Beef Production: The Basics

Water Requirements of Livestock

The first essential nutrient for living organisms is water. Whereas an animal can survive for days without food, a lack of water can cause death within a matter of hours. In the case of cattle and sheep, an animal can stay alive for up to 3 weeks without food, but can live for two or at most three days if not provided with drinking water. High temperatures, as are often experienced during dry periods, increase stress related to a water shortage.

The data in Table 16 provides a guideline to water requirements of livestock based on a number of assumptions, including:

- environmental temperatures are not excessively high
- the water provided is relatively clean
- the water is palatable
- animal activity is average
- dry matter intakes (and consequently growth rates) are average.

In the case of cattle, the European breeds have a slightly higher daily water need than indigenous breeds. European cattle will consume 3 kg of water per kg of dry matter consumed at an environmental temperature of 5°C, and will drink about 8 kg of water per kg dry matter intake at an ambient temperature of 32°C. With sheep, the voluntary consumption of water is two to three times the intake of dry matter. The daily water intake of sheep can be 12 times greater in summer than in winter. The data in Table 16 should therefore be used as a guide only. Local conditions, including temperatures, wind speed and water quality, could change these figures substantially.

Where livestock are fed concentrates, water is contaminated by feed adhering to the muzzles of the animals. Contaminants enhance the growth of microbes in the water, which reduces the palatability of the water and can lead to diseases. For example, some algae growing in water cause photosensitivity in cattle. It is therefore essential that animals have constant access to clean water ensured by regular cleaning of water troughs. For efficient water utilization, drinking troughs must be correctly designed (See previous chapter).

It is recommended that water troughs are cleaned at least once every three days, but in the feedlot situation, to encourage feed intake, daily cleaning is warranted. Water should be tested for salt content as the most common reason for poor palatability of water is a high content of salts.

To ensure that a water shortage does not adversely affect animal performance, livestock must have constant access to water. Drinking troughs must be checked daily and, as a

precaution, a back-up system is important. With a large water reticulation system, the primary reserve should contain at least 8 days supply and the secondary reserve (between the main water reserve and the drinking points) at least a 2-day supply of water. It is useful to keep water carts on standby for emergencies.

Table 16. Water requirements of livestock, excluding waste, and assuming that the water is clean and palatable.

Class of livestock	**Requirement (R/animal/day)**
CATTLE	
Cow	40 to 50
Bull	45 to 55
Dairy cow	5 per Rof milk
Yearling	25 to 40
Calf	15 to 25
SHEEP	
Dry ewe	8
Ewe with lamb	11
Ram	11
Lamb	2 to 4
PIGS	
Dry sow	5 to 9
Lactating sow	18 to 23
Boar	9
Baconer	5 to 9
Piglet (4 to 5 weeks)	4 to 5
POULTRY	R/100 birds/day
Layers	20 to 40
Broilers	10 to 15
Pullets	15 to 20
Chicks	
- up to 2 weeks	8 to 11
- after 2 weeks	8 to 11