RESEARCH

"Effect of forage inclusion strategy on finishing beef cattle performance and liver abscesses"

FEEDING STRATEGIES TO REDUCE LIVER ABSCESSES

PROJECT NO.: ANH.14.19
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Background: In feedlots, finishing rations usually contain a high proportion of grain and a low proportion of forage. This maximizes efficiency of weight gain and feed conversion in the finishing phase, but also increases the risk of digestive disorders such as acidosis and liver abscesses.

While the exact mechanism of liver abscess formation is unknown, it is hypothesized that prolonged periods of acidosis weakens the gut barrier, allowing the bacteria responsible for liver abscesses to enter the blood stream and colonize the liver. Prevention of liver abscesses is currently achieved through the use of antibiotics like tylosin or chlortetracycline in feed along with feed bunk management practices to reduce acidosis.

It has been well established that increasing the amount of forage in a ration can prevent liver abscess formation; however, this comes at a significant reduction in feed efficiency, growth rate and cost of gain.

Objectives: The objectives of this study are to:

1. Develop feeding strategies that can reduce the need for in-feed antibiotics to control the incidence of liver abscesses
2. Evaluate different forage inclusion strategies in finishing diets on cattle performance, rumen microbiota and fermentation, and liver abscess incidence rates

Implications of the Research: Many projects have examined the impacts of static forage inclusion rates in finishing cattle diets. This project is unique in that it will vary the level of forage fed during the finishing period (i.e. higher forage at the beginning of the finishing period and lower forage at the end and vice-versa), while keeping the overall proportion of forage in the diet the same as a standard finishing diet when averaged over the entire finishing period. The intent is to explore whether varying the timing of higher forage inclusion rates during the finishing period can reduce liver abscess formation without incurring the negative impacts on growth, feed efficiency, and cost of gain that are experienced when a constant high forage inclusion rate is used during finishing.

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