Build Your Own Laser Scarecrow

Ken, Deanna and Jim Elliot say that Red-winged blackbirds and other pests used to damage up to 80 percent of the crops on their family's Massachusetts produce farm. Before they built their own laser scarecrow, the Elliots tried balloons, bird distress calls, bird repellent, netting and reflecting tape to scare the critters away. They were desperate for a solution for their 50-acre farm.

The Elliots looked at different laser units on the market that ranged in price from $500 to nearly $10,000, but thought those weren't feasible as one was hand-held, and the highest priced model was good for only one field. Their farm has many separate fields.

Looking for solutions, Ken joined a laser scarecrow feasibility study in 2016 put together by University of Rhode Island plant sciences professor Dr. Rebecca Brown. In 2018 the Elliot farm was awarded a Northeast SARE grant to design and produce an effective laser scarecrow prototype for under $500. They collaborated with three developers from the Wentworth Institute of Technology, and pilot-tested 9 laser units during the 2018 growing season. Ken says those units reduced damage in their sweet corn field from 80 percent to 20 percent, and when they were teamed with a bird distress call and placed in the field before the ears were ripe, the damage was even further reduced to 8 percent.

Do-it-yourself laser light system chases birds away from crops. Plans are available on the Elliot Farms website.

Materials to build Elliot's laser unit cost about $500. A parts list, plans and a step-by-step build-it guide are available at their website: https://deannaelliot.wixsite.com/laserscarecrow.

Contact: FARM SHOW Followup, Elliot Farms CSA (elliotfarmcsa@gmail.com).

"Made It Myself" Poultry Waterer

Chuck Krueger says he's tried several different types of poultry waterers over the years, trying to find one that he wouldn't have to fill every few days. While most of those waterers worked, the water supply would get dirty and allow algae to develop. Krueger wanted a waterer that would deliver fresh and clean water at an economical price, so he decided to build one himself. He wrote about his system in Backyard Poultry magazine and provided directions on how to build the device he made.

Krueger's parts list is available from home improvement stores. It includes 4-in. dia. PVC pipe, two 4-in. PVC flat end caps, six 1/2-in. PVC 90-degree elbows, two 1/2-in. PVC plugs, a toilet flow control valve, a flat rubber washer with a 1-in. dia. hole, a stainless steel toilet water supply line, and a brass adapter for connecting to a water supply.

To build his waterer Krueger drilled three holes in one of the end caps, two for installing the PVC plugs and the third for the flow control valve. The flow control extended through the bottom of the cap so a water supply line could be connected, just like on a toilet tank. He used four pieces of 1/2-in. PVC pipe and elbows to make a loop for the fresh water. He attached the loop to the end cap holes with PVC elbows. Five poultry nipples were added to the fresh water loop for the chickens to drink.

Nipples on pvc pipe loop deliver fresh, clean water at an economical price.

The fresh water level in the PVC reservoir is controlled by the toilet valve, with the second end cap serving as the tank cover. Krueger attached the waterer to the side of his coop using large hose clamps.

Krueger also made a second waterer with poultry cups and says that one also works well. For complete instructions with photos see Krueger's story at www.backyardpoultry.com.

Contact: FARM SHOW Followup, Chuck Krueger via Backyard Poultry.

Screw-On Grip Studs are made from tempered steel, with a welded tungsten carbide rod as the contact point. They can be used on everything from boots to tires.

Screw-On Studs For Boots And Tires

"When weather conditions become icy and make walking treacherous, you can add screw-on Grip Studs to your boots - or your tires," says Bryan Schwartz, national sales manager at Grip Studs.com, Merlin, Oregon.

"Grip Studs work great for any kind of work or play around the farm when the ground is slippery," says Schwartz, whose company makes the screw-in studs for any kind of boot. They also make Grip Studs for tires that can be used on everything from tractors to skid loaders, forklifts, cars, trucks, and 4-wheelers.

The studs are made from tempered steel with a welded tungsten carbide rod as the contact point. "Carbide is one of the hardest metals on earth, which makes Grip Studs extremely durable and long wearing. You can get years of service out of one set of boot studs," says Schwartz.

He says that unlike typical sheet metal-style studs, Grip Studs have a wide-auger, self-tapping thread design that makes them easy to install without the need for pre-drilling. "The wide-auger thread design gives the studs great holding power, unlike sheet metal-style threads that allow movement farther in or out of the rubber," says Schwartz.

