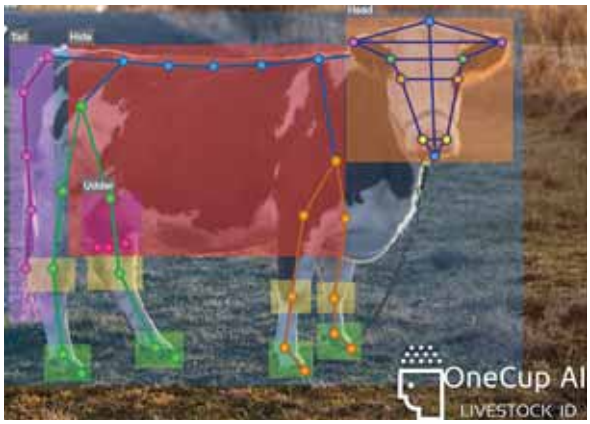


Animal ID system uses cameras and Wi-Fi to identify and track livestock.

Animal ID Changes How You See Cattle

Using a new type of artificial intelligence for animals, a Canadian company can identify every animal in a 1,000-cow herd and continuously gather data on their health and activities.

"Our algorithms have a higher level of accuracy than human facial recognition," says Mokah Shmigelsky about BETSY (Bovine Expert Tracking and Surveillance System). "We look at a lot more points on the animal's body than human systems do."

While cell phone facial ID uses 125 features on the human face, BETSY uses 512 features on the animal's face alone, right down to its cowlicks and color patterns. In addition, the cameras are looking at other areas, including the knees, tail frame and joints, at a speed of 30 frames per second. This allows BETSY to identify animals from almost any angle and even at a distance.

Mobile cameras, which can be repositioned as needed, send images to BETSY via Wi-Fi for instant data analysis. BETSY's cameras (4 to 6 cameras for 1,000 head) are constantly scanning visible animals. Visuals are identified and animals monitored by the platform whenever in view of a camera.

"Comparing gathered data allows BETSY to pick out a lame animal or other conditions faster than the trained human eye", says Shmigelsky.

In addition to health and welfare, BETSY also tracks growth optimization, nutrition and activity. Once a problem or other event such as calving is identified, BETSY notifies the rancher or herdsman by text and email.

BETSY maintains an ongoing surveillance of each animal, building its own historical record. Everything it is doing, from running and walking to eating, drinking and heat detection, is recorded. It will even track calf activity to ensure nursing, including the first feeding of colostrum.

Over time, the data gathered by BETSY will help owners evaluate herd improvement strategies. Each animal's data, whether current status or historical, can be accessed instantly from the system's internet portal via smartphone or other device.

"We had BETSY running at 20 Beta sites across Canada," says Shmigelsky. "We had it on 14 cattle operations and 6 that were a mix of horse, elk and sheep operations."

Plans are to launch the system commercially later in the year.

"There is no need to understand the technology," says Shmigelsky. "Just plug it in and start using the data. As new features come online, the software will be automatically updated."

While much of the initial work has been done on beef and dairy herds, the company is also working with sheep and other species. Sheep present a special challenge because you have to identify the same animal with and without fleece.

Contact: FARM SHOW Followup, OneCup AI, 244-1231 Pacific Blvd., Vancouver, B.C. Canada V6Z 0E2 (ph 866-238-7924; info@onecup.ai; www.onecup.ai).

James Coleman created his own solar system to power his home including a washing machine and welder.

Off-Grid Home Runs On Solar, Home-Built Generator

"I live by myself off the grid in Kentucky in a small home that I built. I was able to set up a cost efficient solar-powered system with help from Backwoods Solar Company in Sandpoint, Idaho (ph 208 263-4290; www.backwoodssolar.com)," says James Coleman, Lewisburg, Ky.

"The system includes five 36-volt, 280-watt solar panels, a 4,000-watt, 30-amp inverter, batteries, and a 10,000-watt home-built generator that's belt-driven by a 3-cyl. diesel engine. It keeps the batteries charged whenever we have a stretch of cloudy weather."

His home measures 40 ft. long by 24 ft. wide, and the ground-mounted solar panels located in front of it are connected together in parallel series. "The panels produce 1.2 kW of power, which is more than enough for my needs," says Coleman. "The inverter and batteries are stored in a 12 by 12-ft. shed next to the cabin. The inverter converts DC electricity from the batteries to 120 volts AC. The generator is stored in a nearby barn."

He uses the solar panels to operate the LED lights he installed inside the home, and all electrical appliances including a washing machine and a welder.

