

COW WELFARE ASSESSEMENT – SCORING – Explanation FREESTALL

This document will provide you a brief explanation of the scoring system and will help you to go through the debriefing interview with the producer. More details can be found in the Dairy Code of Practices (DFC 2009, www.nfacc.ca).

SECTION 1 – ACCOMODATION AND HOUSING

1.1. STALL DESIGN

A) LYING TIME

Target
Comfortable dairy cows lie down for 12 h/d

The **average time that a group of cows lie down** each day is an important indicator of stall comfort. When cows are uncomfortable in their stalls, they reduce their lying time which can lead to lameness and claw lesions. Research has shown that comfortable dairy cows should lie down for 12 h/d. Beside the behavioural need for the animal to rest, the difficulties presented by the design of the housing, the problems associated with lameness/injuries. There are other factors that affect the decision of a cow to lie down including time spent at milking (e.g. 2 vs. 3 times a day or long waiting times).

B) HOCK, KNEE AND KNECK INJURIES

Target
Comfortable stalls minimize hock, knee and neck injuries

Condition of the **hocks** can be an important indicator of the abrasiveness of stall bedding and cow comfort. Injury is usually the result of prolonged exposure to an abrasive stall surface. Skin breakage provides an opportunity for infection to occur, which can lead to swelling, discomfort, and possibly lameness.

Knee health is an important indicator of the hardness of the stall floor and cow comfort. Injury is usually the result of prolonged exposure to a hard stall floor leading to swelling and skin breakage which provides an opportunity for infection to occur resulting in discomfort and possibly lameness.

Neck injury is an important indicator of whether the neck rail/chain in the stalls and/or at the feedbunk is at the correct height or length (chain) and that the feed is well within easy reach for the animal. Neck injury is usually the result of prolonged exposure to rubbing or hitting against the neck rail/chain or feedbunk rail/chain.

C) STALL CONFIGURATION

Target
The <u>average</u> stall meets recommendations for the 'heaviest 10% for each of the 8 dimensions' (see Table 1)
100% of cows fitting the <u>average</u> stall for bed length and width
The average <u>multiparous Holstein Canadian cow</u> fits in the <u>average stall</u> for bed length and width

A mature Canadian Holstein (> 700 kg) requires >76 cm of open forward space for lunging motion. Impairing **lunge space** may result in improper lying-down movements that leads to injuries and lameness.

A mature Canadian Holstein cow (> 700 kg) uses >300 cm of **bed length** for freely rising and 183 cm for freely lying. Shorter stalls may result in decreasing lying time, increasing hoof lesions and leg injuries and increasing lameness.

A mature Canadian Holstein cow (> 700 kg) requires 132 cm of **stall width** for resting comfortably in a stall. Narrow stalls reduce lying time and may increase lameness.

Table 1. Recommendations (cm) of 8 stall dimensions for cows of different body weight estimates for Canada (NFACC, 2009), Quebec (CRAAQ, 2008) and Ontario (OMAFRA, 2008)

Stall dimensions (cm)	TARGET				
	455	545	636	727	818
WEIGHT IN KG					
Stall width	112	117	122	127	137
Stall length	244	244	274	305	305
Bed length	163	168	173	178	183
Brisket board height	8	8	10	10	10
Height of upper edge of bottom divide rail above stall surface	28	28	30	30	30
Lunge space	> 76				
Neck rail height	112	117	122	127	132
Distance of neck rail from rear curb of stall	163	168	173	178	183
Curb height	20	20	20	20	20

1.2 SPACE ALLOWANCE

A) STALLS

Target
Stocking density must not exceed 1.2 cow/stall to reduce competition

In free stall barn, **increased stocking density in the pen increases competition** among cows for access to feed, water and stalls.

B) FEEDERS

Target
Linear feed bunk space must be at least 60 cm/cow to reduce competition
Limit competition at the feed bunk by the presence of a barrier at feed bunk
The alley where cows stand to feed should be at least 4.3 m to allow sufficient space for feeding and animal displacement
Height of feed barrier must be high enough to allow <u>all cows</u> to feed comfortably (no risk of neck injuries)

Reduced space per cow at the feedbunk also **increases competition** among cows, reduces bunk attendance times and increases the time spent standing, waiting for access to feed. This might not cause problems for dominant cows but it does directly affect subordinate cows and heifers. Feedbunks with head barriers present (headlocks or diagonal bars) reduce displacements and competitive interactions at the feedbunk during feeding. Wide feed bunk alleys allow cow to pass freely while other cows are eating.

If the feed barrier rail at the feed bunk is not high enough cows will be at risk to neck injury. The height of the feed rail and the frequency of pushing feed up contribute to freedom from neck injury.

1.3 STALL MANAGEMENT

A) STALL BASE/ B) STALL BEDDING

Target
Provide deep-bedded dry stalls

Concrete platforms or hard rubber mats with little bedding (2 cm) reduced lying time below 11 h/d while cows housed on mattress, sand or deep bedded-concrete/rubber may lie

down for 12 h/d. Concrete platforms or hard rubber with little bedding (2 cm) increases swollen knees and hock and knee lesions.

