

## “Plug-Proof” Swather Keeps Crop Moving

After he got tired of plugging up his combine on lumpy, uneven windrows, Cyril Colonel, Cresston, British Columbia, decided to “plug-proof” the 14-ft. header on his Versatile 4400 swather by mounting a commercially-built vertical sickle on the right snout of the header and by mounting an auger off an old Deere combine on the header, just above the draper.

Separate hydraulic motors are used to operate the auger and sickle.

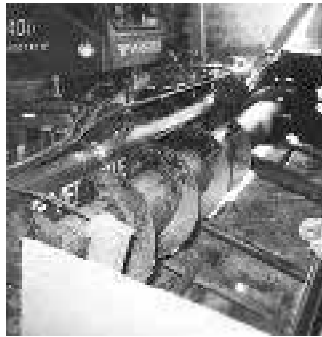
“I can’t believe how well the swather works now,” says Colonel. “The sickle cuts away canola stems that would otherwise bunch up on the snout, and the auger keeps the crop from bunching up by grabbing the material and feeding it into the opening. I think the same idea would work with any bulky crop.”

Colonel says a lodged canola crop is one of the toughest crops to swath. “In the past, no matter which way the plants were leaning, they’d bunch up and eventually plug up the end of the header’s sickle. The crop also tended to bunch up at the back of the header. I tried making the swather opening wider but it didn’t solve the problem. Having more even windrows lets me increase my combine speed and virtually eliminates plugging.”

The 18-in. dia., 15-ft. auger was salvaged from an old Deere 55 self-propelled combine and is chain-driven by a hydraulic motor that’s bolted onto the left side of the header. He cut 1 ft. off the auger and used the auger’s original mounting brackets to bolt it onto the header. He removed a split shaft that was inside the auger and replaced it with a steel shaft that runs the length of the auger. He mounted a flexible coupling and sprocket on one end of the shaft and mounted another sprocket on the hydraulic motor.

To power the extra hydraulic motors he had to install an additional hydraulic pump on the swather and run an extra line out of the hydraulic reservoir.

“This modified swather works better than anything on the market and didn’t cost much to set up,” says Colonel. “I used it last year to harvest 650 acres of canola that yielded 55 to 70 bu. per acre. I was able to go 7 or 8 mph with no problems even though some of the crop was badly tangled. It left a beautiful, even swath with all the pods on top. Flow control valves allow me to regulate the speed of the knife



Swather is shown with drapers removed for winter storage.

and auger independently.

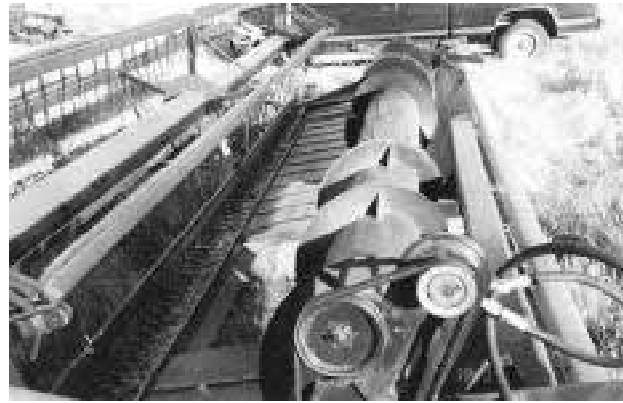
“I first tested the idea three years ago when I mounted a 10-ft. auger on a New Holland 905 swather. I think the same idea would work on any swather brand or model. There are a lot of old combines lying around that can be bought cheap. I paid \$750 for the sickle and motor and \$1,400 for the auger, hydraulic pump, motor, and flow control valves. My total cost was about \$2,100.

“I run the auger about 5 percent faster than the draper. The back of the auger is right up against the header frame and 8 in. above the drapers. The center of the auger was equipped with retractable fingers that weren’t in good condition so I removed the entire retractable finger mechanism. I remove the auger whenever I harvest timothy grass because the auger would shatter the seed. It takes only about 15 minutes to remove the auger.