"I've been living off the grid since December, 2015 when I moved here," says Coleman. "When I bought this property I found out the electric company wanted $5,000 to set up an electric pole on my property. I didn't know anything at all about using solar panels to generate electricity."

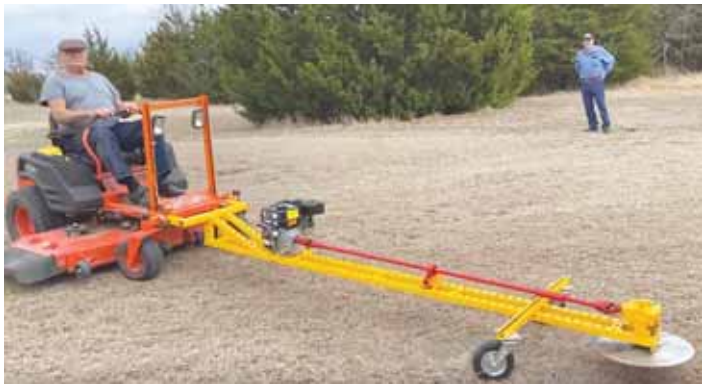
Then he saw an ad for Backwoods Solar in Home Power magazine. "I called the company, and they told me about the equipment I needed and how to set it up. They also sent a catalog. I bought the inverter and charge controller from them, and called them back several times for technical help in setting my solar system up."

A 3-cyl. diesel engine belt-drives 10,000-watt generator to keep batteries charged. Expanded metal safety shields cover the belts.

He couldn't justify the $5,000 to $6,000 cost of a 10,000-watt generator, so he made his own. "I bought a used 3-cyl. diesel engine for $1,000 and a generator head from Northern Tool for another $1,000. The engine belt-drives the generator, and both are supported by a home-built metal frame. I bought the batteries from a local golf cart service center," says Coleman.

"My total investment was about $7,500, including the solar panels, generator, inverter, charge controller, and batteries. Well worth the money."

Contact: FARM SHOW Followup, James Coleman, 246 Hamilton Lee Rd., Lewisburg, Ky. 42256 (ph 270 792-7563).



20-in. saw mounted on 10-ft. lengths of construction strut keep tree cutter a safe a distance from the mower.

"Lazy Man's Inventions" Help With Yardwork

Randy Keister figured out how to make cutting weeds and shrubs fun and safe. The retired mechanic has arthritis and serious problems with his knees so he got busy in his shop to make equipment he can operate with his zero-turn mower.

One project was to modify a 5 1/2 hp. walk-behind Cub Cadet weed eater.

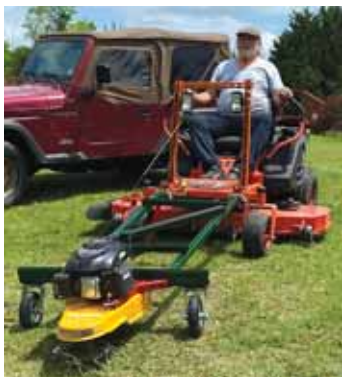
"It sticks out about 5 ft. so I can get under trees. I've had no trouble with debris hitting me," Keister says.

That's a good thing because he "powered up" the weed eater by adding 6 more strings. He created the extra space between himself and the cutting end by mounting brackets on the mower and adding metal construction strut and wheels.

"I started with 4 wheels, but it was hard to slide so I put two castors on the back," he explains. He can reach the pullcord to start it and has a wire to the grounding switch, to turn it off with a button mounted on the mower deck. It connects with an extension cord he unplugs when he takes the weed eater off.

"I built it with the idea to save me from walking, and when I put it on the zero-turn it makes weed whacking a lot more fun," he says.

He also uses his mower to cut the cedar trees that grow up on his Sherman, Texas, property. Keister's cedar saw uses 10-ft. lengths of construction strut to keep him a safe distance from the 20-in. saw blade on the end. He built it with the gear box off a Kubota belly mower, a $100 Predator motor, and castors from Harbor Freight.



Modified weedeater extends 5 ft. from the front of mower.

"The castors make it real easy to maneuver, and the 20-in. saw blade from Amazon is about as big as I would want," Keister says. He has less than $300 in the cedar saw and can operate everything from the mower seat. Typically he uses it to cut shorter trees, but he's also used it to cut taller trees with added safety measures. He uses an electric winch on his jeep with a remote control to pull the tree over in a safe direction.

Keister has had videos made that show his inventions in action. They can be seen at Facebook: Carla Carlson Keister.

Contact: FARM SHOW Followup, Randy Keister, 782 E. Cedar Rd., Sherman, Texas 75090 (ph 903 892-1415; carlakeister@gmail.com).