

## Shed Built To Withstand Flooding



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For Brendon and Naomi Yoder of Sumas, Wash., last winter produced the worst flooding they'd ever seen.

"Their house was high enough to avoid damage during two separate flooding events," says Mark Foley, Brendon's father-in-law. "But their garden shed flooded, floating their riding lawn mower, freezer, and assorted tools around the yard."

Foley came up with the idea to build a new shed that would float, like a miniature boathouse.

Brendon enlisted the aid of his father, William Yoder of Pennsylvania, and between the two of them, they designed the new shed to withstand flood waters, stay in place, and even float if necessary.

The building is built like a regular shed except for the buoyant foam which they pumped into the spaces between the floor joists. They also added metal posts and chains at each corner of the exterior to keep the shed from floating off to the neighbors.



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"I don't think Brendon is hoping for another flood or planning to go into the shed building business," Foley says. "But he's mildly curious about how well his floating garden shed will work."

He estimates they spent around \$800 to \$1,000 to upgrade the new shed.

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**Radio Wave Energy drying is 97 percent efficient compared to just 30 percent with conventional drying, according to Dry Max.**

## "No Heat" Crop Dryer

Forcefield dryers use radio wave energy (RWE) to energize and separate water molecules from each other, pushing them out of the material being dried. Once in the air, the free molecules are easily removed by a fan, according to Kevin Eichhorn, Dry Max.

"We've used the Dry Max technology in the lab to dry alfalfa, protein wet cake and grain," says Eichhorn. "Grain is the hardest to dry, as the moisture has to leave through the limited space at the germ end. With grass and high moisture materials, the water exits everywhere."

Grain may indeed be hard to dry, but that's the market he's focused on first. According to Eichhorn, RWE is 97 percent efficient compared to 30 percent efficiency with conventional crop drying technologies. Unlike them, RWE doesn't cost more to dry crops at 30 percent than it does at 20.

"Farmers will be able to harvest grain greener, yet with lower drying costs," says Eichhorn. "Crops are vulnerable to yield losses of 2 to 4 percent per week when left in the field to dry. A Forcefield grain dryer will capture more of the yield."

Another advantage is speed of drying. Free water comes out very fast, suggests Eichhorn. "We can dry a 3-ft. grain wall, while conventional dryers can only do 8 to 10 in.," he says. "Our cost to dry will be much less than half that of a propane gas dryer, and the price won't increase during drying season as propane does. We use electricity, and those rates don't change."

The Forcefield technology may be fast, but it's also gentle. The radio waves pass through

the outer shell to target the highest moisture first. Instead of drying from the outside in with high heat, moisture is released from the inside out. Nutrients and crop integrity, as well as volatiles like taste and smell, are preserved, while mold, mildew, insects and other problem organisms are killed. Crops intended for seed also benefit from the gentle system, with germination rates of 98+ percent.

The Dry Max system is designed to be modular for easy transport. The Forcefield technology can be applied to batch dryers and tower dryers, as well as horizontal dryers. It can be scaled up for whatever volume is needed on a bushel per hour or tons per hour basis.

Eichhorn acknowledges that initial units will be more expensive than conventional dryers. As numbers increase, economies of scale will lower prices. In the meantime, he's confident the lower cost of drying and other advantages of a Dry Max system will justify the investment.

"We plan to begin production next year and are looking for our first 100 customers for the 2024 crop drying season."

Once the initial basic unit is in production, Eichhorn has add-on units planned. "Our add-ons will allow farmers to use the Dry Max Forcefield system to dry alfalfa, manure, waste products and other materials," says Eichhorn.

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**Currently, the tines fall 8 to 10 in. ahead of the bucket edge. Tschetter plans to add removable teeth to extend the bucket's reach.**

## "Poor Man's" Grapples Do The Job

Quinton Tschetter's five-tine passive grapples drop in place when he tips his loader bucket. Raising them is as simple as pulling on a rope. He says the Poor Man's Grapples work even better than his first brush grabber (Vol. 45, No. 3) that used a length of railroad rail on chains to retain material in his 4-ft. wide loader bucket. These grapples are lightweight dump rake tines.

"I tried them out on a bunch of branches the first time I used them, and they worked better than I expected," says Tschetter. "When I tip the bucket forward, they fall down over the material in the bucket."

Tschetter slipped the roughly 3-in. dia. rounded ends of the tines over a 2 1/2-in. O.D. pipe that was fitted with two slightly larger pipe sleeves. He welded five tines to the pipe to fix them in place and welded a length of steel strap to each sleeve to serve as a flange. The flanges bolt to the top edge of his Kubota loader. A piece of angle iron welded to the right end of the pipe limits the amount the grapples can tip back towards the tractor.

He attached a notched pulley to the left

end of the grapple pipe. The notch acts as a stop for the grapples as they fall forward. The idea was to fix a rope to the pulley and lift the grapples by pulling on the rope.

"I found I needed more leverage, so I added a lever to the pulley and ran the rope over it," says Tschetter. "Then I realized that all I needed was the lever, so I plan to remove the pulley and weld the lever to the pipe."

Tschetter added a length of greenhouse wiggle wire at the midpoint of the tines to give them added rigidity. He notes that the tines are fairly rigid in their own right.

Currently, the tines fall 8 to 10 in. ahead of the bucket edge. Tschetter plans to add removable teeth to extend the bucket's reach.

"I'm using leaf springs from a semi to make three 18-in. long, 3-in. wide teeth that I'll bolt to the bucket," he says. "This will make more efficient use of the grapples and the bucket when picking up brush."

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## DIY Electric Pet Fence Installation

Scotty Gardner needed a way to contain his family's 8-month-old Texas heeler pup who was beginning to venture into the greater neighborhood and cause problems.

"My wife and I decided we would try an 'invisible' pet fencing system," says Gardner. "We started with a basic fencing system, but it only contained enough wire to do a small area, and we needed two acres. So, we had to buy another 1,500 ft. of 20-gauge wire."

Needing a way to bury the wire without using a spade, Gardner made a simple plow and welded a small pipe behind it for the wire to move through. This made it possible to bury the fence wire quickly and effortlessly.

While his method worked for burying the wire, Gardner thinks conditions must be nearly perfect for success. "The metal could have been thicker to be a little stronger. It probably wouldn't have performed well in a wooded area. I hit a big root during the last 20 ft. of the fence and bent it pretty good."



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