

Brushing up on Dairy Cow Brushes

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Grooming is important!

Grooming has considerable biological importance to cows. The most obvious importance is in reduction of the number of parasites and organisms on the cow's coat. However, there is more to grooming than just the obvious. Grooming is actually a social activity for cows. It allows cows to bond with their herdmates and reduces the impact of the boss cow/submissive cow hierarchy within the herd. Cows also use grooming as a way to cope with stressful situations. A study conducted at Purdue demonstrated increased grooming behavior after periods of restraint. Another study conducted at Iowa State showed that cows that were denied grooming behavior showed more abnormal behavior. Typically, cows use grooming behavior to help deal with stress, but, in confinement systems, grooming objects are not always as available or easily accessed as they would be in pasture systems. Therefore, many producers and dairy equipment companies are looking for ways to improve cow environments through environmental enrichment.

What is enrichment and why should you care about it?

Environmental enrichment is the enhancement of an animal's physical or social environment. It is important to note that true enrichment has a biological importance, so giving a cow a dog toy or a ball isn't really enriching her environment. Environmental enrichment attempts to allow the cow to express her natural behavior and fulfill biological needs. Stress reduces dairy cow well-being; an increasingly important issue among consumers. Also, this increased stress may actually lead to decreased performance. Stress can potentially increase calving intervals, reduced milk production, or increased SCC. Environmental enrichment helps to improve dairy cow well-being by offering them "behavioral opportunities" to reduce stress naturally. One example of an environmental enrichment for dairy cows is dairy cattle brushes.

Types of dairy cow brushes

Stationary brushes

Stationary brushes consist of one horizontal brush and one vertical brush. These are often mounted on posts around the freestall barn or at the ends of the feed alley. Some models have a spring that allows the horizontal brush to move depending on the size of the cow allowing for its use by different sized cows within the herd. Stationary brushes are very low cost, typically under \$100 – 200. A creative producer may even be able to make one of these brushes, creating an even more low cost situation.

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Rotating cow brush

Rotating cow brushes have a brush that rotates on a horizontal arm attached to a motor. The motor also swings left and right, about 45° in each direction. Though the rotating cow brush is more expensive, about \$2000 to \$5000 each, the electrical requirement is low. These brushes access a higher percentage of the cow's back and may be easier for her to use. Rotation is activated when the cows moves the brush and continues until the arm remains horizontal for a period of time. Rotating cow brushes may also be equipped with two rotating brushes, one horizontal and one vertical.



Swinging cow brush

The swinging cow brush is similar to the rotating cow brush but has more range of motion, allowing it to swing back, forth, and side to side. This increased range of motion allows for a somewhat increased grooming area of the cow, though not a lot more than the double rotating brushes. The rotating starts when the cow pushes the brush and continues to rotate until it remains vertical for a period of time. These brushes also have a higher investment cost of about \$2000 to \$5000 but are energy efficient.



Is it worth purchasing?

At this point, it's difficult to assess what the real economic benefits are. Stress levels may be decreased by using the brush. Researchers at the University of Kentucky are trying to determine whether this is true by measuring stress hormones in the blood of cows using the brush. One study conducted in New York found that second lactation cows with access to rotating cow brushes resulted in 2 pound milk production increase

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and fewer incidences of clinical mastitis compared to cows without access to the brushes. Another study conducted in Vancouver, Canada concluded that cows increased time grooming by 226% (1.22 minutes per day to 7.42 minutes per day) and scratching bouts, or events of scratching, by 508% (2.96 visits per day to 9.66 visits per day). So, these brushes may help fulfill the cow's need to groom and may even give them something fun to do!

What are the drawbacks?

Brushes have both benefits and drawbacks, as with any investment. Production benefits may not be high enough in all situations to get a true return on investment through production. Also, the motorized brushes require a higher investment that may take longer to pay off. Additional power and wiring is required for these models and may require more money than just the cost of the brush if the barn is not pre-wired. If the brushes are overstocked (60 cows per brush is recommended) dominant cows may use the brushes more than subordinate cows, not allowing these cows to get the same use. For herds using tail chalk paint (or other rump-mounted heat detection methods), the brushes will likely rub the chalk off or provide an alert for a cow in heat without an actual mounting event.

Conclusions

Interest in environmental enrichment and ways to enhance dairy cow well-being is increasing. Cow brushes are an easy way to help enrich dairy cow environments, and have possible benefits past the fulfillment of natural behaviors. Brush options exist for every producer in every budget from a simple home-made brush to the Swinging Cow Brush.