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PORTABLE UNIT SQUEEZES BALES DOWN TO HALF THEIR ORIGINAL SIZE

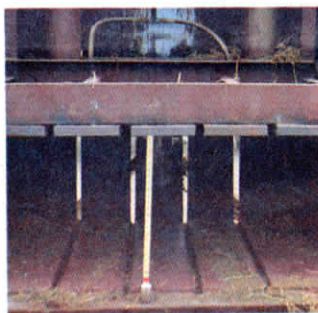
“First-Of-Its-Kind” Round Bale Compactor

First-of-its-kind portable round bale compactor turns round bales into dense, 32-in. long rectangular packages to help reduce costs when transporting hay over long distances, says inventor Dave Rea, Bernard, Iowa.

The new two-wheeled compactor is powered by a pto-driven hydraulic pump. A pair of 26-in. hydraulic cylinders apply 60 tons of pressure to a pair of plungers mounted on top of the unit. The plungers are attached to a 2-in. thick steel plate supported by a heavy-duty rectangular steel frame. Rea uses a skid steer loader to load bales into the 54-in. wide, 44-in. deep, and 66-in. high bale chamber, then locks the door shut and flips a lever to activate the plungers. Once the bale has been compacted he manually reties it.

“It reduces bales to almost half their original size and lets me haul almost twice as much hay in my semi trailer,” says Rea, who built the compactor 1 1/2 years ago for his custom hay hauling business in Wisconsin and Iowa. “I use it only on high quality bales because they’re the most economical to transport. One benefit is that a chain saw can be used to cut the compacted bales into sections that can be rolled onto a two-wheeled cart and fed to cows in the barn. Another big advantage is that far fewer leaves are lost during handling compared to a full-size bale. The only limitation to my compactor is that bales have to be 48 in. in dia. or less in order to fit inside the chamber.”

Rea loads the bale into the chamber, then shuts the door and latches it to a pair of 8-in. hydraulic cylinders. Flipping a lever mounted on the side of the compactor causes the cylinders to pull the door shut. Flipping a second lever forces the plungers down. Each side of the frame mounts on a small rubber wheel that rides inside a track to help



Compacted bale is retied by threading twine through slots in walls of bale chamber. Takes about 1 1/2 min. to tie bale.

keep the plungers level when the bale has an uneven density. Rea can compact about 10 bales per hour. “It takes about two minutes to compact the bale and 1 1/2 minutes to tie it. An automatic knottier could be developed to speed up the tying process. I plan to double my capacity by building another compactor and operating them both at the same time.”

The top, front, and bottom sides of the bale chamber have four matching 1 1/2-in. sq. slots that are used to thread twine through to retie bales. Four balls of twine are stored on a shelf in front of the compactor.

A 1/4-in. wide opening between the door and frame allows Rea to see how far the plungers have advanced as they press down on the bale. “The compacted bale is easy to remove because the chamber is 2 in. wider at the opening than at the back of the bale chamber,” says Rea, who built the bale compactor for about \$10,000.

For more information, contact: FARM SHOW Followup, Dave Rea, 18614 Rt. 151, Bernard, Iowa 52032 (ph 319 879-3412).



A drive chain wraps around tread of top tire in third stack from the left. It rotates that stack, which in turn drives all the other stacks.

ROTATING TIRES CRUSH GRASSHOPPERS “Hopper Whopper” Keeps CRP Acres Grasshopper-Free

A Minnesota farmer who didn’t like using insecticides to control grasshoppers built what he calls a “hopper whopper” using old car tires to gather in the insects and crush them.

“It’s a simple, economical way to kill grasshoppers and is a chemical-free alternative to spraying,” says Vern Erickson, Fertile, Minn. “As far as I know there’s nothing else like it on the market. I built it because I have almost 300 acres in CRP that are infested with grasshoppers. I’m not allowed to cut the grass, but I can run my ‘hopper whopper’ through it. I run the rig just a few inches above the ground, using it early in the season when grasshoppers are young and don’t have wings so they can’t fly out of the way.”

Erickson built his “hopper whopper” by suspending six rows of tires from a 14-ft. long, 4 by 4-in. toolbar that attaches to the front-end loader on his Deere 630 tractor. A pair of brackets welded to the top of the bar fasten with pins to the loader arms.

There are five tires per row. The wheel rims of all five tires in each stack are welded together, and the top rim on each row is bolted to an old car wheel hub. The hub’s spindle is welded to the steel bar, allowing each stack of tires to spin freely. An orbit motor mounted on the steel bar and connected to a gearbox (salvaged from the straw spreader off a Deere 65 combine) drives a roller chain that’s wrapped around the top tire on the third stack in from one end. This “drive” tire causes all of the other tires to rotate, with each pair of tires turning inward. Chains hanging from a rod out in front of the tires drag through the grass and cause grasshoppers to jump up so they can be caught and crushed by the rotating tires.

Erickson welded all of the rims together, then cut an 8-in. dia. hole in the center of each wheel rim (except for the top wheel in

each row which is bolted to the wheel hub). The holes make room for an extension socket wrench that Erickson uses to remove the tire stacks when necessary.

All of the tires are tubeless and non-inflated except for the drive tire which is inflated. Erickson put a tube in it to make sure it would hold up. “The smoother the tires, the better because they can apply more pressure against each other as they rotate,” says Erickson. All of the tires are on 14-in. rims. In order to get maximum contact between the two stacks of tires to kill the grasshoppers, Erickson mounted 15-in. tires on all rims except for the bottom one which has a 14-in. tire. “The 15-in. tires ride loosely on the 14-in. rims - the 14-in. tire on the bottom keeps the 15-in. tires above it from working their way down,” says Erickson, who used a winch, cable, and a pair of steel bars to pull the two stacks of tires tight against each other while mounting them on the toolbar. The non-inflated 15-in. tires are pulled together enough that the paired-up 14-in. tires on the bottom of the stacks contact each other.

Erickson notes that his tractor has only one hydraulic valve. He uses that to operate the orbit motor so he can’t adjust the height of the tires once the orbit motor is hooked up. “I have to set the tires at the height I want them, then block up the loader arms. A tractor equipped with more hydraulic valves would let me adjust height of the tires while they’re turning. Also, I can’t vary the tires’ speed of rotation. I plan to install a car rear end differential and transmission between the orbit motor and gearbox so that I can vary the tires’ speed of rotation according to grass conditions.”

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