



Water Conservation and Use on Dairy and Livestock Farms

Water Use

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Water availability and water quality have emerged as two important issues in New Hampshire. Although most farms have their own water supply, it doesn't mean farmers don't need to think about water conservation. Growing demand for water from other users within the watershed from which you draw your farm's water may diminish your own future water supply. Everyone benefits from conserving water.

Farms are large water consumers. A primary need on most farms is the animals' water supply. The table below lists the daily water needs of some common farm animals.

Drinking Water Needs of Farm Animals

Source: *Midwest Planning Service #14 - Private Water Systems Handbook*

Type of Animal	Gallon Use per Day
Milking cow	35-45*
Dry cow	20-30
Heifers	10-15
Calves	1-1 1/2 gal/100 lb body weight
Swine: finishing	3-5
Nursery	1
Sow & litter	8
Gestating sow	6
Beef animal	8-12
Llama	3-5
Goat	2-4
Sheep	2
Horse	12
100 Broilers	15-20
100 Chicken layers	15
100 Turkeys	20 gallons/day for birds over 14 weeks of age

*These figures will vary depending upon the size of the animals in question, daily milk production, time of year, and weather conditions.

In addition to animal need, there are other uses of water on farms including: washing equipment, producing value-added products or sanitizing animal areas.

Below is a table that shows estimated water needs for some of these operations.

Water Uses on Farms

Washing Operation	Approximate Water Use
Bulk tank	5% of bulk tank volume
Automatic	50-60 gallons/wash
Manual	30-40 gallons/wash
Milk pipeline ^a	75-125 gallons/wash
Bucket milkers	30-40 gallons/wash
Miscellaneous equipment	30 gallons/day
Milk house floor	10-20 gal/day
Parlor floor (hose down)	50-100 gal/wash

^aVolume increases for long lines in large stanchion barns. Sources: adapted from Midwest Planning Service, 1985; Reinemann and Springman, 1992; Guidelines for Milking Center Wastewater, DPC-15, 1998.



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Water Reserve

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The system itself provides some built-in storage. A 4-inch diameter well casing will hold nearly 2-3 gallons per foot, and a 6-inch casing 1.47 gallons per foot. A water system's pressure tank will hold 20 percent to 30 percent of the tank size and many of these are 30 to 40 gallons. The large fiberglass tanks used in the maple industry can serve as intermediate storage between the well supply and the service area. You will need a secondary pump to transfer water from the storage tank to service areas.

Water Conservation

Don't try to save water by limiting the amount of water your animals drink, but do follow these water conservation practices.

- **Fix leaks.** A leaking pipe joint or dripping faucet contributes to the loss of 10 gallons per unit per day.
- **Pay attention when filling tubs or tanks.** A water tub that is accidentally left to run over while filling with a hose is responsible for the loss of 5 gallons per minute. Install a float with a shut-off.
- **Capture the pre-cooler water that chills down milk.** Allowing it to run down the drain can waste up to 20-30 gallons of water every minute water is running through the cooler.
- **Divert wash water** from a clean-in-place (CIP) system to a storage tank. Then reuse the water through a pump to wash down the parlor.
- **Tune up your wash system** to assure the air injection system is working properly and check the settings to see that you are only using the amount of water needed for each wash cycle.
- **Cow cooling** doesn't need water spraying continuously, cycle the unit off and on in coordination with a fan system.
- **Manually clean floors and alleys before washing down.**
- **Rinse small equipment in a sink or bucket,** rather than with running water.

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