



**SOUTH DAKOTA
STATE UNIVERSITY**

Department of Animal Science

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Feedlot

Estimating the effects weather, dry matter intake, and body weight on daily water intake in weaned calves.

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Abstract

Water is an essential nutrient and is required for growth, metabolism, lactation, and reproduction. However, water requirements for beef cattle have not been studied extensively since the 1950's. The genetic potential for beef cattle has changed considerably since then. With the change in genetics, beef producers have observed increases in average daily gain and final body weight. The need for updated water requirements for beef cattle has also been exacerbated by global climate variability, drought conditions, and the need for efficient use of water resources. Given the increased productivity of cattle today relative to those of decades ago, increased water requirements are almost certain. Further research must be conducted to determine how those requirements have changed.

Objective

The objective of this study is to determine the effect of weather, dry matter intake, and body weight on the water requirements of weaned calves. In doing so, we will also be able to generate data that can be used to update current water intake requirements in beef cattle. Ultimately, we aim to improve the sustainability of beef production systems by promoting efficient utilization of water resources.

Study description

Two groups of 24 weaned steers have been selected to study the effects of the weather, body weight, and dry matter intake on water intake. The study utilizes the Insentec waterers and feeders at the South Dakota State University Cow-Calf Education and Research Facility to measure intake of each individual's water and dry matter intake. Temperature, humidity, precipitation, wind speed, solar radiation, and air pressure will be recorded at an Mesonet automated weather station in Brookings, SD. The effects of weather and dry matter intake will be incorporated into a model to then predict an equation for daily water intake requirements in beef cattle.

Take home points

This study will quantify the water intake of weaned calves and determine how weather, dry matter intake, and body weight may affect water intake.

Key words: body weight, feed intake, water requirements, weather