



THE GLOBAL STANDARD  
FOR LIVESTOCK DATA

Network. Guidelines. Certification.



# Recording Lameness in Dairy Cattle

A.-M. Christen<sup>1\*</sup>, C. Egger-Danner<sup>2</sup>, N. Capion<sup>3</sup>, N. Charfeddine<sup>4</sup>, J. Cole<sup>5</sup>, G. Cramer<sup>6</sup>, A. Fiedler<sup>7</sup>, T. Fjeldaas<sup>8</sup>, N. Gengler<sup>9</sup>, M. Haskell<sup>10</sup>, B. Heringstad<sup>8</sup>, M. Holzhauser<sup>11</sup>, G. de Jong<sup>12</sup>, A. Koeck<sup>2</sup>, J. Kofler<sup>13</sup>, K. Müller<sup>14</sup>, J. Pryce<sup>15</sup>, Å. M. Sogstad<sup>16</sup>, K. F. Stock<sup>17</sup>, G. Thomas<sup>18</sup> and E. Vasseur<sup>19</sup>

<sup>1</sup>Lactanet, Canada; <sup>2</sup>ZuchtData, Austria; <sup>3</sup>University of Copenhagen, Denmark; <sup>4</sup>CONAFE, Spain; <sup>5</sup>USDA, United-States; <sup>6</sup>University of Minnesota, United-States; <sup>7</sup>Hoof Health Practice, Germany; <sup>8</sup>Norwegian University of Life Sciences, Norway; <sup>9</sup>Gembloux Agro-Bio Tech, Université de Liège, Belgium; <sup>10</sup>Scotland Rural College, Scotland; <sup>11</sup>GD Animal Health, Netherlands; <sup>12</sup>CRV Holding, Netherlands; <sup>13</sup>University of Veterinary Medicine, Austria; <sup>14</sup>Freie Universität, Germany; <sup>15</sup>La Trobe University, Australia; <sup>16</sup>Animalia, Norway; <sup>17</sup>IT Solutions for Animal Production (vit), Germany; <sup>18</sup>Institut de l'Élevage, France; <sup>19</sup>Mc Gill University, Canada.

*\*Presenting author: [amchristen@lactanet.ca](mailto:amchristen@lactanet.ca)*

ICAR – IDF WEBINAR – January 18<sup>th</sup> 2021



THE GLOBAL STANDARD  
FOR LIVESTOCK DATA

## Section 7- Guidelines for Health, Female Fertility, Udder Health, Claw Health Traits, and Lameness in Bovine

Section 7 – Bovine Functional Traits  
Version April, 2020  
File Ref: 07 Functional traits v20.06.docx

Network. Guidelines. Certification.



# ICAR Guidelines for Recording Lameness in Dairy Cattle

## Section 7- Guidelines for Lameness in Dairy Cattle

Section 7 – Bovine Functional Traits: Lameness in Dairy Cattle  
Version April, 2020  
File Ref: 07.5 Functional traits - Lameness in Dairy Cattle.docx

[www.icar.org](http://www.icar.org) / Guidelines / Section 7 / Extract #5



# ICAR Guidelines for Recording Lameness in Dairy Cattle

- Aim: Harmonize trait definition and standardize data recording process
- Describe common lameness scoring methods used worldwide and elaborate the ICAR recommendations for a harmonized scheme
- Recommendations for improved lameness recording used for:
  - Herd claw health management
  - Animal welfare assessment
  - Benchmarking
  - Genetic evaluation



# ICAR Recommended Practices

- **SYSTEM**

- A 5-point scale system considering posture, gait and behavioural criteria

- **HOW**

- On a flat, firm and non-slippery surface, side view of the cows

- Methods proposed for free-stall and tie-stall barns

- **WHEN**

- After milking, in a calm environment

# ICAR Recommended Practices

- **HOW MANY**

- Proportional to pen size or herd size
- Directives for large pasture-based herds

- **HOW OFTEN**

- Every 2 weeks to once a month
  - Every 2 weeks is optimal for detecting new cases
  - Practically, labour and time could require reduced frequency



