

## Low-Cost Drop Pan Helps Fine-Tune Combine

David Hofer's Bin Buster drop pan helps put more grain in the bin and costs a fraction of other drop pans on the market.

"After the combine has passed, check the chaff on the pan for grain," says Hofer, Baildon Colony. "Clean the sample, measure it, check the chart to see how many bushels per acre you are losing, and adjust the combine if needed."

Hofer provides charts with the pan, which he says can be used with all crops. They are calibrated by either grams or hand-counted grains.

The pans are constructed of used grain tarp and fiberglass rods. The rods fit in sleeves at the edges of the pan and are held in place by 90-degree pvc connectors.

"Once it is assembled, it can be tossed in the back seat of a truck until the end of the season and then returned to its storage pouch," says Hofer.

The Bin Buster is designed to be tossed

under the rear combine wheel, which makes it less likely to tip on stubble. It's positioned to get a good sample of chaff and straw coming out of the combine as it passes over.

Hofer designed it from flexible materials after complaints from combine drivers. "The pans they used were getting bent up when driven on accidentally," says Hofer. "With mine, they are supposed to drive on it."

Baildon Colony runs 6 Deere combines with one person periodically checking grain loss with the pan. Once he has the loss calculated, he radios the operator with the information, which can be used to adjust the machine.

"The operators feel the pan helps them get to know their combine better so they can fine-tune it," says Hofer. "It lets them know they aren't losing too much crop."

For single combine operators, Hofer suggests making a hinged platform for the pan. He advises hanging it under the body of



Made from used grain tarp and fiberglass rods, Bin Buster drop pan is designed to be tossed under the rear combine wheel. It collects a sample of chaff and straw coming out of combine to measure grain loss quickly and accurately.

the combine, but just ahead of a rear wheel. When the operator wants to take a sample, pull or release the platform's catch allowing the pan to slide down in front of the wheel. After the sample has been checked, replace the pan, adjust the combine if needed, and go.

The Bin Buster is priced at \$120 plus

shipping. "As long as I have used tarp, the price should stay pretty much the same," says Hofer.

Contact: FARM SHOW Followup, David J. Hofer, Baildon Colony, Box 968, Moose Jaw, Sask. Canada S6H 4P6 (baildonshoeshop@gmail.com).

## Plasma Purifier Sterilizes Hog Barn Air

Herek Clack has developed a new and less expensive way to protect pigs from devastating viral and bacterial-based diseases. His non-thermal plasma device produces electric discharges that sterilize incoming air, killing airborne viruses and microbes.

"We use the electric field to break apart oxygen and water molecules," explains Clack, Civil and Environmental Engineering, University of Michigan. "We use those ions to attack the viruses and bacteria."

Proven in the lab, the device will now be tested in parallel with an exhaust fan in a hog barn. Clack will be working with a University of Minnesota veterinarian and associate professor to validate the technology and scale it up for commercial use.

"The system could be used to treat air being drawn in to protect animals inside a facility or air being pushed out, protecting

people and animals outside the facility," says Clack.

Confident the technology is needed by the pork industry, Clack and Michael Drake recently started a company to continue development.

If proven effective in barns, the system will be much more cost effective than current particulate arrestor filters. The main cost of Clack's system is in its voltage amplifiers and rectifiers.

"Based on the prototype, we estimate the price would be about a third the cost of a current filtration system, and maintenance would be one tenth," says Clack. "Current systems have to replace filters. Ours has just 2 electrodes that can be rinsed off periodically."

Contact: FARM SHOW Followup, Herek Clack, Taza Aya, LLC (ph 312 375-5692; herek@taza-aya.com) or Michael Drake (ph 734 417-9639; mike@taza-aya.com).



Plasma purifier produces electric discharges that sterilize incoming air, protecting pigs from viral and bacterial-based diseases.



Arnold Bergesen used 3-in. dia. pipe and caster wheels to build a frame for his 10 by 20-ft. plastic storage shelter. Frame has pockets on the sides and corners that the shelter's hoops pin onto.

## Conversion Makes Shelter Easy To Move

"I made my 10 by 20-ft. plastic storage shelter portable by mounting it on a home-built steel frame that rides on a pair of caster wheels. I can easily move it anywhere with my loader tractor. I just lift one end of the shelter about 12 in. off the ground and drive forward," says Arnold Bergesen, Rimbey, Alberta.

The shelter has 4 hoops that support a plastic roof and sides. Bergesen used 3-in. dia. pipe and caster wheels from an old pull-type sprayer to build a frame with pockets on the sides and corners that the hoops pin onto.

He used the 2-section, 3-in. dia. pipe boom from an old 35-ft. sprayer to form both sides of the frame, then welded 2 1/2 ft. of pipe onto each section to lengthen the frame's sides to 20 ft. He used 10-ft. lengths of 1 1/2-in. dia. pipe to form the frame ends.

The frame is held together at the corners by welded-on 2 by 6-in. pipes. He welded more of the pipes onto the frame at intervals to form pockets for the hoops, and drilled 5/16-in. dia. holes into the pockets to pin the hoops on. The spray boom's caster wheels fit into brackets that he welded onto 2 of the pockets.



Conversion allows shelter to be easily moved anywhere with a loader tractor.

"It works great. I use it to store lumber that I cut with my sawmill and also to store my car and lawn mower," says Bergesen. "It's light enough that I can even move it by hand. I remove the wheels and set the frame flat on the ground after moving it to a new location."

Contact: FARM SHOW Followup, Arnold Bergesen, P.O. Box 827, Rimbey, Alberta Canada T0C 2J0 (ph 403 843-6096).



"I use the top rails off chain link fences to make handles for garden tools. They're stronger and don't break as easily as wood," says Dan Long.

## Pipe Handles Great For Garden Tools

There's no rule that tool handles have to be wood, says Dan Long of Russellville, Ala. In fact, the 84-year-old prefers tools with metal pipe handles.

"I use the top rails off chain link fences to make handles," he says. "They're stronger and don't break as easily as wood."

He makes handles for shovels, post hole diggers, and hoes. He likes to vary the length for different purposes. It's easier to work with a short-handled post hole digger for a shallow hole, for example.

Long secures the pipe to each tool with a bolt tightened through a drilled hole. He paints the handles with spray paint and covers the top of the pipe by gluing on plastic tops from grease tubes. They fit well over the 1 1/4-in. pipe.

"I look for broken shovels and tools that people throw away. You can use these handles on many different tools," Long says.

Contact: FARM SHOW Followup, Dan Long, 6365 Hwy. 87, Russellville, Ala. 35654 (ph 256 332-0205).