

# Evaluating the effect of two hoof trimming techniques on lesion incidence in dairy cattle

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## Introduction

Lameness is detrimental to the well-being and productivity of dairy cattle. One recommended procedure to prevent lameness is hoof trimming (HT). The research surrounding the efficacy of HT however is currently limited. The objective of this project was to compare the functional HT method (LIT) to more modeling of the weight bearing claw (BIG) on lesion presence at mid-lactation.

## Materials and Methods

This randomized trial was conducted on a convenience sample of 3 farms using free-stall housing, recycled sand bedding and had a regular HT schedule. Professional hoof trimmers were trained on the techniques and to evaluate the presence of a lesion at 100-150DIM. LIT model animals were modeled within 42mm of the abaxial wall and BIG model animals were modeled within 18mm of the abaxial wall. Cows with no hoof lesions were allocated to LIT or BIG model on the week level at their dry off trim. The outcome was a lesion occurring before or one being present at the evaluation. Logistic regression was used to evaluate the effect of trim (BIG/LIT) on the odds of lesion development at the  $P < 0.05$ .

## Results

A total of 382 cows from 1 study farm were used in this preliminary analysis (LIT=201 BIG=190). Cows were examined on average at 114 DIM with an average lactation of 3. The incidence of lesions was 15% and 13% in the LIT and BIG groups respectively. The final logistic regression model included treatment, breed and lactation. BIG decreased the odds of having a lesion by 24% (OR=0.76, CI=0.42-1.38,  $P=0.39$ ). Crossbreds had a 1.94 (CI=1.08-3.63,  $P=0.03$ ) higher odds of a lesion compared to Holsteins. Second lactation and greater was associated with a 1.32 (CI=1.05-1.70,  $P=0.02$ ) higher odds of a lesion.

## Significance

These preliminary results indicate that the BIG technique decreased the odds of lesions at mid-lactation. Though this result was not significant, a large reduction in the odds was observed, which is biologically significant for the animal. The effect this procedure has on locomotion score, culling risk, and milk yield still needs to be determined, to establish which procedure is more efficacious.