

## Crop Residue Worth More Than Grain?

If work funded by the U.S. Dept. of Energy pays off, farmers may find that corn stalks and other crop residue are worth more than the grain itself because Iowa State University researchers are working to find a way to gather crop residue for less than \$30 per ton.

"We have used five systems, all single pass, to collect the grain and crop residue at the same time," says Graeme Quick, consulting agricultural engineer and former project leader at ISU.

One of the most eye-catching ideas is a Deere 9750 with a giant 8-ft. diameter reel on a 2-tier cornhead that collects ears in one stream and stalks in another.

Other residue-gathering machines include a Deere 6-row corn head on an IH 1460 combine pulling a modified Hesston stackhand and a Deere 6-row bean head that harvests the whole corn plant at up to 6 mph, with a chopper and wagon pulling behind to collect the plant material.

"This year, we are concentrating on a Claas head on a New Holland bi-directional tractor. It will collect all the material including the grain off the cob as stover," says Stuart Birrell, who's also working on the research effort. "We are also looking at putting a chopper on the rear end of a Deere combine."

ISU is working with a Cargill/Dow joint venture that is making biodegradable plastics.

"Cargill/Dow is looking for stalks, but not



One method tried was a Case-IH combine pulling a modified Hesston stackhand that gathers crop residue.

leaves," says Birrell. "Other researchers want different components. The end use will dictate the type of material needed."

A major issue is transport and storage. To be successful, a system must get the density of material high enough that it can be transported economically. While collection is the focus of the current project, other researchers at ISU are evaluating breeding corn for lignin and cellulose metabolism and how genetic material will affect downstream processes.

"A big question we are looking at is the affect of residue removal on long term productivity of the soil," says Birrell. "If we do this, are we mining our soil?"

Contact: FARM SHOW Followup, Stuart Birrell, Iowa State University, Agricultural and Biosystems Engineering Dept., 200 Davidson Hall, Ames, Iowa 50011 (ph 515 294-1320)



Iowa State University researchers are testing ways to gather crop residue cheap. This Deere 9750 has a giant experimental 8-ft. dia. reel on a 2-tier corn head that collects ears in one stream and stalks in another.



Here a "stover caddy" is pulled behind a Deere 9750 combine. It blows material off to the side into a tractor-pulled wagon.

## "No Hydraulics" Bale Mover Keeps Weight Over Wheels

If you use big round bales but don't want to have to use a tractor or truck to haul them, you'll be interested in this new pull-type bale mover that can be pulled by a pickup, ATV, or even a garden tractor. It can be used to both load and unload bales.

Invented by Ivan Davis, Jefferson, Wis., the two-wheeled rig can be used to transport round bales as well as 6 1/2-ft. long big square bales. It has a ball hitch on front and three bale spears on back. The spears mount on a pivoting mechanism that's raised and lowered by an 8-ton hydraulic jack.

To load a bale you back up and spear it, then use the jack to pivot the bale up off the ground. To unload you release the jack so the bale drops, then pull ahead to slide the bale off.

"The wheels always stay centered around the bale, which eliminates any weight problems with the tongue and allows it to be pulled easily," says Davis. "With other pull-type bale movers, the lifting unit is at the back so the bale has to be pivoted up at a 45 degree angle in order to put weight over the wheels. That transfers a lot of weight onto the tongue and also onto the back end of the vehicle. On my machine, you need to lift the bale only about two inches in order to put the center of the bale's weight over the wheels. As a result, you're transferring only a few pounds onto

the tongue.

"It works great for anyone who's tired of paying high prices to get bales delivered to their farm. You can use the family car to go get a bale. Then when it's time to feed your animals you can use your 4-wheeler or garden tractor to move it.

"I came up with the idea when a friend of mine needed to haul 80 round bales located four miles from his house. He had to use his tractor to retrieve one bale at a time each day in order to feed his horses. After I built the machine he was able to haul 20 bales a day. It wasn't long before I had people showing up at my house asking if they could rent my bale mover for a day."

The unit can be equipped with fenders and lights. Attachments can be fabricated to turn the machine into a pallet lift or cherry picker.

Davis says he's not interested in manufacturing the bale mover himself but welcomes inquiries from anyone who's interested in manufacturing the unit locally. He says he spent about \$333 on materials and estimates the selling price of a manufactured unit at about \$1,000. He's also willing to sell plans.

Contact: FARM SHOW Followup, Ivan Davis, 415 S. Fischer Ave., Jefferson, Wis. 53549 (ph 920 674-5373; email: OUTPUTg@ticon.net).



To load a bale you back up and spear bale, then use jack to pivot bale up off the ground.



Spears mount on a pivoting mechanism that's raised and lowered by jack.



Two-wheeled rig has a ball hitch on front and three bale spears on back.

### How To Reach Us

To submit a "Made It Myself" Story Idea, New Product, Shop Tip, "Best or Worst Buy", or other information, send a note along with photos, drawings and literature, if available. We'll get back to you later if we need more details. Send to: Editor, FARM SHOW, P.O. Box 1029, Lakeville, Minn. 55044 (ph 1-800-834-9665; fax 952 469-5575); E-mail: Editor@farmshow.com. You can also submit information at our Website: [Http://](http://www.farmshow.com)

[www.farmshow.com](http://www.farmshow.com).

To change your address, renew your subscription, take out a new subscription, order videos or books, or for other information regarding your subscription, contact: Circulation Department, FARM SHOW, P.O. Box 1029, Lakeville, Minn. 55044 (ph 1-800-834-9665; fax 952 469-5575; email: [Circulation@farmshow.com](mailto:Circulation@farmshow.com)).