

Preventing and Detecting Lameness

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Lameness is a problem or concern for the cow, the dairy producer, and the consumer. Cows which are lame often times have reduced mobility and are less able to access the feedbunk and water trough which may result in lower milk production. Lameness also is less likely to display estrus which can lead to a longer calving interval. All of these problems increase a cow's likelihood of being culled. To curb these problems or concerns, prevention and detection of lameness should be taken into consideration.

Prevention

- **Cleanliness.** Environment plays a pivotal role in lameness. When cows stand in manure, they are exposed to more bacteria. The lower portions of the cow's legs become caked in manure, trapping moisture and bacteria. Bacteria may lead to digital dermatitis (hairy heel warts) and foot rot. High moisture leads to the softening of the hoof wall which increases the incidence of foot ulcers. The cleaner and drier the foot is maintained, the lower the prevalence of foot problems. Frequent scraping reduces the amount of manure in the freestall area.
- **Reduce time in the holding pen.** Cows should spend less than 1 hour standing in the holding pen waiting to be milked at each milking. Times longer than this forces the cows to stand for extended periods of time on concrete in crowded and stressful conditions. If the parlor is not large enough to move the entire herd or group of cows through in an hour window, then smaller groups should be formed so that the amount of time the last cow through the parlor has to wait in the holding pen is reduced. If possible, alternative flooring, such as rubber matting, replaced every 5 years, should be used in the holding pen to reduce the pressure caused from standing directly on concrete.
- **Foot care.** A footbath should be used as a preventative measure and not a treatment. Solutions prevent bacteria on the hoof and leg from gaining access to a wound. Footbath frequency should be determined by limb hygiene and the number of foot problems. The dirtier the limb or the greater the number of foot problems, the more often footbaths should be used. The gold standard solution for footbaths is 5% copper sulfate. Besides routine use of a footbath, all hooves should be trimmed twice a year by a professional hoof trimmer to the proper shape and form. This increases the structural integrity of the hoof and corrects structural errors or irregular hoof wear caused by walking on concrete. Cows that develop lameness between routine hoof trimming visits should have their hooves trimmed at that time to correct the problem.
- **Stall dimensions.** Cows should be encouraged to lie down, thereby taking pressure off of their feet. Ideally, cows should lie down for approximately 11 to 12 hours daily. Improper stall dimensions may deter a cow from using freestalls. This increases the amount of perching and standing on concrete. Concrete enhances the effect of standing because of its rigidity and lack of cushioning for the soles. Concrete tends to result in excessive wear on the foot which leads to increased exposure of the heel to bacteria. Cows which lie down in the stalls provide the hooves time to dry and reduce exposure to bacteria.
- **Heat stress.** Heat stress may cause foot problems. Cows that are experiencing heat stress tend to stand more. This might be in an effort to increase their surface area to dissipate heat. To increase the use of freestalls, fans should be mounted to move air over the resting cows and allow for convective cooling. Sprinklers along the feed bunk that work on a low pressure system

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in addition to the fans allow for convective and evaporative cooling and encourage the cows to visit the feedbunk more often. Comfortable cows spend more time lying down and ruminating. This reduces foot disorders and increases milk production.

- **Overcrowding.** Overcrowding should be avoided as it increases the amount of manure in the freestall area while reducing the amount of available freestalls creating competition for freestalls to lie in and ruminate. Timid cows lose access to the stalls and are forced to stand longer on the concrete which leads to more compression and wear issues. Overcrowding above 120% should be avoided in freestalls.

Detection

- Cows should be watched once a week to observe lameness. Corrective measures should be implemented when cows are mildly and moderately lame before the lameness impacts milk production.

Score	Explanation	What to do?	Normal expected Percent of herd
1	Normal. Cow stands and walks with a straight back. In her stride, she places her feet confidently.	Nothing.	75%
2	Mildly lame. Stands with a straight back but arches as she walks. Her strides are less confident.	Trim when time permits.	15%
3	Moderately lame. Walks and stands with an arched back. Stride is decreased.	Trim hooves to prevent further problems.	9%
4	Severely lame. Arched back when walking and standing. Favors a limb but will bear some weight on it when walking.	Trim hooves to prevent further problems.	0.5%
5	Extremely lame. Extreme arching of back when standing. Cow will be reluctant to move. When she walks, she avoids walking on a specific limb.	Seek professional help immediately for trimming or treatment as soon as possible.	0.5%

Adapted from the Dairy Cattle Locomotion Scores and Descriptions by Zinpro and trimming suggestions by Dr. Ernest Hovingh at Penn State University.