

Wood Splitter Add-On Gives Cleaner Splits

Gerry Hawkes had trouble getting a clean split with the four-way wedge on his heavy-duty Timberwolf wood splitter. The leading edge of the horizontal blades was set back slightly from the leading edge of the vertical wedge.

"I use the four-way wedge most of the time, and often the upper and lower pieces are still attached by wood fibers after splitting," says Hawkes. "I end up tugging at the pieces or reversing them and splitting from the other end. To solve this, I made blocks from scrap steel and added them to the pusher block."

Hawkes used 3 by 3-in., 1/4-in. sq. steel tubing for the 11-in. long blocks, which he hung to either side of the pusher block. The 2-in. gap left between them accommodated the vertical wedge while eliminating most of the difference with the horizontal wedge.

"I welded an 8-in. long section of 3 by 3-in., 1/4-in. thick angle iron to the top of the blocks so one leg of the angle iron would lay flat on top of the pusher plate," says Hawkes. "The other leg of the angle iron keeps the blocks from spreading as the wood pushes into them."

To help keep the blocks from spreading, Hawkes welded two 1-in. wide, 8-in. long strips of 1/4-in. thick steel to the lower part of the blocks. A length of angle iron welded to the horizontal leg's back side slips over the pusher block's back to secure the add-on blocks in place.

"It's easy to slip the blocks on and off the pusher block," says Hawkes. "I've used the



Hawkes used steel tubing for the long blocks. The gap left between them accommodated the vertical wedge, extending the reach of the horizontal wedge.

add-on for five to six hours. Even though the tubes are fairly thick, they still show some deformation from the pressure of splitting wood. I just used whatever scrap I had lying around. If needed, I can always replace them with solid steel."

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Auger Rack Makes Fencing Easier

A farmer's request for a post hole auger rack has turned into a popular product for Swihart Solutions. Now in its new, improved version, the rack makes switching between augers faster and easier.

"I built the first one for a farmer who had very specific needs in mind," says E.J. Swihart. "He was tearing out old fence and replacing it with new. He wanted storage for certain augers, an extension and an auger driver, as well as a wind-up attachment for old barbed wire."

After Swihart designed the custom unit, he put it on his webpage to gauge interest. When he received calls about it, he asked what they were looking for.

"No one wanted a wire winder," he recalls. "I listened to what they wanted and redesigned the rack around common needs."

Swihart's new rack holds augers from 9 in. dia. to 24 in. It also holds a hydraulic drive and an extension.

"I streamlined it to optimize materials to keep the price down," says Swihart. "The key was to find a height that would accommodate any size auger."

In addition to farmers, Swihart sold his rack to a company that installs custom playgrounds. He's also received inquiries from other contractors.

The rack has a quick attach for skid steer and other front-end loaders. It also has pockets at both ends for easy moving with a pallet fork.



Rack holds augers from 9 in. dia. to 24 in. It also holds a hydraulic drive and an extension.

"It's easy to pick up and set on a trailer or truck bed or simply carried to the fence row with a skid steer," says Swihart.

The post-hole auger rack measures 50 in. wide, 42 1/2 in. deep, and 52 1/2 in. tall. It's priced at \$2,500 and ships free to most locations.

"If, like my first auger rack customer, you have specific needs, we can build a rack to your specifications," says Swihart.

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Researchers Explore Ancient Wheat Traits

Ancient wheat and wheat ancestors may be a source for disease-resistant wheat traits. The concept is being explored at over 38 locations from Kansas State University to the John Innes Center in Norwich, England and beyond. Researchers are working with Open Wild Wheat, a directory that includes the genetic sequences of 150 wild wheats belonging to a wild relative of modern-day wheat. Two other ancient grains are also being investigated.

The Open Wild Wheat Consortium (OWWC) is co-led by Dr. Jesse Poland of Kansas State University. He describes the project as looking to unlock traits in the original wild wheat relatives that have been left behind.

While domestication over the past millennia improved grain yield, seed size and nutritional content, it also served to limit traits like resistance to biotic (disease) or abiotic stress (drought). Poland notes that this threatens sustainable wheat production and world food security.