Research into cow comfort has shown that **dry bedding** is important to cows. Wet bedding reduces lying time more than any other feature of stall design. Maintaining clean and dry stalls will improve cow comfort and therefore lying time, keep cows cleaner with cleaner udders and reduce the rate of environmental mastitis.

C) STALL/BEDDING MANAGEMENT

Target
Cows must be kept in an environment with a low level of contamination (1) – <i>evaluation of cow cleanliness</i>
Cows must be kept in an environment with a low level of contamination (2) – <i>evaluation of stall cleanliness</i>
Stalls must be cleaned at every milking
Stalls must be routinely bedded

Cow cleanliness is an important indicator of cow comfort. Frequent and strategic cleaning of the alleys and stalls will reduce the amount of manure on cows and reduce the amount of manure tracked into the stalls. On the other hand, dirty legs point to manure splashing in the alleys, dirty flanks and udders are a result of animals lying in dirty and/or poorly bedded stalls. When the lying area is wet cows reduce their lying time. Cows with large areas of dried caked manure indicate a long-term build up of manure and highlight weaknesses in the cleaning routine of the alleys and/or stalls.

1.4 PEN MANAGEMENT (STANDING AREAS)

Target
Minimize the time cows spend standing on concrete in the pen
Provide slip-resistant flooring in standing areas of the pen
Ensure the floor is cleaned in standing areas of the pen
Flush and/or scrape 2-3 times per day in standing areas of the pen

Cows spending **excessive time on hard surfaces** under wet, manure-contaminated conditions are more likely to have **infectious diseases of the foot**. Rubber flooring increases standing at the feed bunk and time spent eating compared to grooved and slatted concrete. Cows benefit from rubber trackways on slatted floors in transfer alleys to and from the milking parlor.

1.5 MILKING PARLOR, HOLDING PENS AND TRANSFER ALLEYS TO THE MILKING PARLOR

Target
Minimize milking and holding time below 2 h per day
Minimize the time cows spend in concrete in the milking parlor, holding area and alleys to the milking parlor
Flush and/or scrape 2-3 times per day in alleys to the milking parlor

Minimize milking and holding times (e.g. maximum of one hour) such that time away from feed and water and a comfortable stall is kept to a minimum. Cows spending **excessive time on hard surfaces** under wet, manure-contaminated conditions are more likely to have **infectious diseases of the foot**

SECTION 2 – FEED AND WATER

2.1 BODY CONDITION SCORING

Target
No cows should be at a BCS of 2 or lower

Body condition scoring is a technique for assessing the thickness of fat cover of dairy cattle. For dairy cattle the crucial periods are at calving and during early lactation.

Cows should be at an ideal BCS at dry off (3.25 to 3.75) and should be fed to maintain this condition until calving. Post calving (calving to 120 days) cows can be expected to lose 0.5 to 1 unit of BCS. Cows should not lose more than 1 BCS at any time. BCS should remain constant or begin to increase during mid-lactation. During late lactation cows should gain back the BCS lost during the post-calving period. **Producers must take corrective action for animals at a BCS of 2 or lower.**

2.2. NUTRITION AND FEED MANAGEMENT

Target
Provide feed to the cow daily
Keep a consistent feeding schedule
Ensure continuous access to feed

Correct feed management is necessary to ensure good health and welfare. Cows are motivated to perform the same activity at the same time (e.g., feed, rest, ruminate). Cows also prefer to

eat during daylight hours. Increased feeding frequency (at least twice per day) has been found to reduce the amount of total mixed ration (TMR) sorting that occurs and allows subordinate cows to access feed more often. Feed management programs that consider such behavioural needs are likely to reduce stress and aggressive behaviours within a herd, and have a positive impact on herd health and productivity.

SECTION 3 – HEALTH AND WELFARE MANAGEMENT

3.1 LAMENESS

Target
Less than 10 % of obvious or severe lame cows
Routinely observe cows for lameness
Proper procedure to treat lame cows
Keep complete records of lameness

Lameness in dairy cattle is a significant welfare problem indicating pain. Lame cows alter their behavior to reduce bearing weight on the affected limb.

Lameness among dairy cows is widely recognized as one of the most serious (and costly) animal welfare issues affecting dairy cattle. Lameness results in decreased mobility, reduced Dry Matter Intake (DMI), decreased production, impaired reproduction, debilitated cows and early culling. Some causes of lameness are related to genetics and infectious disease but the majority of problems are related to nutrition and the environment that the cow lives in. Prompt recognition, diagnosis and early treatment minimize animal welfare concerns and allow the cow to produce to her potential. **Lame cows must be diagnosed early and either treated, culled or euthanized.**

3.2 CLAW HEALTH/HOOF-TRIMMING

Target
Trim claw approximately two months before calving to prevent and minimize lameness after calving
Keep complete records of hoof-trimming

Claw trimming is an important tool to prevent and treat lameness and should form part of an overall claw-health program.