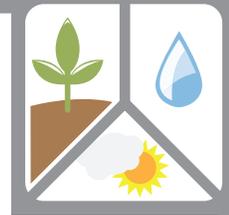


BEEF & WATER USE | fact sheet



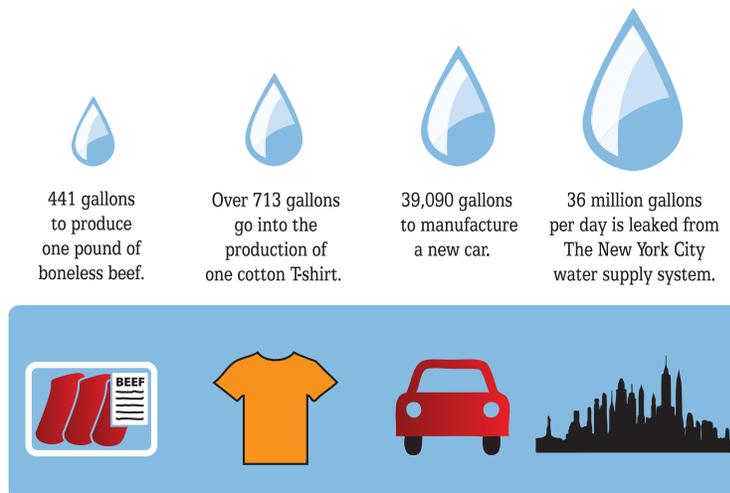
Just like every other food, raising beef requires the use of natural resources like land, water and energy. Today, farmers and ranchers raise more beef using fewer natural resources, including water, than ever before.

Water Usage

Approximately 410 billion gallons of water are used in the United States per day.¹

- Nearly one-half of the water used by Americans is used for production of electrical power (or thermoelectric power generation).¹
 - According to the U.S. Geological Survey, in 2005, about 201 billion gallons of water each day were used to produce electricity.¹
- According to a UC Davis study, it takes just 441 gallons of water to produce one pound of boneless beef—or about 110 gallons for a quarter-pound hamburger.² This study takes into consideration the following:
 - Water the animal drinks
 - Water used to irrigate pasture land that the cattle graze
 - Water used to grow crops the cattle are fed
 - Water used in the processing of the beef

By comparison, the Environmental Protection Agency (EPA) estimates that the average American uses about 100 gallons of water per day.³



- Activities such as taking a bath requires up to 70 gallons of water. A five-minute shower uses 10 to 25 gallons.
- A running toilet can waste up to 200 gallons of water per day.
- Over 713 gallons of water go into the production of one cotton T-shirt.
- The average faucet flows at a rate of 2 gallons per minute.
- The New York City water supply system leaks 36 million gallons per day.
- It takes 39,090 gallons of water to manufacture a new car.
- At 1 drip per second, a faucet can leak 3,000 gallons per year.

1 U.S. Geological Survey, *Estimated Water Use in the United States, 2005*. <http://pubs.usgs.gov/circ/1344/>

2 Beckett, J. L., and J. W. Oltjen. 1993. *Estimation of the water requirement for beef production in the United States*. *J. Anim. Sci.* 71: 818-826.

3 Environmental Protection Agency http://water.epa.gov/learn/kids/drinkingwater/water_trivia_facts.cfm#_ednref12

Continuous Improvement on the Farm and Ranch

The environmental footprint of beef is shrinking, partly due to improvements in raising cattle on grass pasture then finishing them on an optimal, balanced diet of grasses, grains and other forages in a feedyard.

- According to a study published in 2011 in the *Journal of Animal Science*, the amount of water used to raise beef today compared to 30 years ago has been reduced by 12 percent.⁴
- According to previous research, it takes 226 more days for grass-finished cattle to reach market weight than grain-finished cattle. More days on grass may mean greater environmental impact. For example, compared to grass-fed beef, grain-fed beef uses 76 percent less water.⁵

Feedyards with 1,000 or more cattle are subject to the federal Clean Water Act, meaning they must submit an annual report, develop and follow a plan for handling manure and wastewater and must not discharge any pollutants into the waters of the United States. Violators are subject to steep fines.⁶

Many farmers and ranchers are using new technologies and implementing ways to conserve water.

For example:

- Lynn Hovde, Alexander, ND, built a 100-acre-foot pond that catches clean runoff from a feedlot and provides water for irrigation, livestock and waterfowl habitat.
- Scott Stone & family, Woodland, CA, reuse water from a tomato processing plant to irrigate.
- Jim Anderson, Longmont, CO, installed pipelines and concrete ditches to deliver water to fields and prevent seepage loss. His ponds collect runoff and tail-water for reuse in irrigation.

4 J.L. Capper, *The environmental impact of beef production in the United States: 1977 Compared with 2007*. *J ANIM SCI* 2011, 89:4249-4261. <http://jas.fass.org/content/89/12/4249.full.pdf+html>

5 J.L. Capper, *The environmental impact of conventional, natural and grass-fed beef production systems*. *Greenhouse Gases in Animal Agriculture Conference*, 2010.

6 *Environmental Protection Agency- Clean Water Act* <http://www.epa.gov/oecaagct/lcwa.html>