Workhorse Water Troughs

Recycled tires might be your water-source solution.

by Becky Mills, field editor

If you're thinking about putting in a rotational grazing system, or you want to fence your cattle out of a creek or pond, then water is on your mind. At Eden Shale Farm, water troughs made from heavy equipment tires are the solution.

Dan Miller, industry coordinator for the Kentucky Beef Network (KBN), which runs the Owenton, Ky., demonstration farm, says, "Their capacity is the best thing about them, the ability to water 12 to 14 head at one time. Cattle don't have to fight or wait in line for water."

Miller also gives the recycled tires high marks for durability. "Their components, their UV resistance, is very good."

Dan Miller, industry coordinator for the Kentucky Beef Network, likes tire water troughs because of their ability to water 12 to 14 head of cattle at one time.

While they've only had the tire troughs for four years, Miller expects them to last.

He says, "An up-front investment continues to pay for a long time."

And yes, he thinks they are even bull-proof.

"That rubber is stout. I'd say they are as close to bull-proof as anything could be."

If you think tire waterers are the right choice for your operation, here are tips to get you started:

Shop right

Unfortunately, your used tractor tires won't work. You'll need to search for heavy equipment tires with stiff sidewalls and more than likely, steel belting. That's what helps make the tires so tough. Look for tires originally from off-road trucks or equipment used in the construction or mining industry.

Size matters

If calves are going to use the troughs, you'll want the tank height no taller than 20 inches (in.). If the trough will be used for mature cattle only, you can go to 36 in. Figure on 2 foot (ft.) of access per animal, and 10% of your herd should be able to get water at one time.

When it comes to capacity, most heavy equipment tires will hold 500 to 800 gallons (gal.) of water. If that sounds like a lot, remember a lactating cow on a hot day can guzzle 25 to 35 gal.

Work-ready

These suckers are heavy. Make sure your tractor or front-end loader and chains can handle at least 1,000 pounds (lb.).

Also be prepared with patience, muscle and extra saw blades. It is a chore to get the sidewall off, especially if it is steel-belted. You'll need a reciprocating saw for the job. You'll want to leave a 4-in. lip, and if the tire is steel-belted, make sure the wire doesn't stick out when the tire gets worn and frayed.

Location, location, location

Put your tank on solid, well-drained soil. At Eden Shale, they place the troughs at the junction of two or more pastures, preferably four, so they can make the most of their investment. In some areas, they put the tire trough in a small paddock with gates to as many as five pastures.

Grade and go

Level the ground and put in a heavy-use pad. At Eden Shale, at the very least they install geotextile fabric with 6 in. of gravel on top. This is for summer pastures where mud typically isn't a problem. In

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their other pastures, they made a concrete apron anywhere from 2 ft. to 8 ft. Steve Higgins, Director of Animal and Environmental Compliance at the University of Kentucky College of Agriculture, Food and Environment says, "You want the entire cow on concrete if possible, and you want it nice and flat so she doesn't have to step down when she leaves the concrete."

Plumbing skills needed

Whether you're using well water, water from a creek or pond, or city water, you're going to need to pipe the water to the trough and install an inflow valve and overflow pipe. If you're using city water, make sure you install a backflow preventer so the folks in town don't have to drink after your cows. You'll probably want a 1-2 in. inflow pipe and a 2-3 in. overflow pipe/drain. Higgins prefers 3-4 in., especially when it is time to drain the trough for cleaning.

"It creates a vortex that can remove solids and reduce cleaning time."

Higgins also recommends rigid pipe. They tried flexible pipe at Eden Shale and ended up with a chronic leak.

He also says, "We run the drain down to the bottom of the hill so we don't have a mud or erosion problem."

Pour it on

When the plumbing is in place, set the tire down with the inflow and outflow pipes in the middle. Pack the soil down around the inner rim, then pour the concrete until it is even with the inner rim. Make sure you pack the concrete between the tire and the soil to create a tight seal, and tamp the concrete under the bead of the tire.

Higgins also says, "I like to pour concrete in the sidewall and slope it down to the drain. Otherwise, there could be 40 to 60 gallons of water trapped in the sidewall."

Cows will be cows

When it comes to the drawbacks of tire waterers, Miller says it is the same as any open trough. "It is hard to keep animals out."

At Eden Shale, they use a board nailed across the top to cover the inflow and outflow pipes, or where the trough is at the junction of two or more pastures, they extend the board fences across the trough.

However, he says, "The best way we've found is to take an old hay ring and measure it, then cut it down and weld it so it fits snug around the tire. That works great."

Cold case

Although the thick rubber in the tire helps insulate the water, it will still freeze when temperatures get down to the low 20s. Higgins says they've had the best luck using a developed spring as a water source, so they can keep a small amount of water flowing through the trough. He is also in the process of developing insulated, portable covers for winter use.

Money matters

While tires can be found for free, unless you buy one from a farm supply dealer who has already removed the sidewall for you, the heavy-use pad, concrete and plumbing supplies add up. Higgins says the cost for the heavy-use pad is about $1.50 per square foot (sq. ft.). With concrete, figure on $3.75 or $4.25 if you use rebar. He estimates the cost of the plumbing supplies at $350.

In Kentucky, cost-share funds may be available through the Kentucky tobacco settlement fund. In other states, check with your local USDA Natural Resources Conservation Service (NRCS), especially if you are using the tire waterers to fence cattle out of ponds and streams.

Details, details

The Eden Shale website has detailed information on tire waterers, including printouts and videos: *www.edenshalefarm.com/tire-waterers.html*

The Kerr Center in Nebraska also has printouts and videos on installing tire waterers: *http://kerrcenter.com/wp-content/uploads/2014/02/new_use_for_old_tires_web.pdf* AJ

Water troughs made from used heavy equipment tires are popular at Eden Shale Farm.