The studs are designed with a notch on each side, and to install them the company sells a specially designed tool that chucks into a cordless drill. The tool has 2 prongs that fit into the notches. Also available is a manual driver handle tool, which can be slid into an adjustable magnetic screwdriver equipped with a removable tip. The company recommends installing 14 Grip Studs per boot sole.

Grip Studs can be removed and re-installed the following season. "In fact, many of our customers use this method to stretch the lifespan of their studs in both footwear and equipment," says Schwartz. "The drive tool notches are buried into the rubber when installed to target depth, and therefore protected from abrasion. To withdraw Grip Studs just reverse the stud back out with the bit. For best results we recommend you don't install the studs into the exact same location as done the previous season, but instead move to the left or right of it."

According to Schwartz, Grip Studs are a great alternative to tire chains on some kinds of equipment, such as the newer tractors on the market being used for snow removal. "Many of the modern models lack clearance around their tires to effectively use tire chains. Grip Studs protrude from the tire less than 1/4 in.

"Another benefit to using Grip Studs instead of tire chains is the efficiency they create. You can safely travel up to 65 mph with Grip Studs installed, compared to an average of 20 to 30 mph with tire chains."

He says another ideal application for Grip Studs is on rubber track skid loaders. "These machines are inherently horrible on ice. They perform worse than rubber-tired skid loaders because of the way they distribute weight. They apply only about 1 lb. per sq in. of pressure to the ground, which causes them to slide easily."

Grip Studs are available in various thread depths and tip lengths to fit a wide range of rubber tires and tracks.

A boot kit pack of Grip Studs that includes 28 studs along with a manual installation tool sells for $44.95 plus S&H.

Contact: FARM SHOW Followup, Grip Studs, P.O. Box 539, Merlin, Oregon 97532 (ph 541 476-1928, ext. 14; gsinfo@gripstuds.com; www.gripstuds.com).

Front-Mount Post Driver Easy To See

Malcolm Casey flipped his post driver around from the rear of his tractor to the front, giving him better visibility and more versatility.

"I can see what I'm doing without turning around," he says. "Plus, now I can drive an 11-ft. post."

Casey made a bracket that bolts on where a front weight bracket would normally go on his 856 International. The original 3-pt. frame, with its platform for the valve assembly, is welded to a bracket within the mounting bracket. He designed the second bracket to slide inside the first with the aid of a hydraulic cylinder. This allows him to raise the driver for longer posts.

"If I ever wanted to return it to 3-pt. rear mount, all I would have to do is cut away the welds," says Casey.

To dismount the driver, he drives in a post and fastens the driver to it. He sets the OEM stabilizer stands down, removes 4 bolts and drives away. This leaves the driver at the ideal height for hooking back into place.

He prefers 10-ft. long, 5 1/2-in. steel pipes with a 1/2-in. wall for fence posts. The posts weigh about 20 lbs. to the foot.

"I put the tractor with the driver into position where I want to drive the post," says Casey. "I use a second tractor with a loader to lift the posts into position and set them against the driver."

Casey added a bubble level to the driver platform and valve assembly. This makes it easier to tip the driver forward or back into vertical position on slopes. If he used it on a more regular basis, he would have added a left and right tilt as well.

When modifying the driver, Casey admits to getting a little carried away. "I added a 3-ft. long, 1/2-in. steel plate to either side of the driver," he recalls. "I thought the added weight would help it drive posts faster, but it's a light driver and was engineered for only so much weight."

Casey notes that the added weight has caused metal fatigue in several places, requiring some repair. He also regrets not making the plate that attaches the assembly to the tractor heavier.

"I used 1/2-in. steel plate, but I should have used 3/4 or 1-in. steel," says Casey. "A friend of mine gave me some 1 1/2-in. steel, and I plan to use it to replace the original plate."

Aside from those problems, the driver has worked well. Casey farms in the Flint Hills of Kansas, where rock ledges at the surface are common. He notes that solid rock is the only thing that can stop his driver and is the only place he has to dig post holes the hard way.

"It will drive through almost anything else, but you need ear plugs," he says. "My neighbor can hear me driving posts a mile away. It can drive a 10-ft. post 5 ft. into the ground."

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Malcolm Casey says his front-mount post driver can drive a 10-ft. post 5 ft. into the ground.