

Mobile Shade Solution Easy To Move

As summer heats up, providing shade for livestock is no longer just about trees, bushes or makeshift windbreaks. Not every farm or pasture has these resources, which is where Genesis Enterprises steps in, tackling animal welfare with a fresh, practical approach.

Kevin Connot, owner of Genesis Enterprises, describes their mobile shade system as “a robust solution” and notes enthusiastic adoption across the U.S. Their flagship product consists of two 20-ft. by 20-ft. umbrellas made of durable HD polypropylene agricultural mesh, mounted on a four-wheel running gear.

If desired, Genesis sells the umbrellas separately because farmers often prefer to provide their own running gear to save money. Deployment is as straightforward as opening a regular umbrella. The supporting arms are flipped outward, and the masts are extended with a manually operated hydraulic jack.

“For transport from spot to spot, just pull it by hand, ATV or a vehicle, even without folding if you don’t have far to go,” Connot says. “It also comes with a wind-release feature, so in windstorms the outer arms will flip upward to loosen the fabric and absorb the energy, which reduces the chance of frame damage or overturn.”

Connot describes Genesis’s innovation as closely tied to the principles of regenerative agriculture.

“As traditional as grazing the open range is, it’s not that efficient,” he says. “Our product takes efficiency to another level. The mobile shade enables animals to do better. As stocking rates increase, average daily gain rises and lactation improves. The shade’s transport feature enables soil and water health improvements, there’s less compaction, and manure as fertilizer is more evenly distributed.”

Assembled in Nebraska and shipped



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directly to customers, Genesis Enterprises is actively seeking dealers.

Their modular, cost-effective design lets farmers mix and match components, keeping costs down and encouraging innovation. A complete 20-ft. by 20-ft. umbrella sells

for \$5,000, and a running gear with two umbrellas retails for \$15,000 plus S&H. Local pickup and global shipping are available.

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One variety produced 343% as much cotton by weight as the control. It did so with 75% less fertilizer and no irrigation, qualifying it for a low-carbon cotton premium.

Better Crops With Fewer Inputs Using AI

Avalo, Inc. is revolutionizing how new crop varieties are bred and introduced. Founded in 2021, Avalo’s Gaius AI platform combines traditional crop breeding with AI to develop superior genetics. Avalo’s drought-tolerant, dryland cotton varieties require less fertilizer and fewer pesticides, and they produce more, higher-quality fiber.

“We drew on the USDA Cotton Germplasm Collection housed at College Station, Texas, as well as other public and private germplasm collections,” says Rebecca White of Avalo. “However, we also looked at the total supply chain, from agronomic inputs and practices to harvest, transport, processing and end use.”

Gaius selected traits to enhance productivity and efficiency (more higher-value product with fewer inputs). These were combined with traits desired by industry and consumers, such as stronger, longer fiber produced with fewer farm chemicals and a lower carbon footprint.

The combined wish list became the foundation for Avalo’s fast-track breeding program. White worked with cotton producers around Lubbock, Texas, where a third of U.S. cotton is grown. For her, the program was both professional and personal.

“My family raised cotton, cattle and peanuts in the area,” she says. “My brother still farms the home place and helped find the early adopters in our program. We offered them an incentive program for following our agronomic practices and reduced seed costs.”

In 2025, cotton producers participating in the program saw results. One variety produced 343% as much cotton by weight as the control. It did so with 75% less fertilizer and no irrigation, qualifying it for a low-carbon cotton premium. At the same time, it improved by two to three grades in quality due to fiber length, elongation, strength and spinnability.

Rather than genetic engineering, Avalo describes its crop development program as AI-guided crop evolution. No non-cotton genes were added, and no CRISPR-based gene editing was used. This eliminates both regulatory approvals and consumer concerns.

In addition to cotton, Gaius has been applied to sugarcane, tomatoes, strawberries and broccoli. The company is also working on rice and natural rubber.

“We follow a similar process with all the crops we work on,” says White. “We start with the broadest genetic base we can.”

The goal is to identify the improvements needed to add value across the entire supply chain, not just among farmers or processors.

“We worked in collaboration with a tomato processor on advanced traits for that crop,” says White. “With sugarcane, we’re working with Coca-Cola. With the broccoli, we worked with a chef in New York who was looking for a fast-growing plant that tastes very good.”

The Gaius-guided effort produced high-quality, nutritious broccoli that matured in 37 days.

“It tastes very good, and the entire plant is edible,” says White. “It has won taste tests by panels of top chefs, and the fast growth means it will avoid some of the late-season diseases. This reduces the use of pesticides, which consumers prefer, and reduces farmer input costs.”

White notes that one vegetable seed company is evaluating the new variety, adding, “We hope to see it move into the seed supply chain within the next 6 to 12 months.”

The benefits that Gaius brings to the supply chain go beyond the crop itself, enhancing overall efficiency. Company CEO Brendon Collins described it as informing every company decision, from predicting labor needs



Beyond livestock farms, the device works for mobile homes, septic tanks, and situations where a steam truck would otherwise be needed.

Solution Thaws Frozen Farm Pipes

Cold winter weather poses a significant challenge for farmers, especially in keeping water accessible to livestock. Frozen hoses and pipes can quickly disrupt daily operations, leaving farmers scrambling to thaw lines and restore water flow.

Monica Paslawski and her husband, Kerri, face this problem firsthand on their farm in northern Alberta.

“When we first moved here, we didn’t know our neighbors, so we had to come up with a solution that would work especially for me as Kerri worked in the oil patch and was away often,” Monica explains. “We had some awful weather, and I needed to keep the water flowing and livestock drinking.”

The couple’s answer was a simple yet effective homemade device they called the “Ice Hero.” It featured an insulated bucket that held 1 1/2 gal. of hot tap water and was equipped with a small pump powered by a cordless Milwaukee battery. A PCB card helped the couple fine-tune the pump’s pulse rate and aperture, maximizing efficiency while minimizing water use.

The setup’s 10-ft. vinyl hose can thaw up to 2 1/2 ft. of frozen pipe in just one minute,

even around bends, using only one liter of water. To prevent the 5/16-in. outer-diameter hose from freezing, the tube and nozzle are stored inside the warm bucket.

What started as a personal fix became a marketable product after Monica noticed others online using risky and complicated methods to solve similar problems.

“I didn’t think much of it, but I saw what others were doing online, and I thought, ‘Our solution is way better. We should market it.’”

The couple did just that and now build the Ice Hero on their farm between Grand Prairie and Dawson Creek, British Columbia. They ship the units directly across North America.

Beyond livestock farms, the device works for mobile homes, septic tanks, and situations where a steam truck would otherwise be needed.

The Ice Hero sells for \$600 CAD plus S&H (battery not included).

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at the farm level to reserving cotton ginning capacity based on genetic gain predictions to determining how many fashion brands to talk to for marketing the coming crop’s yield.

The Avalo system includes both hardware and software. Drones with multispectral cameras feed imagery to Gaius. Gaius selects certain plants because it has inferred their genotypes from the phenotypes captured in the images. When the harvested seeds are sorted for defects, near-infrared hyperspectral imaging identifies metabolites in the seeds. Based on these metabolites, Gaius infers the genetics and sorts the best as they pass through the machine at 20 seeds per second.

Without the drone and seed selection, all the seeds from all the fields would need to be genetically sequenced to identify the desired traits. Collins suggests that with Gaius, only the best may be selected, perhaps a few thousand out of millions.

What this means for farmers down the road is the ability to select seeds for specific growing systems. Instead of adding inputs to control the local environment for seeds that can be grown anywhere, seeds will be selected for a farmer’s environment and end use.

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