



## BUILDINGS

### Water Usage: Tips on saving a precious resource

Water is a vital aspect of pig production, from supplying the pig's basic need of freedom from thirst to maintaining animal health via appropriate cleaning and disinfection. It is also a legal requirement that all pigs have ready access to good quality, clean water.

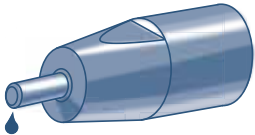
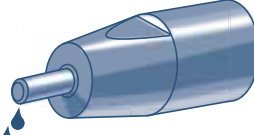



Over the last few years the UK has experienced periods of drought and flooding, both of which can cause water shortage, together with increasing costs for water used. To limit the impact on pig businesses it is vital to carefully monitor this precious resource for improved efficiency and cost control.

#### Leaks

- Repair all known leaks and regularly maintain pipework, fittings etc
- It is good practise to regularly check water meters. Detecting unexpected increases in water consumption aids timely leak detection. A drinker leaking at 90 drips per minute will waste around 29 litres of water per day
- Ensure outdoor pipes are protected against pig or machinery damage, eg physical shielding.

**A leak of one litre per minute raises water consumption by the same amount as increasing a pig herd by 22.5 sows including progeny or 240 finisher places!**

Time for which the leak of one litre per minute occurs	Litres wasted	Cost at 95p per m <sup>3</sup> (1,000 litres)
1 day	1,440	£1.37
1 week	10,080	£9.58
1 month	43,800	£41.61
6 months	262,800	£249.66
<b>1 year</b>	<b>525,600</b>	<b>£499.32</b>

				
One drip per second wastes 4 litres per day (£1.39 per year)*	Drips breaking into stream waste 90 litres per day (£31.21 per year)*	1.5mm (1/16") stream wastes 320 litres per day (£110.96 per year)*	3mm (1/8") stream wastes 985 litres per day (£341.55 per year)*	6mm (1/4") stream wastes 3,500 litres per day (£1,213.63 per year)*

\* At a price of 95p per m<sup>3</sup>

#### Pressure Washing

- Remove solid waste and pre-soak before washing down, as this will reduce the amount of water required
- Use degreasers and detergents to improve washing efficiency
- Ensure all washing equipment has trigger controls to stop flow when not required
- Select washing equipment to suit the application; adjustable nozzles and the use of Turbo nozzles improve efficiency
- Train users to wash methodically
- Using hot water can decrease washing time and therefore water use
- When refurbishing or replacing buildings and equipment consider the benefits of easily cleaned smooth surfaces over rough or porous materials
- Hand washing with brushes and sponges may be more appropriate for some tasks, eg around controllers or behind feeders.

### Boreholes

- Water from boreholes and private supplies should be afforded the same attention to detail as that from mains supplies
- The quality of supplies should be monitored to check for signs of diminishing supply such as increasing quantities of sediment or periods of poor flow
- Contingency plans such as alternative supplies need to be available should failure occur.

### Drinkers

- Mount water nipples correctly to reduce wasted water, they should be height adjustable where the size of pig changes during the stocking period, for example, in wean to finish facilities
- When bite nipples are pointed straight out pigs should drink from shoulder height. When mounted at a 45° angle the nipple should be 5cm (2 inches) above the back of the pig. Mounting lower than this will increase water wastage
- Nipples should be set for the height of the smallest pig in the pen
- Providing a step for smaller pigs can result in a reduction of water waste of 13% and a reduction in manure volume of 10% compared to conventional nipple drinkers
- Cup or bowl drinkers waste less water therefore reducing spillage
- Use the correct size drinker for the age of pig and ensure it is set up appropriately for high or low pressure systems.

### Flow Rates

- Check flow rates regularly (refer to Action for Productivity 16, see references at the end for minimal flow rates and how to check them)
- Flow rates determine time spent at the nipple, water intake and water wastage
- Too little is just as costly as too much when it comes to flow rates.

### Wet/Dry Feeders

- Wet/dry feeders used in grower/finisher accommodation reduce water use by 34% and slurry volume by 20–40% compared with dry feeders and a bowl
- Wet/dry feeders also increase consumption of mash diets compared to dry feeders and a separate water nipple, resulting in a 5% improvement in average daily gain.

### Diet

- Feeding a diet containing excessive protein and/or excessive mineral levels results in increased water usage.

### Weather

- Before winter, drain down and close off all pipe lengths that are not in use; this will help prevent pipes freezing, bursting and overflowing
- Insulate all exposed pipework and fittings. This prevents water getting hot in summer as well as freezing in winter. Larger diameter pipes are less prone to freezing than small ones
- Water requirements for pigs increases in hot weather
- Buildings must be correctly ventilated to ensure pigs are not too hot and to prevent water from being used for cooling
- Water spray cooling systems should be controlled automatically in preference to manually.

### Rainwater Collection

Rainwater collected from roofs and other surfaces can be used for jobs such as rough washing of tractors and machinery. Before using it in pig buildings or for livestock consumption advice should be obtained from a veterinary surgeon as it may present a biosecurity risk. Systems are available for allowing the first flush of rainwater to bypass any collection tanks, minimising the collection of dust and debris. Filters and even purification or treatment may also be required.

### Reference

- BPEX Action for Productivity 16: Water supply
- Waterwise on the Farm, Environment Agency, March 2007
- Code of Recommendations for the Welfare of Livestock: Pigs, Defra, PB 7950, March 2003
- Prairie Swine Centre, Tips for Saving Money, Lee Whittington, Jan 2005
- Water in Swine Production: A Review of its Significance and Conservation Strategies, Martin Nyachoti and Elijah Kiarie, Department of Animal Science, University of Manitoba, Winnipeg
- Water Regulations Guide, WRAS, 2000.



While the Agriculture and Horticulture Development Board (AHDB), operating through its BPEX division, seeks to ensure that the information contained within this document is accurate at the time of printing, no warranty is given in respect thereof and, to the maximum extent permitted by law, the Agriculture and Horticulture Development Board accepts no liability for loss, damage or injury howsoever caused (including that caused by negligence) or suffered directly or indirectly in relation to information and opinions contained in or omitted from this document. © Agriculture and Horticulture Development Board 2012. All rights reserved.

BPEX is a division of the Agriculture and Horticulture Development Board.