Open Wild Wheat was crowd-funded with contributions from academic institutions and industries in 15 countries. They raised \$150,000 to finance the sequencing.

OWWC group leader Dr. Brande Wulff, previously with the John Innes Center, explains the need to look at these genetic sequences. He notes that the ancient cousins have a genetic diversity that has been lost.

The effort has benefited from two newly developed technologies. Speed cloning allows breeders to clone candidate genes recovered from the directory. Speed breeding, an intensive wheat growing platform, allows breeders to move identified traits into elite, modern wheat varieties rapidly.

The directory contains staggering amounts of data. If printed, the pages would stretch from the Earth almost to the moon. Searching through this data for traits resistant to wheat stem rust or powdery mildew is like looking for a needle in a haystack.

However, the needles are being found. Wulff reports that four resistant genes have already been identified with the new technology.

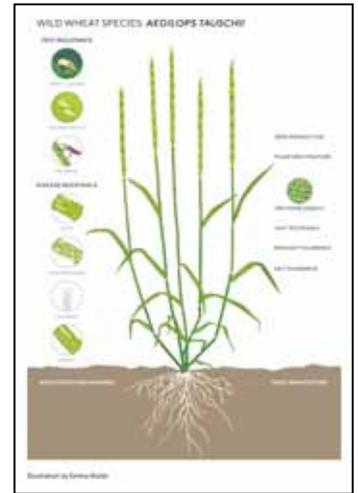
At the same time, the John Innes Centre is examining the genomes of 827 wheat samples gathered from 32 countries in 1922. They're the remains of a British collection that once totaled 7,000 samples. The rest were lost due to insect damage, disruption in upkeep during World War II, and a lack of dehumidification and refrigeration in the collection's early years.

Simon Griffiths is the group leader of Delivering Sustainable Wheat at the Centre. He and his team have spent the past decade differentiating those landraces from modern wheat.

some trial and error—a good afternoon project," he says. "If it hadn't been for that nifty little invention, I would've had to take it into the Deere garage just for that bolt."

Giles also created a custom cart from pallets. "My friend and I found an old 1800s water pump in the woods," he says. "It seemed like an interesting project, so we used a subcompact tractor to fish it out."

When winter fell, they moved the pump into a farm shop but found it took up a lot of room and was too heavy to move easily. "My solution was to make a box cart from a pallet and four caster wheels. Four 4-ft. wood posts created the rails, which allows space for the big gear on the bottom." Now that the pump can be pulled out when



Speed breeding is an intensive wheat growing platform allowing breeders to rapidly move identified traits into elite, modern wheat varieties.

They also sequenced 208 modern cultivars to compare the old with the new. This allows them, he explains, to quickly identify variants absent in modern wheat. They found that 60% of the variants were not present in the modern varieties. Of seven ancestral groupings, only two were present.

Various beneficial traits have been identified, including genes related to increased yield, increased stripe rust and septoria resistance, and increased nutritional benefits like calcium, zinc and iron.

A gene for resistance to wheat blast, a fungal disease spreading in tropical areas, has been cloned. One of the old landrace varieties is resistant to slugs. Slugs simply don't like the variety and leave it alone, reports Griffith.

The project's genomic data and resources, including seed, are available to outside researchers and wheat breeders at no cost. The challenge remains introducing the new/old traits while maintaining optimal trait combinations in modern varieties.

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Innovative Teen Likes To Tinker

At age 14, Wyatt Giles of Vanderbilt, Mich., is no stranger to tinkering with machinery. "I've always liked tractors," he says. "My family moved up to Northern Michigan four years ago, and many of my friends are also interested in them. We spend a lot of time haying in different fields around us."

This interest led him to an innovative solution when a family tractor malfunctioned.

"The bolt that holds the shifter in place on our Deere 1025R tractor came loose," he says. "A new machine quirk, I guess. My idea was to take an articulated socket extension and put it on a straight socket extension. Then, with some electrical tape to hold the socket in place, I could fish into the crevice where the bolt was and tighten it."

His solution worked like a charm. "It took



Wyatt Giles drives a tractor on his family farm in Michigan.

convenient, Giles continues to chip away at repairs. "There's a lot of junk and oil to clean out to see whether it's possible to restore," he says. "It should be a fun project."

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