

Water for Pigs and Poultry

A summary of practices to mitigate water scarcity and manage water salinity

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This summary focuses on climate change awareness that is directly applicable to the pork and poultry industries in southern Western Australia (WA). Due to water scarcity and/or salinity issues, some producers will have a greater need for assistance with water management now, whilst others will need help at points in the future depending on the changing climate. Hence, this article may be immediately useful or may support longer term drought resilience practice change.

Extension toolkit for pork and poultry producers

The Future Drought Fund Extension and Adoption of Drought Resilience Farming Practices Program provided funding in conjunction with Pork Innovation WA (PIWA) to develop a Project that generated an extension toolkit for pork and poultry producers. Members of the pork and poultry industries were instrumental in supporting this project with in-kind contributions.

Factsheets and Education Notes that may be useful

The extension toolkit includes this summary along with Factsheets and Education Notes. It provides a brief overview of the factors that might be considered when making decisions about water, such as the impacts of a drying climate on water quality, combined with best practice water testing and monitoring information, and potential mitigation strategies.

The Factsheets provide specific information for producers including details of water requirements of pigs and poultry, water issues and solutions, as well as an outline for providing water and measuring quality.

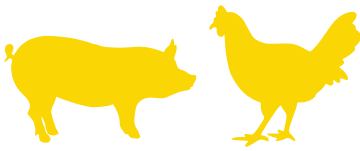
The Education Notes provide supporting material if producers want to know more. They give an overview of water in southern WA with emphasis on supply and demand for pork and poultry production, water quality and water salinity.

The Factsheets and Education Notes are available on-line at Pork Innovation WA: <https://www.piwa.com.au>

Key points for consideration

Some key points from the Factsheets and Education Notes are summarised below:

- Water is required for body thermoregulation, organ maintenance, toxin removal, digestion, as well as transportation and absorption of other nutrients. Animals may also use it as a form of enrichment.
- Depending on the form of the feed, typically, there is a direct relationship between water and feed intake. If water is restricted, feed intake can decrease resulting in production being suboptimal.
- There is likely to be an increase in water consumption when the animal is exposed to excess salt, protein or minerals as well as higher temperatures.
- The suitability of water for pigs and chickens in all production phases depends to an extent on soluble salts present in it.
- The Total Dissolved Solids (TDS) content is often used as a proxy for salinity with the generally recommended ideal level for water fed to pigs being less than 1,000 mg/L, with the acceptable standard for chloride (Cl) being 250 mg/L, and sodium (Na) being 150 mg/L.
- The recommended ideal level of TDS in water fed to chickens is generally thought to be less than 1,500 mg/L, with the acceptable standard for chloride (Cl) being 250 mg/L, and sodium (Na) being 300 mg/L.
- Excess Cl and Na can cause increased water intake, can affect the gut microbiome, and importantly impact the activity of some antibiotics delivered via the water. It can also promote the growth of Enterococci and in poultry, excess sodium can alter eggshell quality.
- Additional elements, such as iron, magnesium and manganese, contribute to TDS in water and may be of concern to some producers.



- Portable on-farm water quality meters for rapid assessment of TDS and pH are readily available.
- A point of note is that the generally acceptable level for TDS may not be a good proxy if the acceptable level of Cl and Na found in water sources fed to pigs and chickens in WA is high.
- As producers have ready access to TDS meters but not Cl and Na testing, it is important that they have a good understanding of TDS in terms of the inorganic salts that comprise their TDS measurement.
- Testing for Cl and Na in water samples can be done by NATA accredited testing and analysis laboratories in WA.
- Water usage in pig and poultry production is also influenced by factors such as facility design, and management.
- With increased uncertainty in environmental conditions, monitoring water quality and usage will be essential.
- Decision makers responsible for water for a pork or poultry enterprise should consult the relevant state and local government regulations to ensure that their water source is permitted under government regulations.

Need to know more

Websites provided by the Department of Water and Environmental Regulation, WA (<https://www.wa.gov.au/organisation/department-of-water-and-environmental-regulation>) and the Department of Primary Industries and Regional Development, Western Australia (<https://www.agric.wa.gov.au>) contain various resources about water and a drying climate.

The document, *Livestock drinking water guidelines*, referred to in articles in this toolkit is a 2023 draft provided by Australian and New Zealand Guidelines for Fresh and Marine Water Quality Australian and New Zealand Governments and Australian state and territory Governments, Canberra. It is updated from time-to-time.

Various industry resources are available through e.g., Pork Innovation WA (PIWA), Australian Pork Limited (APL), The Australasian Pork Research Institute Ltd. (APRIL), The Commercial Egg Producers Association of Western Australia (CEPA), Australian Eggs and AgriFutures Australia (Chicken Meat).

There are also useful resources available from relevant organisations outside Australia. However, it must be noted that elements found in water elsewhere may be different to those found in water in Australia and so recommendations should be considered in light of any differences.

Further information

Factsheet 1 of this series gives more information about water requirements.

Factsheet 2 of this series gives more information on issues associated with water quality.

Factsheet 3 of this series gives more information about providing water and measuring quality.

Education Notes 1, 2 and 3 of this series provide specific information on water scarcity and salinity.

This Summary has been written using information from the Factsheets and Education Notes. Please refer to them for further information and for references. They can be found at the Pork Innovation WA website: <https://www.piwa.com.au>

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