

# Holy Cow! The Legendairy Benefits of Mechanical Brushes

## DID YOU KNOW?

Indoor housing can be in many forms such as tie-stall, free-stall, or loose-housing (4,8).

Over the past decade, there has been a significant increase in demand for livestock, especially cattle(4,8,15). As a result, the industry has shifted to indoor housing and “zero-grazing” systems with both dairy and beef cattle(4,8,15). Most cattle spend at least some part of their life in seasonal indoor housing and some in longer-term, year-round indoor housing(4,8,15).

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How does an increase in indoor farming practices affect cattle?

## Positives and Negatives of Indoor Cattle Housing

Pros

< VS >

Cons

- Indoor housing allows for farming in areas that have a climate too harsh to house cattle outdoors and/or for pasture growth (4,8,15).
- Indoor housing can protect against predation, parasites, and toxic plant exposure (4,8,15).
- Indoor housing can reduce the labor input of farmers (4,8).
- Higher intensity, industrialized farming can allow for high-energy diets helping maximize milk yield (4,8).

- Industrialized indoor housing cattle can be exposed to new sources of stress (eg. loud sounds, confined spaces and restricted movement, unnatural social groupings)(4,8,15,16).
- Indoor housing does not allow natural grazing behaviors in cattle (4,8).
- Living indoors can reduce activity levels in cattle (4,8).
- Decreased space for activity can increase boredom in cattle (4,8,15).
- Natural behaviors (ex. grooming) may be limited in confined housing (4,8).
- Increased stereotypies (unnatural, repeated behaviors) may become more frequent in indoor housing (ex. tongue rolling) (4,8,11).
- Cattle show increased aggressive behavior in indoor housing (ex. increased headbutting) (4,8,11).
- Overall activity level and healthy “play behavior” in cattle statistically drop-in indoor housing (4,8,16).

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How can we improve the wellbeing of cattle who are housed indoors?

Source | Parsnips and Pastries

## [SOLUTION]

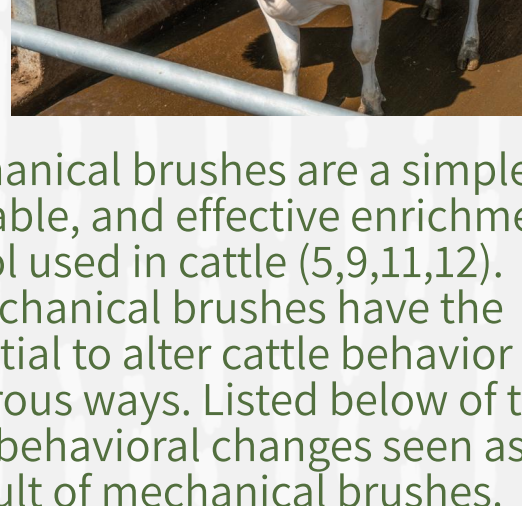
An affordable and effective way to improve cattle wellbeing in an indoor setting is environmental enrichment!

## What is environmental enrichment?

Environmental enrichment refers to any action that changes an animal's surroundings that improve biological functioning (2,7,8,10,13,14). Biological functioning can be defined as increased lifespan and reproduction in cattle (8,13). Simply put, these are artificial changes an animal caretaker can make to an animal living space that positively impacts their wellbeing.



There are many types of environmental enrichment! These include social, occupational, physical, nutritional, and sensory enrichment. To learn more about these check out (1,2,7,8,13,14)!



Mechanical brushes are a simple, affordable, and effective enrichment tool used in cattle (5,9,11,12). Mechanical brushes have the potential to alter cattle behavior in numerous ways. Listed below of the main behavioral changes seen as a result of mechanical brushes.

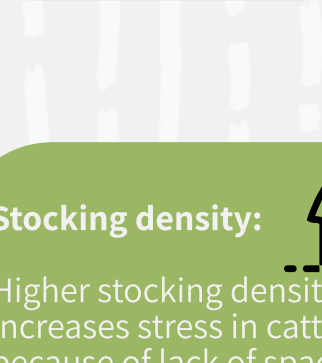


## How do mechanical brushes affect cattle behavior?

In summary, scientific studies have found:

- The use of mechanical brushes can decrease aggressive behaviors (ex. headbutting and kicking) (5,9,11,12).
- Cattle performed fewer stereotypies (ex. tongue rolling and bar licking) when using mechanical brushes (5,9,11,12).
- The use of mechanical brushes is linked to an increase in natural cattle behaviors (ex. grooming and allogrooming) (5,9,11,12).
- Cattle tend to be more active when using mechanical brushes (5,9,11,12).
- Cattle boredom can be decreased by using brushes (5,9,11,12).

Source | Parsnips and Pastries



## How Effective are Mechanical Brushes?

The effectiveness of mechanical brushes is dependent on several environmental factors. Such factors are highlighted below(4,8,9,10)!



### Stocking density:



Higher stocking density increases stress in cattle because of lack of space (10). Brushes tend to be used **more** in high stock densities (10).

