Dairy cow welfare:

- The major welfare problems for housed dairy cows are lameness, mastitis and in finding feeding and lying places. Most of these problems are associated with the design of the housing system but some are a consequence of poor stockmanship.
- It was found that the incidence of lameness was higher in cows fed on a high protein diet. The incidence of lameness can be reduced by the use of foot baths and by hoof trimming.
- Other welfare problems for dairy cows concern ill-treatment or neglect by the stockman and producers when it comes to milking. The use of an electric dog or of physical force in the collecting yard are not conductive to good welfare or good milk production .

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- **1. Cross-sucking in group housed claves:**
- Young claves who are raised together in group or in individual pens often exhibit an abnormal behaviour called cross-sucking. Cross-sucking is defined as one calf sucking the ear, mouth, scrotum, prepuce **(Fig. 1),** tail, udder area or navel of another calf. The most frequent types of cross-sucking is one animal sucking the ears or mouth of another animal. Two possible reasons for this is that the mouth and ears are the most convenient areas to suck, or that they may still have milk on them. Another area that is most commonly sucked is the scrotal area which is the area where the calf would find the udder on its mother. The frequency of this behaviour is highest shortly after feeding, and is especially prevalent in calves who are bucket fed rather than artificial teat-fed.

- It was found that the cross-sucking is detrimental to the health of the animal. The persistent preputial sucking results in the loss of hair around the muzzle and cases of poor growth among the sucking calves. Furthermore, if the coat of the other calf is sucked significant quantities of the hair may be ingested lead to formation of balls and subsequently lead to digestive problems. If the penis is sucked, urine is often produced and then drunk by the sucking calf. This can lead to liver disorders and to reduced nutrient intake. Another adverse consequence of intersucking is that the part of the calf sucked may become inflamed, damaged and infected.

- With respect to this disorder, both therapeutic and prophylactic measures are widely in accord:
- **A. Separation:**
- Tying calves up for 10 min. after feeding is very effective in stopping the incidence of cross-sucking. Individually penning the animals for at least 4 weeks after birth is another way to inhibit cross-sucking.
- **B. Mechanical devices:**
- This is any type of muzzle which has been designed to interfere with sucking.
- **C. Prevention of urine drinking:**
- Urine drinking can be prevented by the plentiful supply of water from a normal drinker for the calves.

- **D. Dry feeding:**
- This is the practice of feeding concentrate or rough textured hay to the calves shortly after their ingestion of milk so as to distract them from cross-sucking.
- **E. Artificial teat-feeding:**
- Feeding calves their milk via an artificial teat allows them to exhibit a natural sucking behaviour. Artificial teat-feeding helps the calf feel satiated because the sucking stimulus has been shown to increase levels of cholecystokinin (CCK) (a mediator of natural satiety) and insulin over bucket fed animals, making teat fed animals feel more satiated. Another benefit of artificial teat-feeding is that it prolongs the sucking time and hence subdue the urge to suck.

Fig 1. Prepuce sucking in bulls . The sucker reaches under a bull (above) and stimulates it to urinate by liking the prepuce (below)

- **2. Intersucking by adult animals:**
- This behaviour involves a cow or bull sucking milk from the udder of a cow. There are two basic forms in which it appears:
- Sucking milk from the udder of other members of the herd.
- Sucking milk from the cow's own udder.
- In many cases, animals which suck milk from herd mates constantly choose the same one, hence leading to the formation of pairs. Sometimes two animals will mutually suck each other.

- The following factors are considered responsible for milk-sucking:
- a-Hereditary influences.
- b-Deficiency symptoms.
- c-Form of husbandry.
- In contrast with the condition in the young calf, intersucking behaviour in the adult animal is more common in open husbandry system.
- d- Imitation.
- Such intersucking by adult cattle involves the withdrawal of milk from a lactating animal. The loss of milk from intersucking can become significant and frequent sucking by an adult can lead to teat damage, pathological changes and deformation of the udder.

- To date, the following measures help to control intersucking and self-sucking in cows:
- a- Commercial weaners.

