



FACT SHEET

WATER SUPPLY TO PIGS

January 2016

We're at that time of the year when pigs can be significantly impacted because of the hot weather. These impacts will be even more severe if water becomes restricted. This article has useful information and is a checklist of 'must dos' to ensure the quantity and quality of water available to your pigs is adequate.

Don't ignore water

A poor water supply can lead to:

- Slower growth rate of pigs,
- More urinary infections in sows,
- Lower feed intake in lactating sows, leading to a loss in body condition.

If pigs are deprived of water altogether (e.g. if water supply is inadvertently turned off), they will die within a few days.

The first signs of water deprivation (so-called 'salt poisoning') are thirst and constipation, followed by intermittent convulsions. Affected animals may wander aimlessly and appear to be blind and deaf. Most die within a few days.

On the other hand, unnecessary wastage of water will lead to a significant increase in production costs.

Overall water usage for a piggery

Research has identified the amount of water required for each class of pig (see table below).

	Litres/day
Weaners	3*
Growers	5
Finishers	6
Dry Sows	11
Lactating Sows	17

*Average. Daily consumption for individual pigs can vary 50% from the average.

These figures are useful for calculating the amount of medication to add to water if using water medication or when sizing water troughs.

Using these figures, you can also estimate the likely minimum requirement for water in a farrow-to-finish piggery (see following table).

	Litres/sow place/day*
Drinking water only*	55 litres/sow/day
Wash down water	20 litres/sow/day
Total water	75 litres/sow/day

*Allowing 50% spillage

Important:

Lactating sows typically require 17 litres of water per day, and up to 25 litres.

With a flow rate of 1.0 litres per minute, and allowing for spillage, the sow will require about 25 minutes to consume 17 litres.

Lactating sows are only prepared to spend a limited amount of time drinking, so a low flow rate will result in them consuming less water than they need and subsequently reduce feed intake.



Delivery of water

Water may be presented to pigs through nipple, bowl or trough waterers. The great thing with a bowl or trough is that you can actually see that water is available; with a nipple drinker you have to climb over the fence and actually check....don't rely on the drips from the nipple to tell you it's working! Most conventional piggeries have nipple drinkers rather than bowls or troughs, usually because bowls or troughs tend to be fouled which means more cleaning and less palatable water for pigs until it's done. The exception to this is water supply for outdoor sows tends to be in troughs. Trough sizes are not important but as a guide, a dimension of 1800mm x 600mm x 200mm provides adequate water storage while still being sufficiently portable when they need to be relocated.

Pigs only tend to spend a short time a day drinking, so the way the water is presented is absolutely crucial. If they don't drink enough water they won't eat sufficient feed, which impacts on the welfare and productivity of the pig. Younger pigs such as weaners tend to be a bit timid in regards to drinkers, especially when first weaned. If they receive a blast from a nipple drinker when they first try to attach, that will put them off drinking. Older pigs tend to be more eager, so a faster rate will mean all pigs will have good access to drinkers. A slower rate will result in aggressive behaviour and the submissive pigs will miss out as the bullies will tend to "hog" the drinkers. A point which is quite critical with the industry moving to group housing of gestating sows.

Lactating sows tend to prefer a good flow rate as they are only prepared to spend a limited amount

of time drinking, so a low flow rate will result in them consuming less water than they require, which in turn affects milk production and weaning weights.

One nipple drinker per 10 pigs is preferable for weaner pigs, whereas one nipple per 12-15 pigs tends to be the norm for growing pigs.

Recommended flow rates for nipple drinkers

	Minimum flow rates (litres/minutes)
Lactating sows	2
Dry sows and boars	1
Growers/ finishers	1
Weaners	0.5

*Chris Richards & Associates 2013

Ensure the nipple drinkers have sufficient flow without being wasteful.

- Measure and record flow rates of all drinkers at least once per year.
- Check water flow from all drinkers between batches of pigs.
- Check water flow, (especially during summer when water is in high demand) and drinkers at end of water line.

How to check flow rates?

You will need:

- Marked water container or 500 ml container
- Timer (watch)
- Record (for future reference)

Fill 500 ml container from the drinker and record the time taken to fill the container.

$$\text{Flow rate (ml/min)} = \frac{500}{\text{Time (sec)}}$$



Water use increases in the summer!

The thermal comfort zone is the temperature range in which the pig feels most comfortable. Within this temperature zone, a healthy pig will drink up 5-11 litres of water per kg of feed they consume. Another rule of thumb is that pigs on self-feeders will consume about 2-2.5 times as much water as feed. But these rough and ready rules relate to healthy pigs in thermoneutral environments. When temperature or relative humidity increases, water consumption will change.

As the air temperature increases, water consumption will also increase, while increases in relative humidity can decrease water consumption. As the temperature rises, water consumption can increase from 15-75%, but total usage may increase 3-4 fold as wastage also increases dramatically during hot weather and it's not only total usage that varies; drinking patterns will also change and these changes are most noticeable in the growing herd.

Dr. Mike Brumm (Brumm Swine Consultancy) showed that during the more temperate times of the year, water consumption for a weaner/grower pig will start to increase early in the morning with consumption steadily increasing and peaking in the early afternoon then steadily decreasing after this time. But during the hotter times of the year, growing pigs begin drinking earlier in the day, with a mid-morning peak followed by a slight decline in the middle of the day with a second consumption peak occurring during the late afternoon to early evening, with water consumption declining into the night. Drinking habits need to be considered when using water medicators or filling troughs.



An example of a nipple drinker

Water medicators

When large numbers of animals have to be treated it is much more effective and less stressful for both the animal and care giver to have a broad based method of providing medication. As soon as a group of pigs becomes sick, they need to be provided medication in a fashion that large numbers of animals can access quickly, and the water supply is the perfect vehicle. Many producers now use "water medicators" when their animals are sick. These are more effective because the decision to medicate can be made and implemented quickly. It allows both the producer and their vet the means to fine-tune the medication routine.



Calculating treatments through drinking water basically uses the same principles as calculating dosages for injectable medication i.e. dosage rates are based on active ingredient mg/kg, the weight of the pig. But when using water based medication systems you also need to take into account the pigs' water intake per day. Because we're talking group medication we generally don't work on kg of live animals but tonnes. You also need to consider the type of water medication system you are using; these can be either an overhead tank header tank system, or a proportioner medication system which relies on either;

- a pump to deliver measured amounts of a stock solution of dissolved medication into a water line at a typical dilution of either 1% (1:100) or 2% (2:100), or
- a more sophisticated proportioner system which is able to dose a product at a set concentration into the water at selected ratios. This is generally achieved with the use of a peristaltic pump.

Many of the pig specialist veterinarians provide their clients with "ready reckoners" to help them calculate the amount of medication required to treat groups of animals. Consult your veterinarian if you're unsure as to how to make the necessary calculations for your particular type of medication system.

When using any water medication system you must be sure to take into account the environmental conditions. During the hotter weather pigs will drink substantially more than they would during the colder times of the year. Also water wastage increases during the hotter weather as pigs tend to

play more with the drinkers. Water medication procedures must be altered to take account of the difference in total consumption and also drinking patterns. It is generally advised that during the hotter weather medicating through water based systems should occur either earlier in the morning and early/late evening.



APL would like to acknowledge that the information provided in this fact sheet is based upon an article written by Dr. Ray King (RHK Consulting Pty Ltd).

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