

The barn, a source of comfort

# A comfy bed please!

Steve Adam, Dairy Production Expert  
and Julie Baillargeon

Research Project and Technology Transfer Coordinator

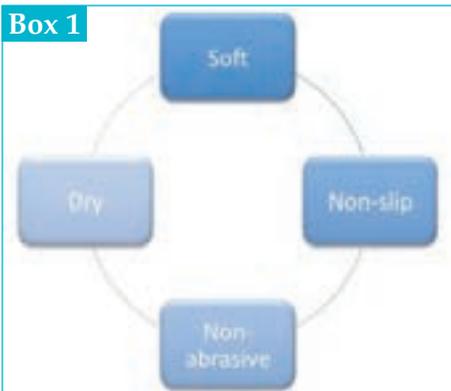
**A cow spends more than half of every day resting. If her bed isn't comfortable enough, she won't be getting adequate rest, and her performance will inevitably be affected.**

In fact, each additional hour of rest, above a minimum of 10 hours, represents an additional 1.7 kg of milk per cow per day in your bulk tank (Grant, 2007). So adequate sleep guarantees you a good milk payment! Furthermore, when cows are getting fewer than 9 hours or more than 15 hours of sleep per day, their risk of culling increases by 64 per cent (Bécotte, 2014). No matter how you do the math, it's well worth while evaluating how much rest your cows are getting in the barn.

## What does "a comfy bed" mean exactly?

Regardless of the type of housing, in order to ensure adequate rest, the resting surface must meet four criteria:

### Box 1



In natural surroundings or out on pasture, cows lie on ground that is covered in vegetation. This natural surface generally meets all of the requirements for ideal resting conditions and lying motions (see Box 1). Hence these are the characteristics we should be trying to replicate in our dairy barns.

There is an ever-expanding selection of mattresses available on the market. Each type has its advantages and disadvantages, in addition to differences in price and durability. Dairy farmers can also choose to forego the use of mattresses

and opt instead for deep-bedded free stalls, sand-bedded stalls, or an open area. With a sufficient layer of clean bedding, all these options afford adequate comfort.

## Is it soft enough?

While it is relatively simple to ensure that the lying surface is dry, non-slip and non-abrasive, it can be a little more complicated to evaluate softness. Until now, the knee test has been the long-recognized measure of softness. This method simply involves dropping to one's knees on the rest surface. Depending on pain tolerance, however, the results can vary significantly from one person to the next.

Valacta recently acquired a Clegg Impact Tester, a device equipped with an accelerometer that measures the absorption of the hammer's impact on the ground. The device displays a digital value between 0 and 100, from soft to hard, to indicate the relative softness of the surface.

Our preliminary testing compared different types of barn surfaces to the surface in a pasture. It was not surprising to find that a moist pasture surface with a good plant covering corresponds to a value of 0. In contrast, a bare concrete surface resulted in a value well over 100.

A variety of new mattresses and mats were also tested. The softest coverings gave values equivalent to the value obtained in the pasture, while the hardest rubber mats had values in the 35-40 range. Many of the mattresses had values between four and ten. We know however that many surfaces tend to harden over time, losing qualities that were deemed acceptable at the time of installation.

## Don't forget the bedding

In any event, whether your mattresses are more or less soft, new or worn, adding bedding is essential and compensates for the shortcomings of all mattress types. And as soft as a mattress may be, you will still need to add bedding to maintain cleanliness and reduce moisture and friction.



