

## Water, the Overlooked Nutrient

If manure is to be transported for land application as a fertilizer or is to be processed, it is important to reduce the manure's water content to minimize transport or processing costs. Several common-sense management practices should be followed to minimize water use. For example, water leaks should be fixed immediately. As for cleaning, barns should be soaked with a foaming agent and subsequently cleaned with a high-pressure washer.

Drinking water can be supplied to pigs via many different routes. Conventional water nipples do not efficiently deliver water to the pigs (it is interesting to observe how much water coming out of a nipple never gets into the pig). Installing cups under the drinkers, although problematic to keep clean, will reduce water usage. Some of the newer water nipples have been designed specifically to reduce water usage, and reductions in water consumption are notable (Brumm et al. 2000).

An even better step is to use feed systems in which water is incorporated. Wet-dry feeders limit the waste of water, while typically improving gain and animal health. Liquid-feeding systems allow for the accurate control of the feed-to-water ratio, providing a well-controlled means for minimizing water waste. For example, Den Brok and van Cuyck (1993) demonstrated that changing the water supply from a drink cup to a feeder with an integrated drink nipple resulted in a 33% decrease in manure production (from 400 gallons to 250 gallons per animal place per year).

It should be noted that concentrated manure may be more difficult to pump, and when changing the watering and feeding system, care should be taken that the manure handling system is changed accordingly.

Reduce water usage by

- Fixing water leaks immediately.
- Using efficient water nipples or cups under drinkers.
- Using wet-dry or liquid feeders.
- Using foaming agents and high-pressure washers for cleaning.

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