### Pasture access/ Housing form:

Long periods of time spent indoors can reduce cattle ability to perform “natural” behaviors (ex. grooming) (4,8). Pasture access is ideal but not always possible(4). Mechanical brushes are used more when cattle do not have access to pastures, as stress tends to be higher in indoor environments (4,8). Therefore, mechanical brushes are **more** effective indoors (4).

### Temperature:



Fluctuation in temperature, especially increases in temperature, can cause stress in cattle (9). This results in **increased** use of mechanical brushes, as a form of stress reduction, compared to periods of constant temperature (9).

### Food distance:



When food is less available, mechanical brushes are used in **lower** frequencies (3,9). This is because increased energy is required to access food and thus, less energy can be allotted to “luxury/leisure” activities such as grooming with a brush (3,9)

### Medical procedures:

Invasive medical procedures (ex. artificial insemination) increased cattle stress (9). **Increased** use of brushes was observed in cattle who underwent frequent treatment/procedures on a regular basis (9).

## [A NOTE]

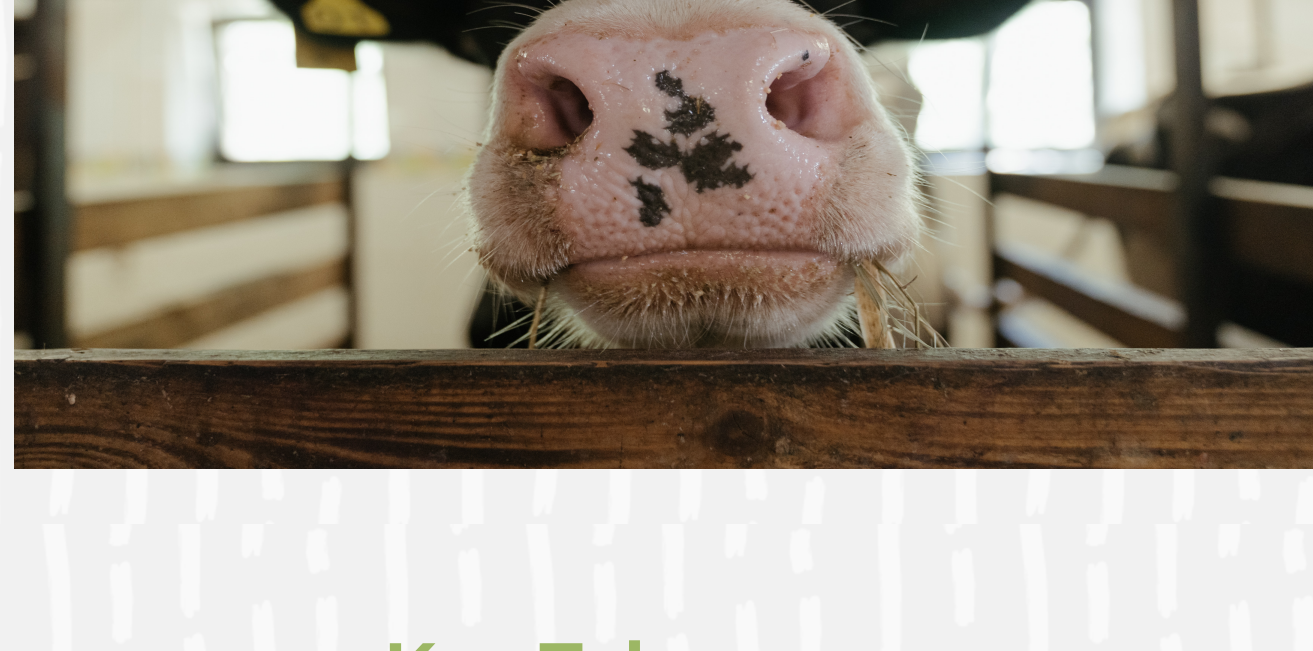
Mechanical brushes are effective in reducing cattle stress and promoting positive behavior (5,9,11,12). However, the level of effectiveness depends on all other farm conditions (5,8,9,10).

### Some questions to ask when wondering if mechanical brushes would be effective for you:

- How many cattle am I housing? What is my stocking density?
- Where will the brush be most accessible for the cattle?
- How many brushes do I need for each cattle to have reasonably easy brush access?
- What aspects of cattle life change on a daily/ weekly basis? Will this affect brush access?
- What factors may be causing stress in my cattle?
- And many other questions particular to your situation!

Every form of cattle housing is different! So the key is to keep in mind that you want a cattle brush to be :

**Available and Easily Accessible (8,13)!**



## Key Takeaways:



The industrialization of the farming industry has presented new challenges for cattle wellbeing (4,8,15). New strategies must be used to create a more “natural” environment for cattle housed indoors(4,8,15).



Environmental enrichment comes in many forms including social, occupational, physical, nutritional, and sensory enrichment (1,2,7,8,13,14).



Mechanical brushes are an inexpensive and effective form of tactile enrichment that can reduce stress in cattle (5,9,11,12).



Environmental conditions of different housing forms influence enrichment effectiveness. The best solution is to find a “best fit” for each scenario (4,5,9,11,12)!

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### Image Citations:

1. Agricow. (n.d). Cattle Brush [Illustration]. <https://www.msschippers.com/agricow-cow-brush-rotating-cattle-brush-1909942.html>