



NRI Research Highlights

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Breakthrough Technology to Detect Lameness Early

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The BouMatic Company developed StepMetrix™ to detect lameness in dairy cattle early to improve animal well-being and improve economic opportunities for farmers.

Current estimates put the economic losses associated with dairy cattle lameness at \$90 per cow every year. Inaccurate lameness diagnoses and a lack of observable symptoms compound the problem. Diagnostic accuracy is subjective and studies show that producers correctly identify only 40-45 percent of lame cattle in their herd. The economic impact of lameness

is significant, but there is also a growing animal welfare component to this issue. By detecting lameness early, it will be possible to treat cattle more effectively and retain the cow in the herd.

Accurate and systematic identification of lame cattle will reduce cases of lameness and decrease economic losses to producers and enhance animal welfare. BouMatic

developed and marketed a groundbreaking technology called StepMetrix™. This technology identifies lameness in dairy cattle before dairy operators can identify lameness visually, and it continuously monitors the soundness or lameness of every cow in a herd. The output from StepMetrix™ monitors the condition of individual cows, cow lots, and an entire herd. This information helps dairy producers manage both the nutritional and medical aspects of hoof health.

THE IMPACT OF STEPMETRIX™

StepMetrix™ is a powerful, real-time diagnostic tool that enables effective dairy lameness management before losses escalate. Seven

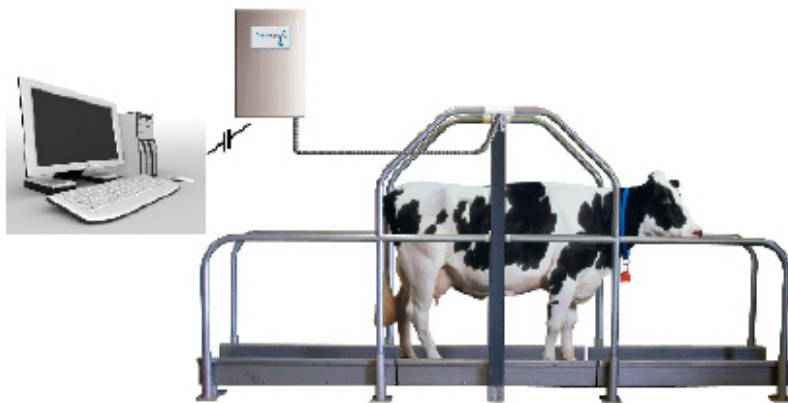


Figure 1. StepMatrix™ System.

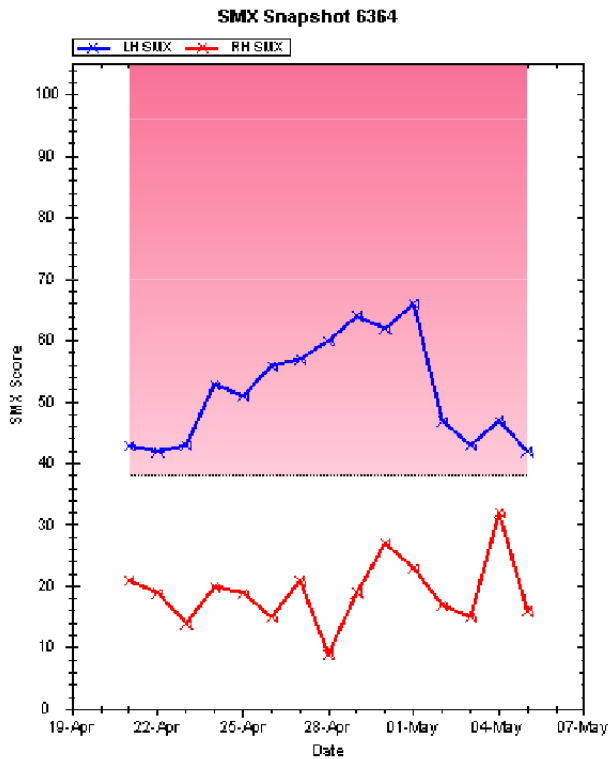


Figure Credit - BouMatic

Figure 2. An SMX™ plot for a lame cow.

Since its launch, StepMetrix™ has won many national and international awards, including the AE50 award given by American Society of Agricultural and Biological Engineers and INNOV's space award, given at the European Expo in France. StepMetrix™ has been recognized as a revolutionary product with the potential to impact the dairy industry in North America and throughout the world.

This new technology may also apply to other species, such as horses, swine, sheep, and laboratory rats and mice. It may also be useful to evaluate the efficacy of clinical procedures and pharmaceutical products. These developments should advance the state of the art of various agricultural and pharmaceutical industries, reduce economic losses associated with lameness to producers, and enhance animal welfare around the world.

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days a week, 365 days a year, StepMetrix™ automatically identifies and monitors the soundness or lameness of every cow in the herd.

In order to detect lameness, cows walk through the StepMetrix™ system after each milking. The system analyzes the forces and duration of each step and assigns an SMX™ score to each hind limb of a cow, SMX™ scores identify and track lameness in individual cows, groups of cows, or an entire herd. StepMetrix™ can score each cow individually even when multiple cows are moving across the system. This allows unimpeded cow traffic flow.



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