“MacDon makes a header equipped with a pair of augers but it sells for about \$25,000 and doesn’t work as well as mine. The problem is that the augers are only 10 in. in diameter which allows the crop to wrap around them. My auger is big enough to push the crop down and stuff it through the opening.

“I mounted a separate hydraulic pump because I didn’t know if the swather’s hydraulic pump would have enough capacity. However, I plan to use the combine’s existing hydraulic pump when I add an auger and sickle to a new swather that I recently bought.”

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## Swather-Mounted Auger Keeps Grain Flowing Smoothly

“We mounted a 16-in. dia. feeder auger from an old International 403 combine onto an International 75 pull-type swather. It keeps the canola crop flowing evenly without allowing it to bunch up at the outlet,” says Ralph Jorgensen, Calgary, Alberta.

He and his partner got the idea after having problems with the swather leaving lumpy, uneven windrows. “The crop has to change directions on the machine as it leaves the drapers. The material catches on the frame, causing it to bunch up. The auger helps move the crop along, as well as compressing it so it can get under the frame member. The retractable fingers at the center of the auger also help pull the crop through the opening.”

They used the entire length of the 13 1/2-ft. long auger and welded support brackets onto each end to support it. The auger is driven through a pulley system by a hydraulic motor. A control valve is used to vary the speed.

“It’s a simple solution that really works well,” says Jorgensen. “Having more even windrows lets us increase the combine speed and reduces the possibility of plugging. Newer machines don’t have as serious a problem because they have larger openings. We already had the combine, hydraulic motor, and flow controls. We spent less than \$100 for the belt, pulleys, and paint.

“Each end of the auger is held up by a pair of chains that are attached to the mounting brackets. The height is fixed by adjusting the chains. Heavier crops require the auger to be lifted. The swather is 19 ft. long so the auger is about 3 ft. short at either end. However, the bunching doesn’t occur until the material accumulates toward the middle of the swather.”

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## Articulated 4-Wheeler “Twists” To Always Keep Wheels On Ground

“It has a lot of power and traction for a 12 1/2 hp rig which allows it to work great in rough terrain,” says Pat Marchwick, Owatonna, Minn., about the hydrostatic drive, articulated 4-WD 4-wheeler that he built from scratch.

Marchwick used 2-in. sq. steel tubing to build a two-part frame and mounted a 12 1/2 hp Briggs & Stratton gas engine on the back part along with a hydraulic reservoir and gas tank. The seat and steering wheel mount on the front part. The rig measures 46 in. wide and 92 in. long. It rides on 11 in. wide, 22-in. high flotation tires that are chain-driven by separate hydraulic motors. A hydraulic valve on the steering column controls a pair of

cylinders that push and pull on the articulation point at center.

“It has a very comfortable ride and can go just about anywhere,” says Marchwick. “It doesn’t have axles so it can go through tall grass or brush. A skid plate/belly pan on the underside prevents damage to the hydraulic components. The hydraulic system is sealed so there’s no way for water to get inside it, allowing the rig to go right through water and mud with no problems.

“It’s designed to keep all four wheels on the ground at all times by means of an oscillating joint which allows the front and rear halves to twist independently of each other. Keeping all four wheels on the ground at all times gives it great climbing and pulling

power. The hydrostatic drive provides a tremendous amount of torque at low speeds. I can edge the front wheels up against an 8-in. dia. log and climb right over the log with ease. Top speed is about 15 mph.

“It has only two controls and they’re both hand-operated - one for forward and reverse and a throttle lever that controls engine rpm’s. The hand-operated controls ensure safer control in rough terrain than foot controls which are hard to keep steady when going over bumps, making for a jerky ride.”

Marchwick says he’s looking for a manufacturer and adds that several attachments could be developed for the rig, including a mower deck, snowblower, and hydraulic dump box.

For more information, contact: FARM



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