

EFFECTS OF HEAT STRESS AND FESCUE TOXICOSIS ON THE IMMUNE SYSTEM
AND OTHER PHYSIOLOGICAL PARAMETERS

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ABSTRACT

Tall fescue is widely used as pasture grass in the United States, and is the most important cool season grass for grazing animals. Certain fungi also grow on these grasses which produce toxins, resulting in reduced feed intake (FI), body weight (BW) and a compromised thermoregulatory system when consumed by animals. Our first study showed that sensitizing rats helped them adapt to the toxin by maintaining a lower core body temperature on subsequent exposure. The short-term study showed an increased pro-inflammatory response to stimulation with bacterial toxins. In the long-term study, the pro-inflammatory response was less severe with adaptation. However, cell mediated immunity was compromised, which makes animals susceptible to invading pathogens. This research identified adaptive responses to fescue toxicosis that highlighted shifts in immune function.