14 years.

"I looked at a commercial bale wagon, but they wanted more than $16,000 and that was 15 years ago," says Ackermann. "I saw a bale wagon a guy had converted from a school bus and decided to try it."

He stripped the school bus down to frame and axles before adding a bed made with 3 by 12-in. channel irons. Ackermann picked them up at scrap price after a manufacture miss-stamped them and was unable to use them. Initially he attached a tongue to the front axle for towing.

"We used it that way for the first cutting, but the turning radius was way to wide," recalls Ackermann. "I took it to a local machine shop, and they suggested removing the front axle and using a pedestal pivot instead. They built it out of heavy steel and thick wall pipe. We cut the axle stubs from the front axle of the bus and welded them to the pedestal."

When Ackermann returned to the field for second cutting, the turning radius benefit was immediate. He was able to turn at a 90-degree angle or better. However, when turning with a bale on one front corner or the other, he noticed a tendency for the wagon to twist.

"I had an old IH Cyclo planter sitting in the grove, so we chopped off the lift assist wheels and welded them to the front corners of the wagon," recalls Ackermann. "They stabilize the wagon on tight turns and spread the load out even more."

With the stabilizers in place and the pedestal front end, Ackermann can carry twenty-four 1,000-lb. bales at a time out of the field. He stacks them 3 wide and 2 high on the 38-ft. long bed.

"We could stack them even higher, but as it is, they can leave tracks in the field, which I don't like to see," says Ackermann. "Fully loaded, the bales can rub on the tires so I welded stops in so the springs can only depress so far. Going slow in the field, that's not a problem. It's really not built to travel at road speeds."

Ackermann uses the bale wagon to carry bales to semis parked at the edge of the field. He equipped his bidirectional loader tractor with an Agri-Speed hitch so he can unhook without leaving the tractor, load the wagon, and unload again at the semis.

Bale wagon was converted from an old school bus and is fitted with a pedestal pivot on front (above). Wagon can carry 24 1,000-lb. bales at a time out of the field.

"The 3-pt. is programmed to stop at the right level for hooking up, but with the bidirectional, it's hard to see to line up the hitch," says Ackermann. "We added a camera so we can see clearly. We also hooked the cable for releasing the hitch to the top link by a spring. The spring takes the shock off the cable when the 3-pt. is raised to release the hitch."

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