

■ Water Options

Tank size

The minimum livestock storage tank capacity should be enough to meet the minimum water requirements for the number of animals being grazed per day. The water tank should supply adequate water for two to three days using an electric (hard wired) pump or three to seven days using wind or solar type pump.

Tip: Use the following formula when calculating storage requirements:

$$\begin{array}{r} \text{Number} \\ \text{of} \\ \text{Livestock} \end{array} \times \begin{array}{r} \text{Days} \\ \text{storage} \\ \text{required} \end{array} \times \begin{array}{r} \text{Requirements} \\ \text{gallons/head/day} \end{array} = \begin{array}{r} \text{Total} \\ \text{gallons} \\ \text{needed} \end{array}$$

For example:

$$50 \text{ cow/calf pairs} \times 4 \text{ days} \times 13 \text{ gallons/head/day} \\ = 2,600 \text{ gallons}$$

Tip: Use the following formula when calculating tank storage capacity:

$$\text{Capacity} = 23.5 \times r^2 \times d;$$

where r = diameter of tank / 2 and d = depth of tank

For example:

$$\text{Diameter of tank} = 15 \text{ ft, depth} = 2 \text{ ft} \\ 23.5 \times (15 / 2)^2 \times 2 = 2,644 \text{ gallons}$$

Tip: Quick reference:

<u>Tank diameter (in feet)</u>	<u>Capacity @ Depth of 2 feet</u>
8.0	752 gallons
9.0	952 gallons
10.0	1,175 gallons
11.0	1,422 gallons
15.0	2,644 gallons
20.0	4,700 gallons
30.0	10,575 gallons

Tip: The EXPECTED water consumption per head per day (low requirements reflect cooler temperatures and higher requirements reflect high temperatures and dry conditions).

Beef cattle: 6 to 18 gallons/head/day

Dairy cattle: 10 to 30 gallons/head/day

Sheep and goats: 1 to 4 gallons/head/day

Horses: 8 to 12 gallons/head/day

Water quality

Tip: Studies in Montana and Alberta, Canada show a 5-30 percent weight advantage in calves and yearlings that had access to higher quality water in tanks.

Tip: Water sources that provide higher quality water include: Wells, wells with pipelines, and fenced dugouts or dams where water is pumped from the dugout or dam into a tank.