Education Note #1

Water for Pigs and Poultry

Water in southern Western Australia: supply and demand for pork and poultry production

Last updated December 2024

Predictions for a hotter, drier climate affecting water supplies

DPIRD (2021) is just one source that predicts that the climate for southern Western Australia (WA) will continue to change over the decade with average annual temperature increasing by at least 1° C and rainfall declining by more than 5% by 2030. The probability of drought months is also expected to increase thereby producers will experience more months in the year with extremely low soil moisture.

Based on DPIRD (2021), this change in climate is expected to reduce streamflow into dams and groundwater recharge and increase evaporation, so resulting in a decrease in water yield that may be up to 3 times the decline in rainfall. DoW (2014) reiterated that this climate change and how it is affecting water resource security is a critical factor for the future development of water resources in WA.

Implications for pork and poultry production

Pork and poultry production in WA is mostly conducted in the southern region of the State. Therefore, it is expected to be impacted by decreasing water supplies. As explained by Patience (2012), generally, water has not been a limiting factor in global intensive animal production and so despite it being an essential nutrient, relatively little information concerning the topic has been disseminated to producers. Given predictions of decreasing water availability in southern WA, communicating research findings that can assist decision makers better allocate water in their animal enterprises is important. The three Factsheets in this series provide an overview of information related to water management. The three Education Notes in this series will expand on this information.

Water demand for pig production

For pigs, care must be taken to recognise the difference between water requirement and consumption because due to behavioural patterns at water points, some systems can let significant amounts of water go to waste (Schlink *et al.* 2010).

In terms of consumption, Patience (2012) noted that it is difficult to determine a precise quantity because intake can be affected by metabolic, physiological, and behavioural factors as well as ad libitum intake not always being a reflection of need. However, he suggested that subject to these factors, water requirement for growing pigs can be estimated as 2.5 L/kg of feed and for finishing pigs, 2.1 L/kg of feed. Shaw *et al.* (2006) pointed out that daily water intake is significantly correlated with the daily intake of sodium and potassium. For more detail regarding average daily water requirements, including the additional water required for gestating and lactating sows, see APL (2016).

Moreover, Patience (2012) explained that water intake increases when ambient temperatures exceed thermoneutral temperatures to around 4 L/kg of feed. He added that when heat stressed, pigs will play with drinkers, increasing water disappearance and water intake. Further, polydipsia or excessive thirst, can occur due to some pig management actions resulting in excessive water intake.

Water demand for poultry production

As with pork production, there is little published research available on the water intake for poultry. Schlink *et al.* (2010) suggested that when considering water consumption, age of the bird, diet, feed form and crude protein content as well as temperature can all influence water intake. Birds drink up to twice as much water as the feed they consume but intake can be twice this amount again if under stress, particularly heat stress (Nursoy, 2022).

Williams *et al.* (2013) found that due to genetic changes water consumption has increased in broilers over time. Hence, they stress that systems need to be updated to account for these changes.

Challenges for future water supplies

A drying climate has direct and indirect ramifications for the pork and poultry industries. Schlink *et al.* (2010) and Patience (2012) mooted challenges for future water supplies that are still relevant today. To ensure sustainability of these industries, appropriate strategies will need to be developed both on-farm and in the wider environment to maintain water use efficiency and conserve water resources.

This is important because defining the water requirements of pigs and poultry is still challenging and the implications associated with water quality can still be a serious problem for some producers. It can be expected that competition for water used in these industries will increase due to increased variability of water availability and distribution. In turn, the cost of water could be expected to increase to the extent that sound management will be required for animal producers and the wider community.

Requirements for accessing water in the regions

So that water resources are not depleted in the long term, in WA, the Department of Water and Environmental Regulation sets allocation limits to manage the quantity of water that can be abstracted from a resource (DoW, 2014). It applies to all water types but some resources may be exempt. 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.

Further information and references

Factsheet 1 of this series provides information about water requirements.

Factsheet 2 of this series provides information on issues associated with water quality and solutions.

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

Education Notes 2 and 3 focus on water quality and water salinity.

These Factsheets and Education Notes can be found at the Pork Innovation WA website: https://www.piwa.com.au

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This Education Note was written as part of a project jointly funded through the Australian Government's Future Drought Fund and PIWA. In-kind support was provided by CEPA, DPIRD, Milne AgriGroup, PIWA and WAPPA.

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Australian Government
Department of Agriculture, Fisheries and Forestry

Future Drought Fund

PIWA Pork Innovation WA

This project received funding from the Australian Government's Future Drought Fund.