research

Do hock injuries heal?

Hock injury healing in dairy cows depends on severity and lying surfaces

By Mya Kidson

With more emphasis on animal welfare for Canadian livestock, U of G researchers are looking at how facility conditions and the severity of the lesion affect healing of common leg injuries in cows.

Former PhD student Dr. Amanda Armstrong and Dr. David Kelton, Department of Population Medicine professor and Dairy Farmers of Ontario Chair in Dairy Cattle Health, investigated hock injury healing in dairy cows. They found that, on average, moderate hock injuries—which may include swelling between 1–2.5 cm and a lesion or scab on a bald area—take two months to heal, depending on the cows' surroundings.

The hock is a prominent joint in the hind leg of a cow and is anatomically similar to a human ankle. Hock injuries are often caused by abrasion from housing environments, such as a rough stall base without much bedding on top. However, the cause of more severe injuries is less clear. Some are likely moderate abrasions that have gotten worse over time, while others are likely caused by falls or hard knocks.

"Not much was known about healing of hock injuries," says Kelton. "This study aimed to fill some of the gaps in the literature about hock injury healing."

Involving nearly 600 cows on farms across Ontario and Nova Scotia, the study looked at how moving cows to new more cow-friendly environments affected hock injury healing.

Before moving to a different facility, researchers recorded the number and severity of hock injuries.

Cows were then transitioned into new housing environments with different stall bases, including mattresses, sand, pasture or deep bedded facilities.

Mattresses are composed of rubber crumb encased in a durable fabric cover, which is then covered by straw or shavings. When cows push aside the straw or shavings, and expose the rough fabric cover, something similar to rug burn occurs, which can often cause hock abrasions. These abrasions start as hair loss but can progress to develop scabs and swelling.

Researchers monitored hock healing for 14 weeks by visiting each farm weekly to record the severity of hock injuries.

"We found that hocks do heal, but it depends on the facility environment and the severity of their injuries," says Armstrong. "Hocks healed better and faster when cows are housed on pasture, followed by sand. Healing was the least successful when mattresses were used as the stall base."

Cows with severe hock injuries were the least likely to heal, with some not showing any significant improvement over the three-month follow-up.

"Our findings have addressed some of the gaps in the literature about hock injury healing," says Armstrong. "This study provided us with great insight into practices that could be implemented on farms to promote healing of mild and moderate hock injuries."

Which stall base optimizes hock healing?

Mild hock injuries are often caused by abrasion from housing environments. It's less clear what causes severe hock injuries.

U of G researchers found that hocks do heal, depending on the facility environment and injury severity.

Severe injuries were less likely to heal.

Pasture, packs and sand were better for healing than mattresses.

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For more information, contact Dr. David Kelton, Department of Population Medicine, at dkelton@uoguelph.ca. The study can be accessed in The Atrium.

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