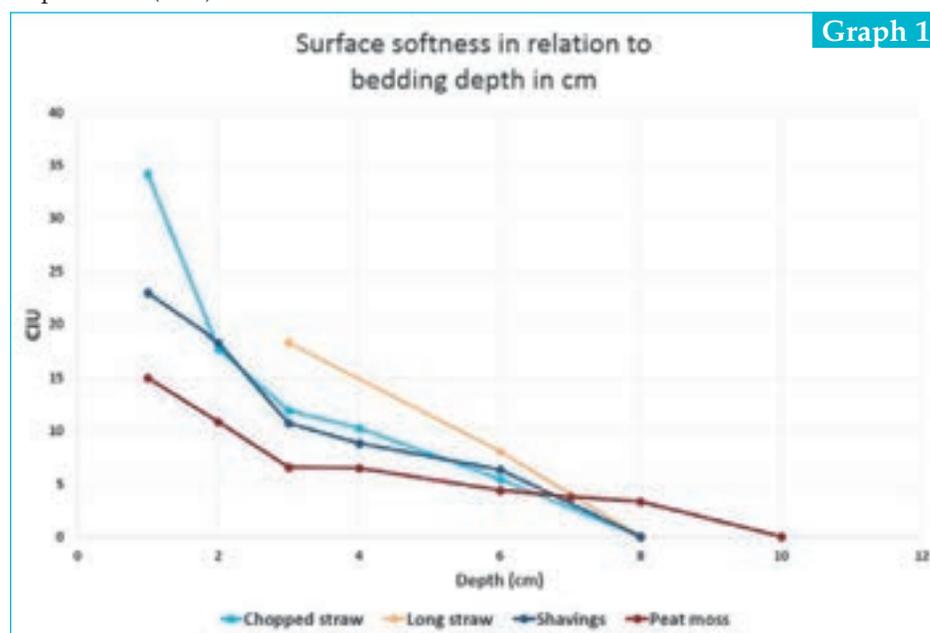
CLEMÉNT BLAIS

## How much bedding?

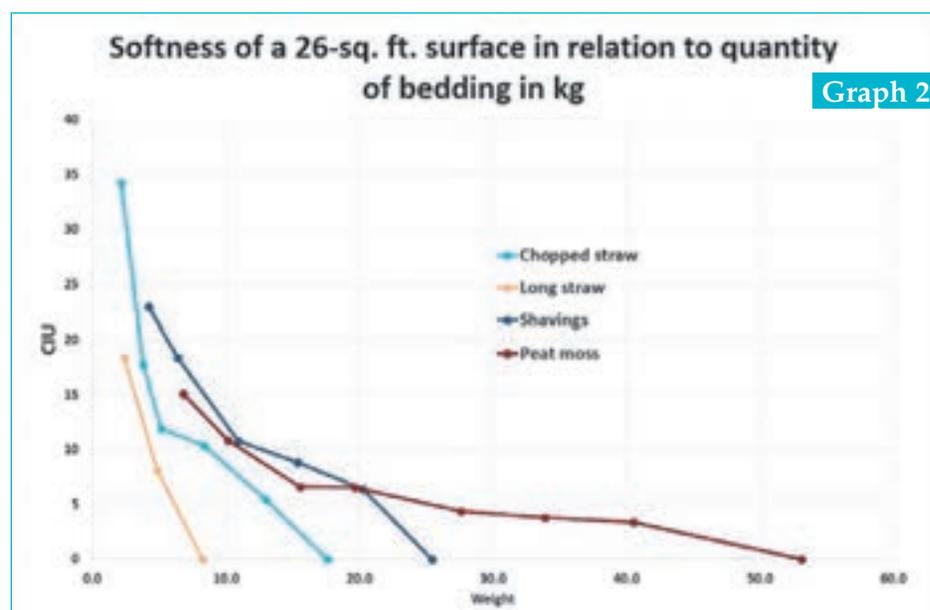
Bedding can be regarded as the equivalent of the plant cover in pastures. Using our Clegg Impact Tester, we conducted a few trials to determine how much bedding would be required to obtain a result comparable to the level of softness found in a pasture.

Long straw, chopped straw, shavings and peat moss were tested. The base surface was a concrete floor.

As shown in Graph 1, an 8-cm (3 in.) layer of straw or shavings gave a Clegg Impact Unit (CIU) of 0.



To determine what an 8-cm layer of bedding corresponds to in kg, we spread a uniform layer of bedding over a standard surface area (52 X 72 sq. ft.) Bedding weight varied from eight to 25 kg for straw and shavings respectively (Graph 2).



So a lack of softness can be remedied by adding bedding to the stall base. A minimum of four centimetres (1.5 in.) of bedding is required to obtain a CIU of eight to ten.

## A comfy bed please!

Whether your cows are housed in tie stalls or free stalls, it is possible to provide them with a soft, dry, comfortable, skid-proof lying surface. Take some time to assess the situation in your barn and look at ways to ensure your cows have a comfortable bed that affords them the luxury of lying down as often and for as long as they wish. Your cows will reward you in milk!