

Water requirements of sheep eating high salt diets



Salty Diets

More water needed!

Livestock eating salty feed such as saltbush need to increase water intake so they can excrete the excess salt.

Sheep drink about four litres of extra water for every 100 grams of salt, or approximately 350 g of saltbush that they consume (see Fig.1). By contrast sheep usually drink 3-4 litres of water per day when eating a non-salty, dry feed, although this can vary considerably with temperature, wind exposure, distance walked to water and lactating sheep.

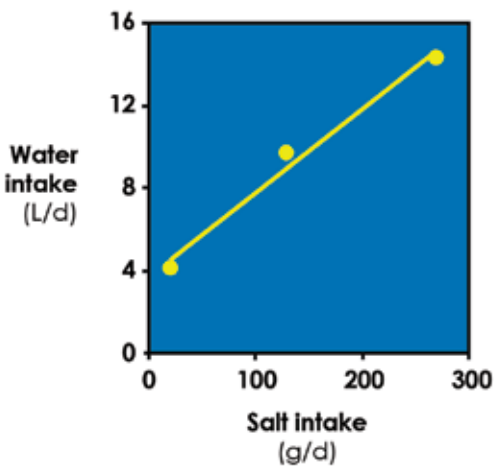


Figure 1: The relationship between water and salt intakes for sheep offered fresh drinking water

It isn't easy to determine the maximum voluntary water intake of sheep and it probably varies from sheep to sheep. Generally, sheep will drink about 12 litres of water per day when grazing a pure saltbush pasture and 8 L/d when grazing a mixed saltbush and dry understorey pasture.

If the supply of drinking water is inadequate, stock will eat less of the high salt feed and lose condition (see CRC Salinity Factsheet 7-2007).

Adequate watering points must be provided for livestock grazing forage with high salt content.

Although water requirements go up quickly, sheep may adapt to a high salt diet to use water more efficiently to excrete salt. CRC Salinity research suggests sheep appear to reduce their water intake per unit of salt intake within several weeks of eating a high salt diet.



Highlights

- > Sheep drink 4 litres more water for every 100 grams of salt they eat
- > The higher the proportion of salt in the sheep's diet, the less it can tolerate in drinking water
- > Sheep may adapt to a salty diet over time and drink less water



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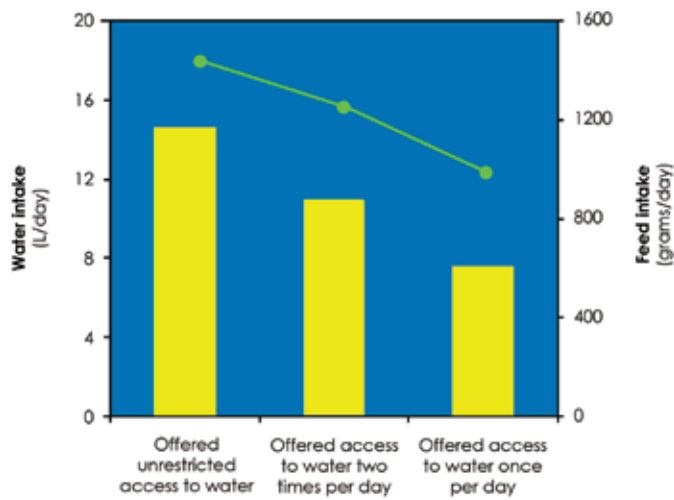


Figure 2: Water (■) and feed (●) intake of sheep, fed a diet containing 15% salt, and offered either unrestricted, twice daily or once daily access to fresh drinking water. Data adapted from (Wilson and Hindley 1968).

Even more water needed!

Not surprisingly, the water requirement of sheep eating high salt feeds will be even greater if the water is salty.

Sheep eating a predominantly saltbush diet will reduce their food intake sharply if their drinking water contains salt. Providing a low-salt supplementary feed with saltbush may make it possible to use drinking water that contains some salt (less than 0.5% sodium chloride (5000ppm) is suggested). It is unknown whether the response for salts other than sodium chloride is similar.

Relationships between water intake and salt intake in sheep offered drinking water containing 0, 0.5 or 1% salt (sodium chloride). Dotted lines represent an estimate of water intake using data adapted from (Wilson 1968).

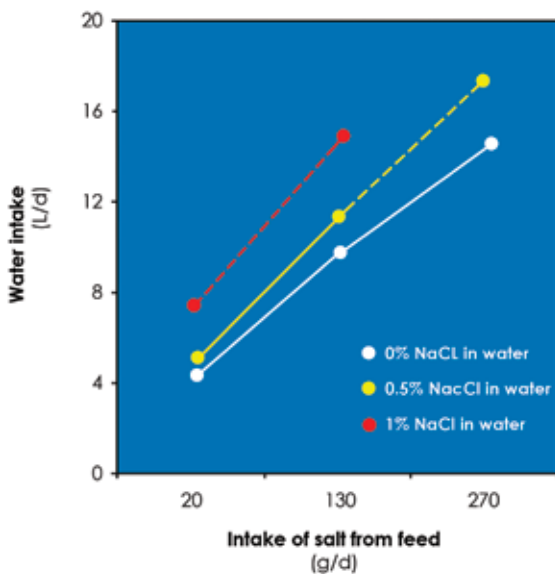


Figure 3: Relationships between water intake and salt intake in sheep offered drinking water containing 0, 0.5 or 1% salt (sodium chloride). Dotted lines represent an estimate of water intake using data adapted from (Wilson 1968).

What it means

Producers should give special attention to managing the water supply of livestock consuming high salt diets, particular during hot weather or later in summer when dams and waterholes are drying up and salinity levels rising.

Sheep grazing saltbush will need to increase their drinking frequency, so increasing the number of watering points in larger paddocks is suggested. A greater walking distance between feed and water may reduce feed and water intake.

FURTHER READING:

Wilson AD (1968) The effect of high salt intake or restricted water intake on diet selection by sheep. *British Journal of Nutrition* 22, 583-588.

Wilson AD, Hindley NL (1968) Effect of restricted access to water on the intake of salty foods by Merino and Border Leicester sheep. *Australian Journal of Agricultural Research* 19, 597-604.

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