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Portable Cattle Shade Folds Up Fast

Doug Shaffer didn't like his options when looking for portable cattle shades.

"They were called portable, but they didn't seem practical or easy to move," says Shaffer. "I saw one that looked like you needed an engineering degree to put it up, and it cost in the \$20,000 range."

Shaffer runs cattle and rotates pastures regularly, if not intensively. He needed shade for pastures that had no shade at least part of each day, and he needed one he could move easily. It also had to be wind-worthy.

"Our average days can see a 45 mph wind," says Shaffer.

When Shaffer came across Rush-Co's cattle shade, he knew he was halfway to his goal. Although the company also makes shade systems, those didn't fit his needs. However, the tensioning system they had developed was just what he was looking for.

Shaffer decided to design his own mobile shade system using tensioning systems from Rush-Co. For the frame, he went to a Missouri manufacturer of big-bale gooseneck

trailers. They build his shade frames using the same heavy-duty center spine used in their trailers.

"Our 18-ft long spine rides only 12 in. above the ground and is extremely heavy," notes Shaffer. "This gives it a very low center of gravity, yet provides maximum access for the cattle."

Shaffer mounted 12-ft long axles at either end of the center pipe with a super simple brake system. He simply runs chains from the frame to anchor points on the rear wheels.

Vertical posts at each wheel and one centered on the 18-ft long center pole form the base of a rectangular frame that supports the shade cloth. While the upper frame measures 12 ft by 18 ft, extensions at each corner permit a shaded area of 30 by 30 ft. Shaffer estimates this is enough for 25 cow/calf pairs or up to 45 stockers.

The shade stands 9 ft high around the perimeter and 9 1/2 ft at the center. It's made of two triangular pieces of heavy-duty 12-mil material mounted on an aluminum track. The track runs diagonally from one front vertical to the opposite rear vertical.

"Using two pieces of shade cloth allows us to use the heavier material," says Shaffer. "We expect a 7 to 10-year lifespan with it. It allows about 20% of the light through it as well as good airflow. The airflow is important. When you get 30 to 40 cows under it, they give off a lot of heat."

The two-piece shade cloth also makes putting it away in the winter easy.

"All we do is release the tension and roll them back to the center," says Schaffer.

When Schaffer wants to move a shade to another pasture, he simply pins the tongue to an ATV, UTV or other vehicle.

"We don't damage the grass and can move it as often as needed," he says. "As the sun moves, the shaded area moves and the cattle move with it. Every time we move it, the grass where it stood comes back better."

Shaffer notes that shade helps keep cattle comfortable, which can increase conception rates by 2% to 3%. At today's prices, that's enough to pay for the system, he adds.

Having sold ag equipment his entire life, Shaffer saw the opportunity and began marketing them. Because his main product is Advantage Feeders from Australia, he calls them Advantage Portable Shade.

Once Shaffer had a system in his pastures, he began receiving requests from others.

"The only downside to them is there's no easy way to ship," he admits. "They do break down, but the basic frame is heavy. The total weight in the field runs around 3,200 to 3,500 lbs."

Shaffer prices the shades at around \$11,000, depending on shipping.

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Boson offers 72 miles of range (8 hr) on a single charge. Plug it into its standard 110-volt charger, and it's ready to go the next day.

E-Work Cart Tackles Many Jobs

Boson Motors has introduced a new type of UTV that combines the strength of a 1-ton truck with the low maintenance and torque of electric power. The 27-hp work platform can carry or tow up to 2,000 lbs thanks to its dual-motor, 4-WD system. With a top speed of 20 mph, it's designed for work, not play.

"We launched with last year's pilot program in American markets," says Bryce Telfer of Boson Motors. "We have more

than 30 units deployed between Texas and California, and a growing dealer network in five states. We have no plans as yet to market in Canada."

Currently assembled in India, the Boson uses a global supply chain of proven components. The company is small but growing, with plans to start assembly in the U.S.

The Boson Platform offers 72 miles of range (8 hr) on a single charge. Plug it into

its standard 110-volt charger, and it's ready to go the next day. With a 240-volt outlet, it charges in 5 to 6 hr.

It has a turning radius of 14 1/4 ft (center-to-center) and a ground clearance of 9 1/2 in. Overall dimensions are 5 1/2 ft wide by 14 ft long, with a height of 7 ft. The bed measures just over 4 1/2 ft wide by 8 ft long. The Boson Platform has a wheelbase of 7 ft and a track width of just under 5 ft. The base weight is 2,910 lbs.

The Boson Platform is available in four configurations, each with a different price. The Work Rig is priced at \$28,999 and includes 12-volt circuits available for lights and other equipment. Extensive options are available to customize the machine to the owner's needs.

The Crew Rig, a people carrier, is priced at \$33,478. It has nine seats, in addition to the standard two seats found on other models. It also features a full-length canopy with cabin and interior lighting, as well as side steps and added grab handles.

The Load Rig is priced at \$34,499 and is equipped with a hydraulic dump bed, toolboxes, a spare tire, side steps, a roof and a windshield.

The Spray Rig is equipped with a 200-gal skid sprayer. Priced at \$38,996, it features Raven valves, a 3-section manifold, and a toggle box with RAM claw-mount. The 12-volt brushless centrifugal Hooker pump provides variable speed control up to 56 gpm and 55 psi. It also includes 110-volt

exportable power.

The modular platform is designed for customization. It includes several 12-volt pigtailed for installing lights and other accessories. Accessories can be added or removed with basic mechanical and electrical tools.

The Boson Base can connect to cellular networks to provide fleet visibility, state of charge, and basic status. The company is developing autonomy as a future accessory/retrofit. Owners can sign up for a beta tester program.

Additional accessories under development include a smart module with remote control, a locking rear differential, Starlink integration, and an enclosed cab with heating and cooling.

The company notes that, like any EV, the Boson Platform can experience reduced usable range in cooler temperatures, especially below freezing, and under higher loads, on soft ground, on hills, or during frequent stop-start work. Those same factors, along with load, can affect range at any temperature. That said, Telfer notes that the Boson Platform has undergone several years of testing in a variety of conditions.

"We've tested all over the U.S. to ensure proper functionality, including multiple years in snow and ice in Minnesota," he says.

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Gene Could Triple Wheat Yields

University of Maryland genomics researcher Vijay Tiwari has identified a rare wheat gene that produces three grains per spikelet, compared with one grain per spikelet in conventional wheat. If wheat breeders can select for this gene, wheat production could triple.

"Pinpointing the genetic basis of this trait offers a path for breeders to incorporate it into new wheat varieties, potentially increasing the number of grains per spike and overall yield," said Tiwari, Associate Professor of Plant Sciences and co-author of the study.

The 3-ovary trait was first observed in a naturally occurring mutant of common

bread wheat. At first, they didn't know what caused it.

Tiwari and the research team created a precise map of the mutant wheat and compared it with that of ordinary wheat. They identified a gene that's normally inactive.

In the mutant, the gene known as WUSCHEL-D1 (WUS-D2) was active. When it's turned on early during flower development, it enlarges the floral tissue and allows the plant to produce additional female organs, such as pistils (ovaries).

Discovering the multi-ovary variety in wheat could prompt researchers to look for similar mutations in other grain crops. It

could also spark greater interest in hybrid wheat.

"By employing a gene-editing toolkit, we can now focus on further improving this trait for enhancing wheat yield," says Tiwari. "This discovery provides an exciting route to develop cost-effective hybrid wheat."

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Photo courtesy of Vijay Tiwari, University of Maryland

Discovering the multi-ovary variety in wheat could prompt researchers to look for similar mutations in other grain crops.