Assessing the efficacy of treatment for Digital Dermatitis in organic dairy systems.
Sushil Paudyal and Pablo Pinedo
Department of Animal Science, Colorado State University

INTRODUCTION
- Digital Dermatitis is a major cause of lameness in dairy cows
- Primary consequence of DD infection is pain, which results in reduced animal welfare and significant economic loss.
- There is a need in organic systems for validated treatment options that can be used to treat disease conditions.
- Predisposing factors:
  - Biosecurity, Hygiene, Cow comfort
  - Pathogen associated
  - Treponemes: Spirochaetes
  - Fusobacterium, Campylobacter, Bacteroides

OBJECTIVES
To evaluate the efficacy of treatment of DD using different combinations of copper sulphate, iodine, and honey.

MATERIALS & METHODS
- Cows were identified in the pen with visible pain response in their rear leg.
- Cows with only M1 & M2 lesions were enrolled at the trimming chute.
- Follow up conducted for 70 cows on d3, d12, & d28.
- A subsample of 45 cows were followed till d120.
- Design:
  - Randomized controlled trial
  - Three treatment options
    - Controls (CON)
    - CuSO4 + Iodine (CS-I)
    - Honey + Iodine (HO-I)
- Lesion was bandaged and the bandage was removed at day 3 following treatment.

RESULTS
- Lameness scores decrease with increasing follow up days.
- Lesion scores change to mature from early lesion with increasing follow up days.
- Lesion score in different follow up days
- Distribution of lesion size by treatment
- Cumulative percentages of lesions in different follow up days
- Percentage of lesions in different follow up days

RESULTS contd.
- Effect of treatment on pain response
  - Odds ratio 95% CI
  - HO-I vs CS-I
    - 2.23 0.93-5.35
  - CON vs CS-I
    - 0.15 0.05-0.43
  - CON vs HO-I
    - 0.34 0.13-1.09

CONCLUSIONS
- Non antibiotic treatment options are effective in controlling pain and decreasing lesion size at day 120 after treatment.
- Clinical assessment of animals and evaluation of lesions suggest CuSO4 and iodine combination to be superior than honey iodine combination and Control group.
- Higher odds of getting animal in pain if they were in control group than in treatment group. CS-I group showed least pain.
- Higher odds of cows demonstrating lameness on day 0 of treatment and the odds decreases on subsequent days.

CONTACT
Sushil Paudyal
Department of Animal Science
Colorado State University
Email: Sushil.paudyal@colostate.edu