



Asparagus harvester measures about 16 ft. long and 12 ft. wide. Workers stand ahead of the operator, selecting out asparagus spears as the conveyor drops them on the work table.

Mechanical Asparagus Harvester

By Jim Ruen, Contributing Editor

Kim Haws' mechanical harvester does twice as much work in an hour as a field laborer can do in an 8-hour day. Its 36 sets of cutter heads respond to broken light beams in 3.1-in. swaths while traveling at 86 in. per sec. across the field.

"A set of wafer thin photo sensors 6 ft. ahead of the cutting mechanism can be adjusted from 4 to 12 in. above the field surface to pick only those spears a certain height or taller," explains Haws. "When a light beam shooting from one sensor to another is broken at that height, it trips the mechanism to activate the cutter head."

Cutter heads that look like the spokes of a wheel rotate down to grasp the spear between two pads the size of a hand. As the pads close on the spear, a blade cuts it below the surface of the field. The pads lift the spear up and release it over a conveyor belt that carries it to the working platform above. The cutter head rotates as the next set of pads grasp a new spear, all operating within the 3.1-in. swath.

It's a complex process that requires exacting tolerances. The 36 cutter heads have a total of about 20,000 parts; Haws designed and fabricated around 100 of them in his shop. The number and uniqueness of many of the parts are part of the reason Haws expects the first few harvesters to be priced between \$250,000 and \$300,000.

"The price isn't so much the materials as it is the labor and equipment needed to make the parts," says Haws. "Over time we not only designed the parts, we had to learn how to make them. We now have the programming, tooling and fixtures needed to reproduce them."

Haws believes he's on the final prototype (no. 15 or 16) in a 40-year quest to automate the asparagus harvest. What he has built is unlike anything else in agriculture. The chassis is designed to carry the working components, including the row of sensors behind the front wheels, the row of cutter heads, conveyor beds and working platform. Various nuts and bolts, ball joints, tires, the engine and a handful of other components are among the few off-the-shelf components. Even the wheels have custom-designed hubs

welded in them to match the transverse drive shaft that was machined by Haws.

"We use a 35 hp diesel engine from a New Holland industrial lawn mower," says Haws. "It has the pto and hydrostatic drive coming off the front. It powers the mechanical drive shaft that powers the drive wheels and the cutting bed. That way if the machine picks up ground speed, the cutter heads move faster, too."

The harvester measures about 16 ft. front to back and 12 ft. from the center of one rear tire to the other. The engine sits beneath the driver at the back of the work platform that rides only about 3 ft. above the field's surface. The workers stand ahead of the operator, selecting out asparagus spears as the conveyor drops them on the work table. The empty belt loops up and over the work platform through a steel bridge and back to the cutting heads. In the newest version of the machine, the bridge will also support a sunshade over the workers.

Selected spears are placed on a second conveyor that carries them through a trimmer to be loaded into boxes. With manual harvest, the boxes are left in the field for hours until the workers are finished. With the mechanical harvester, filled boxes will be left at field ends for regular pickup and cooling. The result will be fresher, higher quality asparagus, adds Haws.

Because they are directly in line with their triggering photo sensors, any deviation in driving will cause the cutters to miss the selected spear. Haws has redesigned the front steering system in the newest prototype for tighter, more exact steering. This will allow him to use GPS assisted steering with sub inch accuracy.

"That will free up the driver from steering and also make the harvester run straighter, missing fewer spears," he says.

"Our goal is a machine that can go 24/7 the entire length of the harvest without any maintenance outside of sharpening knives," he says. "We think we have that now. This will be our last year of field testing."

Contact: FARM SHOW Followup, Haws Company, 6671 Langford Rd., Mesa, Wash. 99343 (ph 509 265-4327; jhaws1001@gmail.com).



Battery-operated "hubcap clocks" have quartz movements, a brass dial, and a sweep second hand.

"Hubcap Clocks"

Dan Wilson likes to find new uses for old things. So he gets a big kick out of turning old hub caps into clocks.

The battery-operated clocks have quartz movements, a brass dial, and a sweep second hand.

Wilson gets hub caps from junkyards and occasionally from private collections. "These are original antiques, not replicas. All the hubcaps retain their original patina with their dents, dings, and curb issues. I want to sell the character of the car," says Wilson. "Customers can request the kind of hub cap they want, but it's not possible to find every car model. The inventory is constantly

changing."

He's always impressed with the styling of hub caps on old cars. "The people who designed them were fantastic artists. They had to come up with new designs every year and their work stands up to the test of time," says Wilson.

The clocks sell for \$25 plus \$13 S & H. Contact: FARM SHOW Followup, Rusty Nut Enterprises, P.O. Box 175, 118 - 3rd Ave. N. W., Hayfield, Minn. 55940 (ph 507 477-3934 or cell 507 775-6253; wilsonb683@aol.com; Myspace.com/rustynutenterprises).



"People like the homemade flavor versus what you buy in stores," says Sandy Kuhlers, who makes and sells "Simply Homemade" jams and jellies.

"Simply Homemade" Jams And Jellies

Apple butter. Gooseberry jam. Triple berry hot pepper jelly. Those are just three of the 22 flavors of jams and jellies Sandy Kuhlers makes and sells under her Simply Homemade label.

"There's a lot of nostalgia with homemade jam," says the Fairmont, Minn., entrepreneur, who sells about 10,000 jars a year. "People like the homemade flavor versus what you buy in stores."

Kuhlers uses real sugar and makes large batches of tried-and-true recipes in a commercial kitchen. Some of the fruit - gooseberries, rhubarb and raspberries - comes from her garden. Other fruit is purchased locally from individuals and a company that sells flash frozen foods. Kuhlers sells her jams and jellies in hexagon jars with simple, old-fashioned labels reminiscent of the early 1900's.

She sold her first jams and jellies in 2003 at a friend's garage sale. She made \$100 in two days, and since she was unemployed at the time, decided to test the market at local craft fairs and farmers markets.

Simply Homemade products are also sold through Kuhlers' website and in about 20 stores in southern Minnesota, Iowa and one in Nebraska.

Customers vary from an elderly homebound woman who does all her shopping on the Internet to people in their 20's who love hot pepper jelly.

"Raspberry hot pepper jelly is the most popular," Kuhlers says. An old-fashioned favorite is ground cherry jam. It was sold out before Kuhlers even made it last fall. She plans to add more ground cherry plants and recruit her children in the tedious task of husking them.

She sells her jams and jellies in 8-oz. jars for \$6. She also sells 2-oz. jars for \$2.75 with discounts for multiple case orders. They make great wedding favors, hostess gifts and stocking stuffers, Kuhlers notes.

Her goal is to keep her product "homemade" and find more wholesale markets. Customers in the U.S. and Canada can order directly through her website.

"I will always enjoy making food and making people happy through it," Kuhlers says. "I like hearing positive responses. It's very gratifying."

Contact: FARM SHOW Followup, Sandy Kuhlers, Simply Homemade, 1496 230th Ave., Fairmont, Minn. 56031 (ph 507 236-1519; www.simplyhomemadefoods.com).

Have You Renewed Your Subscription?

Don't miss our next issue! Check your mailing label on front of this issue to see when your subscription expires.

To renew, use the order envelope enclosed with this issue, or the order coupon on page 44.

Or call us toll-free at 800 834-9665.