

## Importance of Potable Water in Dairy Animals

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### SUMMARY

Water serves as an essential solvent and plays a vital role in regulation of body temperature, lactation, digestion, elimination of waste products of digestion and metabolism, regulation of osmotic pressure, reproduction, transportation of sound, and vision. Poor quality of water has a negative effect on health and productivity. Water consumption is influenced by a number of factors including age, rate of gain, pregnancy, lactation, activity, type of diet, feed intake and environmental temperature. Availability of sufficient quantity of potable water is essential for hygienic milk production.

### INTRODUCTION

It is essential to providing enough quality and quantity of potable water for good livestock husbandry. Water constitute 80% of the blood, helps to regulate body temperature and is important for organ functions such as digestion, removal of waste and the absorption of nutrients. The daily water requirement of livestock varies significantly among animal species. Size of animals and growth stage have a strong influence on the daily water intake. The water consumption rates can be affected by environmental and management factors. Air temperature, relative humidity and the level of animal exertion or production level are examples of these factors. The quality of the water which includes temperature, salinity and impurities affect the taste and odor also have an effect on milk quality and productivity. Burgos *et al.*, 2001 reported that restricting potable water intake may results in rapid but often reversible reductions in feed intake and milk yield The water content of the animal ration may influence its drinking habits. The feed containing relatively high moisture decreases the quantity of drinking water. When there is 10% loss of body water it is fatal to most species of domestic livestock. Water is the primary constituent in the body of livestock and poultry that constitute about 50%-80% of the live weight of the animal. Water serves as an essential solvent and plays a vital role in regulation of body temperature, lactation, digestion, elimination of waste products of digestion and metabolism, regulation of osmotic pressure, reproduction, transportation of sound, and vision according to Okine., 2001. Water is required for regulation of body temperature, growth, reproduction, lactation, digestion, lubrication of joints and eyesight. The livestock water requirements vary significantly depending on the species. Water consumption is influenced by a number of factors, including age, rate of gain, pregnancy, lactation, activity, type of diet, feed intake and environmental temperature. Water serves as a lubricant in joints and in many organs. In cerebrospinal fluid, water acts as a cushion for the brain and brain and spinal tissue reported by Roubicek., 1969. Livestock obtain water to meet their requirements from wells, fountains, surface water and moisture found in feedstuffs.

### Water requirement in dairy cattle

The milk of dairy cow is composed of nearly 87% water. The supply of adequate good quality of water for dairy cattle is extremely important. The water requirement of lactating cattle is closely related to the milk production, moisture content in the feed and environmental factors such as air temperature and humidity. Water constitutes about 87% of milk with approximately 30% of water consumed by dairy cattle being lost through milk. Hence water requirement of dairy cattle are strongly influenced by the stage of production and level of milk production shown the Table below.

Dairy Cattle Type	Milk Production (kg milk/day)	Water Requirement (L/day)	Average Typical Water Use(L/day)
Dairy calves (1-4 months)	-	4.9-13.2	9
Dairy heifers (5-24 months)	-	14.4-36.3	25
Milking cows	13.6	68-83	115

Milking cows	22.7	87-102	115
Milking cows	36.3	114-136	115
Milking cows	45.5	132-155	115
Dry cows	-	34-49	41

## Physiological disorders due to limited water supply

### Dehydration

Access of inadequate or limited supply of potable water, environmental temperatures, stress and illness may result in dehydration. The common signs of dehydration include lethargy, tightening of the skin, weight loss, and drying of mucous membranes and eyes.

Some other symptoms due to dehydration are as follows:-

**Cattle and sheep:-** The eyes will appear sunken and dull. In lactating dairy cows, dehydration results in a near cessation of milk production.

**Horses:-** Dehydration reduces skin elasticity. One way to determine if a horse is dehydrated is by skin folds. Pull the skin over the shoulder and hold a moment. Release and count the seconds until the fold disappears. If the horse is dehydrated, the skin will stand for several seconds.

**Swine:-** Dehydration can result in salt poisoning and often is fatal. Early signs of dehydration in swine include thirst, constipation, skin irritation and lack of appetite which is often followed by nervousness, apparent deafness and blindness.

### Stress

Reduced water consumption can be a sign of unfamiliarity, sickness or other stressors. New animals initially may refuse water due to unfamiliarity of water sources and differences in palatability. The water intake in new livestock should be monitored carefully to make sure they have located the source and are consuming water. With lightweight calves and sheep, be sure the watering source is of adequate height to allow access because animals may not be able to reach the source.

## CONCLUSION

Water is an important nutrient but often neglected. The water requirements of the livestock are affected by many factors including size, productivity, diet and environmental conditions. Good water quality and cleanliness can increase water intake and improve livestock production. Limited access or reduced water consumption can result in dehydration which can be fatal to livestock.

## REFERENCES

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