1. PURPOSE

Lameness can lead to other animal welfare concerns, such as low body condition score, as well as poor production performance. This SOP describes the methods to evaluate lameness in Dairy Cattle based on the visual assessment.

2. RESPONSIBILITY

2.1 All students, staff are responsible for observation and reporting abnormalities.
2.2 The veterinarian, Dairy Barn Manager are responsible for the assessment, diagnosis and treatment of lameness.
2.3 Trained technicians or casual staff are responsible for assessing lameness.
2.4 Research staff is responsible for identifying, assessing and reporting abnormalities.

3. GENERAL

3.1 Assessment frequency:

3.1.1 Dairy Barn Staff: Animals are frequently monitored by the Dairy Barn staff while performing daily husbandry tasks.
3.1.2 Research Staff: Animals must be assessed before the start of the research trial, then weekly and at the end of the trial. In instances where there is potential risk of injury, the frequency of monitoring must be increased (e.g. weekly to twice weekly to daily).

3.2 Any observed lameness must be immediately reported to the Lead Technician and Dairy Barn Manager.
3.3 Lameness is assessed using the scoring method (s) described below.
3.4 Record the results of the assessment on the Herd Health Scoring Record (Appendix DC-A-6A) or the DC-A-6C Lameness Scoring Record for Dairy Cows (Appendix DC-A-6C).

4. PROCEDURE

4.1 METHOD 1: STALL LAMENESS SCORING

4.1.1 Encourage the cow to stand. The cow must be standing for at least 3 minutes before the assessment begins (allows for urination/defecation and recovery of balance).
4.1.2 Observe the animal for lameness. Do not score if the animal urinates or defecates during the assessment.

The assessment consists of two parts:

4.1.2.1 Assessment of foot placement – Standing Pose

4.1.2.1.1 Observe the foot position and leg placement of the animal for a full 10 seconds by placing yourself in each of the following three positions:

- Behind (about 2 to 3 feet behind the stall)
- Left side (side-view of both legs)
- Right side

4.1.2.1.2 Record the presence of standing on the Edge, Weight Shift, and Uneven Weight (Rest) indicators for each position. (Refer to Figures 1 and 2)

4.1.2.2 Shifting of the animal from side to side:

4.1.2.2.1 Stand behind the animal with a view of both front and hind feet.
4.1.2.2.2 Shift the animal from side to side, by walking from one side to the other behind the animal and then back; or by tapping her hipbone with your hand to encourage her to move over.
4.1.3 Observe if the UNEVEN MOVEMENT indicator is present (see Table 1). Observe the foot position and placement, and if the EDGE, WEIGHT SHIFT and UNEVEN WEIGHT (REST) indicators are present after movement. Record the results of the assessment in the Herd Health Scoring Record (Appendix DC-A-6A) or the DC-A-6C Lameness Scoring Record for Dairy Cows (Appendix DC-A-6C).

4.1.4 An animal will be scored as “Requires Corrective Action” (obviously/severely lame) if 2 or more indicators are recorded. Record either ‘A’ for acceptable or ‘R’ for requires corrective action.

**Behavioural indicators of lameness**

<table>
<thead>
<tr>
<th>Behavior Indicator</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Standing Post (voluntary movements)</strong></td>
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<tr>
<td><strong>EDGE</strong></td>
<td>Placement of one or more hooves on the edge of the stall while standing stationary. Standing on the edge of a step when stationary, typically to relieve pressure on one part of the claw (Figure 1). This does not refer to when both hind hooves are in the gutter or when cow briefly places her hoof on the edge during a movement/step.</td>
</tr>
<tr>
<td><strong>WEIGHT SHIFT</strong></td>
<td>Regular, repeated shifting of weight from one hoof to another. Repeated shifting is defined as lifting each hind hoof at least twice off the ground (L-R-L-R or vice versa). The hoof must be lifted and returned to the same location and does not include stepping forward or backward</td>
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<tr>
<td><strong>UNEVEN WEIGHT (REST)</strong></td>
<td>Repeated resting of one foot more than the other as indicated by the cow raising a part or the entire hoof off the ground. This does NOT include raising of the hoof to lick or during kicking (Figure 2).</td>
</tr>
<tr>
<td><strong>Cow moved from side to side</strong></td>
<td></td>
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<tr>
<td><strong>UNEVEN MOVEMENT</strong></td>
<td>Uneven weight bearing between hooves when the cow was encouraged to move from side to side. This is demonstrated by greater rapid movement of one hoof relative to the other, or by an evident reluctance to bear weight on a particular foot.</td>
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</table>

