

## Replacement Knives Improve Deere Straw Choppers

If you're not satisfied with the job done by the straw chopper on your Deere combine, contact Robert Rottinghaus.

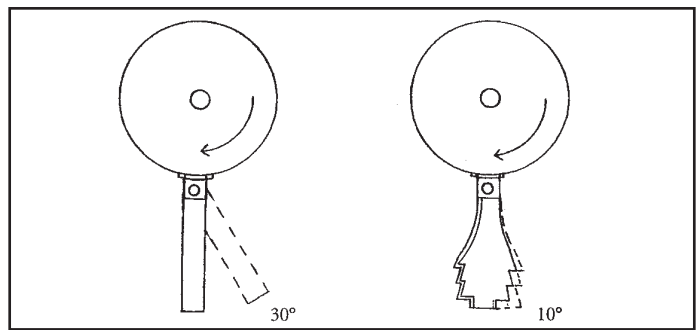
Rottinghaus, owner of Clever Tech, Inc., Jesup, Iowa, says the rotor knives on Deere straw choppers aren't heavy enough to handle heavy straw or wet, green bean stalks. "Many modern soybean varieties produce dry beans on a green stalk, which can cause problems for combines and straw choppers. Since the original knives in the Deere chopper pivot back about 30 degrees, when they hit this tough material they let it pass over the stationary knives uncut," he says.

To solve the problem, he developed a heavier knife that will fit most Deere straw choppers. Made of 4140 steel that's been la-

ser cut and heat-treated, the Clever Tech knife has four sharp rake teeth on it, to make a serrated edge. It's designed to pivot only 10 degrees, so it forces material through the stationary knives until everything is cut.

"We've tested the knives for two years on 3,000 acres and they'll handle anything that can go through the combine," Rottinghaus says. "When crop residue is cut shorter, it gets spread more evenly. And that allows soil to warm more uniformly in the spring. There's no need to disk it in, and there's less plugging of planters, cultivators and tillage tools."

Rottinghaus' combine straw chopper knives sell for around \$8.78 to \$9.78 each (plus shipping and handling), depending on the model. He sells them in balanced sets of



Under a load, original equipment Deere straw chopper knives (left) pivot back 30 degrees, which Rottinghaus says gives them less cutting ability. His Clever Tech heavy duty knives move just 10 degrees, doing a better job of forcing bean stems down through the stationary knives until they are cut.

six. Different combine models require from 3 to 6 sets of knives. Clever Tech also sells stationary knives for Case-IH straw choppers.

Contact: FARM SHOW Followup, Clever Tech, 4121 S. Canfield Road, Jesup, Iowa 50648 (ph 319 827-1311; fax 319 827-2425).

## Drag Destroys Prickly Pear Cactus

Like a lot of rural people in certain areas of the country, Gary Johnson has been fighting prickly pear cactus for years.

Prickly pear is a problem on rangeland and pasture across the Southwest, north across the Plains, and up the West Coast. It's even been found on marginal soils in the Midwest.

"We tried mowing it, shredding it, and killing it with chemicals, but nothing seemed to work," he says.

Johnson, who is a professional engineer, devised a heavy drag that breaks and bruises the cactus, destroying its roots. "The broken cactus dries up so the roots starve and die," he says. "I've used it to completely clear 15 acres. You could walk barefoot across it now, but two years ago, the cactus was so thick a snake couldn't crawl through it."

Johnson recently filed for a patent on his device and is making them for sale. "It's pretty simple. It has no moving parts. But it took awhile before I figured out the right

weight and size to make the drag work," he says.

It consists of a 2 by 8-ft. piece of 1/4-in. plate steel and an 8-ft. length of railroad rail. There's an 8-ft. long piece of 1 by 6-in. flat iron on top of it for ballast, along with some pieces of 1/4-in. steel stock and re-bar. A tow chain slips over a ball or pintle hook.

"The secret to the design is getting the weight positioned to crush the cactus while not digging into the soil or flipping over," he says. "It doesn't take much to pull it. You just pull the drag over the cactus at a walking speed.

"It doesn't always work with just one pass. In fact, you may have to hit it several times, depending on how tall the cactus is," he says. "Even though it crushes cactus, the drag doesn't harm grasses and other native plants."

While Johnson has just been using his crusher on his own land, he sold one to a friend who is now operating a custom cactus



Gary Johnson built this heavy drag that breaks and bruises cactus, destroying its roots. crushing business. "I'm making crushers to sell, but with each one I sell, the buyer gets a set of plans so he can build his own," Johnson says. He also sells the plans alone. Price for a crusher is \$500. Plans are available.

Johnson is currently working on an additional cactus-crushing device that will work

Contact: FARM SHOW Followup, Expert Technical Services, Gary Johnson, 5886 New Windsor Parkway, McGregor, Texas 76657 (ph 254 940-9629; E-mail: gwj5886@aol.com; Website: <http://home.swbell.net/coem>).

## "Silage Power" Keeps Waterers From Freezing

Heat from fermenting silage keeps Conrad Hoffman's livestock waterers from freezing.

The Madison, S. Dak., farmer says his father discovered more than 50 years ago that rotting horse manure stacked over water lines and around water troughs kept water and floats from freezing up.

"I used to use electric heaters in the tanks to keep them from freezing, but there was always something going wrong with them," he says.

So several years ago, he "cleaned up" his father's idea by building water troughs with boxes over and around them that he could pack full of silage. Only about 1 ft. of the trough extends out from under the silage-filled box. "You only need enough of the trough sticking out to allow the cattle to drink," he says. He hangs a baffle down to the water surface so cold air can't blow in under the silage box.

Aburied pipe to the trough supplies water, and a regular float valve under the box keeps the trough full.

"The silage stays warm as it ferments and the waterer never freezes, no matter how cold it gets," he says.

Hoffman has used both pine and cedar to build the water troughs and silage boxes. "I like cedar better for the troughs," he says. "But both are fine as long as the boards swell when they're wet and hold water. Lately, I've been lining the insides with rubberized roofing material. It keeps water from seeping out and helps insulate, too.

"The boxes can be built of anything.

What's most important is that you keep air out of the silage box. If air can get in, the silage may freeze up."

Hoffman had three silage-warmed waterers in use last winter. Cattle can drink from either end of two of them, which are about 14 ft. long, 1 ft. wide, and 8 in. deep. The single water trough is just 8 ft. long.

The silage boxes for all three waterers are about 12 ft. long and roughly 4 ft. wide by 4 ft. tall and are open at the top. He says the silage only has to be 2 to 3 ft. deep to keep the waterers from freezing.

"Usually, we use older, moldy silage. After we fill them, we cover the silage with plastic and old carpet to keep it from blowing out," he continues. "At least once in the winter, we top off the boxes with fresh silage to keep it heating. If you can't get enough moldy silage, or if it stops fermenting, we've found we can start it up again by sprinkling a little ground feed into the silage box.

"You do have to keep the rats controlled. They'll make tunnels in the silage that can let air move through and then it'll all freeze up," he says.

He says the silage slowly deteriorates and by spring, it's mostly rotten. Then they clean out the boxes, but they continue to use the waterers all year. "Over the years, this idea has saved us a lot of money in electricity, not to mention time and trouble in repairing heaters," he says.

Contact: FARM SHOW Followup, Conrad Hoffman, 22928 456th Ave., Madison, S. Dak. 57042 (ph 605 256-3132).



Water troughs have boxes over and around them that Hoffman packs full of silage. Only about 1 ft. of trough extends out from under silage-filled box. Silage stays warm as it ferments so waterer never freezes.