# ICAR Recommended Practices

- **WHO**

- Dairy farmers, veterinarians, hoof trimmers, dairy advisors and farm employees

- **KNOW-HOW**

- Theoretical instructions and practical basic training

- Annual training of assessors highly recommended

- Without training, dairy farmers will detect mainly the severely lame cows



# A 5-point scale system

Lameness scores		Description	Behavioural criteria
Standing	Walking		
1 - Normal		<p>The cow stands and walks with a flat back posture. Smooth and fluid movement, the gait is normal.</p>	<ul style="list-style-type: none"> <li>• All legs bear weight equally</li> <li>• Joints flex freely</li> <li>• Head carriage remains steady as the animal moves</li> </ul>
			
2 - Mildly lame		<p>The cow stands with a level-back posture but develops an arched-back posture while walking. The ability to move freely not diminished.</p>	<ul style="list-style-type: none"> <li>• All legs bear weight equally</li> <li>• Joints slightly stiff</li> <li>• Head carriage remains steady</li> </ul>
			
3 - Moderately lame		<p>An arched-back posture is evident while both standing and walking. The gait is affected and is best described as short striding with one or more limbs. Capable of locomotion but ability to move freely is compromised.</p>	<ul style="list-style-type: none"> <li>• Slight limp can be discerned in one limb but the lameness is often bilateral</li> <li>• Joints show signs of stiffness but do not impede freedom of movement. Shorter strides</li> <li>• Head carriage remains steady</li> </ul>
			

# A 5-point scale system

Lameness scores		Description	Behavioural criteria
Standing	Walking		
4 - Lamé		<p>An arched-back posture is always evident and gait is best described as one deliberate step at a time. The cow favors one or more limbs/feet. Ability to move freely is obviously diminished.</p>	<ul style="list-style-type: none"> <li>• Reluctant to bear weight on at least one limb but still uses that limb in locomotion</li> <li>• Strides are hesitant and deliberate, and joints are stiff</li> <li>• Head bobs slightly as animal moves in accordance with the sore limb/hoof making contact with the ground</li> </ul>
			
5 – Severely lame		<p>The cow additionally demonstrates an inability or extreme reluctance to bear weight on one or more of her limbs/feet. Ability to move is severely restricted. Must be vigorously encouraged to stand and/or move.</p>	<ul style="list-style-type: none"> <li>• Extreme arched back when standing and walking</li> <li>• Obvious joint stiffness characterized by lack of joint flexion with very hesitant and deliberate strides</li> <li>• One or more strides obviously shortened</li> <li>• Head obviously bobs as sore limb/hoof makes contact with the ground</li> </ul>
			



# ICAR's Proposal for Recording: A combination of:

- **Sprecher system**
  - Widely recognised and used worldwide
  - Easily applied under farm conditions
- **Zinpro First Step<sup>®</sup>**
  - Observation of cows standing and walking (gait)
  - Degree of reluctance of bearing weight on the affected limb(s)
  - Special emphasis on the back line of the cow
- **Code of Practice for the Care and Handling of Dairy Cattle**
  - Behavioural criteria



# Use of Lameness Data

- **At the animal level / Herd management**
  - Early detection of claw problems
  - Prevent escalation of repeated lameness events
  - Avoid chronic cases
  - Should be recorded in the herd management software, mobile solutions for electronic documentation, or on a paper recording sheet



# Use of Lameness Data

- Benchmarking
  - Important tool for improving herd management
- Welfare
  - High frequency of lameness can affect consumers' confidence in farming practices
  - Lameness scoring is commonly used in welfare assessment schemes

# Use of Lameness Data

- Genetics
  - Feet and legs health can be improved by breeding
    - Routine collection of data to central database
  - Genetic correlations between lameness and direct claw health traits

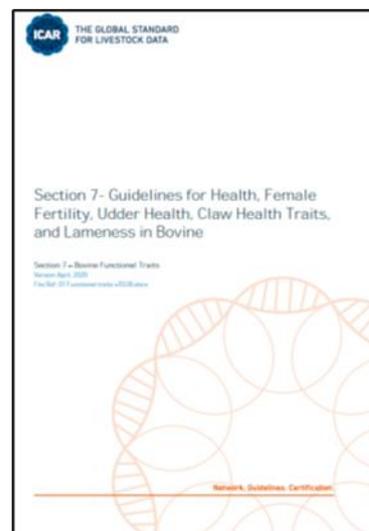




# Acknowledgement

The ICAR Working Group on Functional Traits acknowledges **the excellent cooperation with the international experts** on claw health and expresses its gratitude for their support and proposals for the elaboration of new standards for the recording of claw health information and lameness.

**Thank you for your attention!**



[www.icar.org](http://www.icar.org)  
**Publications /  
Technical Series**