*Figure 1: Example of EDGE*  
*Figure 2: Example of REST*
5.1 METHOD 2: GAIT SCORING

5.1.1 Gait score sample cattle:

**Note**

Any cows that will be scored using this method must be approved on a day to day basis by the dairy barn manager or Lead Technician.

5.1.1.1 If cattle have been released from tie-stalls, habituate them to walking by walking up and down a passageway in a calm manner until the cattle walk in a straight line at a steady pace.

5.1.1.2 Observe at least four strides for each animal and record the degree of limping on the Cattle Assessment Record. The gait scoring categories are based on the Gait Scoring System referenced in Appendix F of the Code of Practice, developed by Flower and Weary (2006) (see Table 1).

- Score ‘A’ for acceptable for no limp present (equivalent to Scores of 1 and 2)
- Score ‘M’ for monitor for mild or moderate limp present (equivalent to Score 3)
- Score ‘R’ for requires corrective action for an obvious or severe limp present (equivalent to Scores of 4 and 5)

5.1.1.3 The gait behaviours associated with limping are:

1. Favouring one or more limbs.
2. Uneven weight bearing with weight transfer at walk: an animal free from injury should bear weight evenly over the four limbs.
3. Reluctance to bear weight on a limb: an animal with an injury may not place all her weight on an affected limb and may walk with an uneven, irregular, jerky or awkward step, as if favoring one leg.

5.1.2 Record the results of the assessment in the Herd Health Scoring Record (Appendix DC-A-6A) or the DC-A-6C Lameness Scoring Record for Dairy Cows (Appendix DC-A-6C).

5.1.3 Refer to Gait Scoring System for Dairy Cows on page 4
### Gait Scoring System for Dairy Cows

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
<th>Behavioural Criteria</th>
</tr>
</thead>
</table>
| 1     | Sound       | - Flat back when standing and walking  
          - All legs bear weight equally  
          - Joints flex freely  
          - Head carriage remains steady as the animal moves |
| 2     | Ability to move freely not diminished | - Flat or mildly arched back when standing and walking  
          - All legs bear weight equally  
          - Joints slightly stiff  
          - Head carriage remains steady |
| 3     | Capable of locomotion but ability to move freely is compromised | - Flat or mildly arched back when standing, but obviously arched when walking  
          - Slight limp can be discerned in one limb  
          - Joints show signs of stiffness but do not impede freedom of movement  
          - Head carriage remains steady |
| 4     | Ability to move freely is obviously diminished | - Obvious arched back when standing and walking  
          - Reluctant to bear weight on at least one limb but still uses that limb in locomotion  
          - Strides are hesitant and deliberate and joints are stiff  
          - Head bobs slightly as animal moves in accordance with the sore hoof making contact with the ground |
| 5     | Severely Lame | - Extreme arched back when standing and walking  
          - Inability to bear weight on one or more limbs  
          - Obvious joint stiffness characterized by lack of joint flexion with very hesitant and deliberate strides  
          - One or more strides obviously shortened  
          - Head obviously bobs as sore hoof makes contact with the ground |

Source: Quick Guide to Gait Scoring, proAction, Dairy Farmers of Canada

### 6. REFERENCES


### Document Status and Revision History

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<th>DATE</th>
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<th>NEW VERSION</th>
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<tr>
<td>7-Feb-2018</td>
<td>Revision # 01 (New)</td>
<td>Mac Campus FACC approved</td>
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