- Commercially available weaners may help to control intersucking and self-sucking in cows. A weaning ring, similar to a nose ring for handling bulls, is equipped with a projection attached to half the circumference of the ring, that has sharp points on the outer edge (**Fig., 2**). When the cow attempts to suckle another the appendages on the ring poke the udder, causing the victim to kick and avoid the would be nursery.

b-Frequent and intensive observation of the herd.
c-Isolation of those animals engaged in sucking.
d-A cradle or side stick may be used.
e-Tying-up short or using of yolk fastening.
f-Application of anti-sucking bit which does not interfere with the animal's normal eating (**Fig., 3**).
g-Treat the sucking animal surgically. A 10 cm portion of the tip of the tongue is amputated, but this operation must be objected to for animal welfare reasons. Another operation can be carried out to solve the problem of milk sucking involves the surgical excision of a portion of the ventral lingual mucosa, with or without underlying muscle.
h-A final and ultimate solution to this vice is to cull the offending animal.

- As a prophylactic measure, an increase in roughage rationing which will call for two daily eating periods of at least 3 hours, as well as a long ruminating period, is recommended. Also, because hereditary influences milk-sucking, animals showing this behavioural disorder will not be used for breeding.

se ring weaner for adult cows use to discourage inter sucking among herdmates

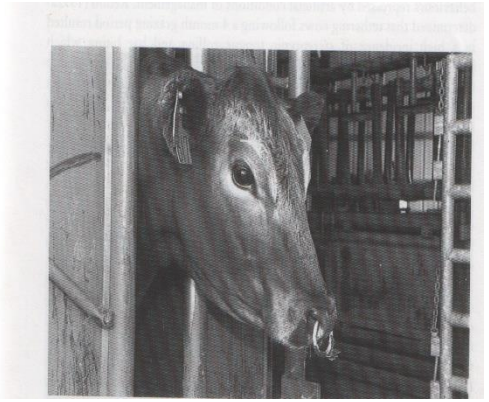
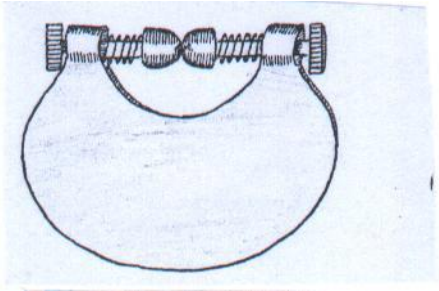
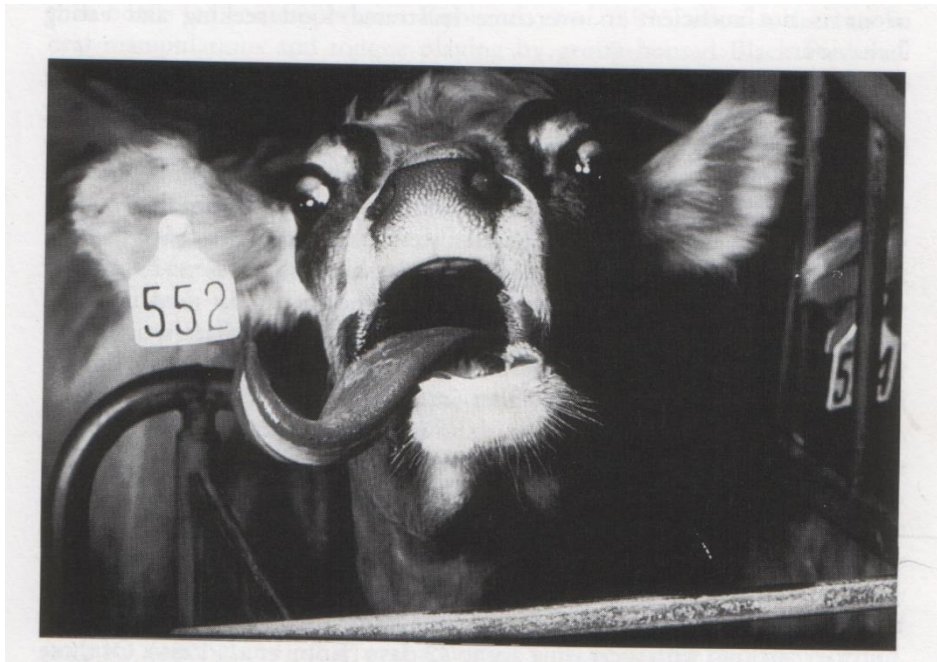


Fig 3 anti sucking bit



- **3. Oral stereotypies (Tongue – rolling and bar-biting):**
- Stereotypies are repeated sequences of a behaviour that have no apparent purpose or benefit. Tongue-rolling means that the tongue is extruded from the mouth and rolled back into the open mouth, while bar-biting means that the animal takes any equipment in its mouth and chews on it for more than 10 s (**Fig. 4**).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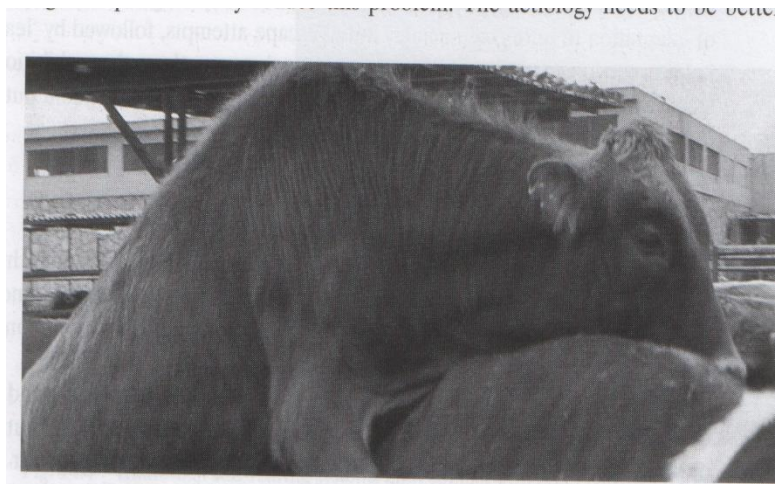
- **Causes:**
- **Housing and feeding:** The more restrictive, the higher the frequency of occurrence. Such high incidence of stereotypies resulted from too little space per animal, rations with no dry forage, difficult access to water and mineral deficiency. Moreover, tongue-rolling was performed more in individual housing than group housing.
- **Age:** Animals of all ages can be affected by this disorder, but it occurs often in younger animals.
- **Breed:** The frequency of the occurrence varies according to breed indicates a hereditary factor. It is very conspicuous in mountain breeds (such as Brown Swiss).

- Control:
- Insertion of a metal ring through the frenulum of the tongue.
- The provision of diet improved by salt mixtures.
- The provision of freedom of movement.
- Isolation of the affected animals to prevent imitation by herd members.
- Tongue rollers should be excluded from breeding.

- **4. The buller-steer syndrome:** (**Fig., 5**)
- The buller-steer syndrome is a behavioural problem among feed lot steers and is characterized by the repeated mounting of a steer (referred to as the buller) by a group of steers (known as the riders).
- The buller-steer syndrome can be found in confined steers in feed lots. As the number of animals in a pen increased, regardless of area per animal, bulling frequency increased. There are several causative factors as contributing to the incidence of bullers. These factors include excessive mud or dusty pen conditions, changes in weather, aggressive social dominance behaviour and the number of bullers increases as the number of animals in the pen increases. There is some odor or pheromones from bullers that make them attractive. Other features that seem to attract interest include the addition of unfamiliar animals, animals with hair coats colored differently than pen mates and the visual stance of the buller steer.

- The buller-steer syndrome has been estimated to cost $70 per head, which can represent significant economic losses in large feed lots. The economic losses are due to the increased activity of the mounting steer and the harassment of the buller steer. Buller-steer syndrome results in physical injury to the mounted steer and decreased weight gain.
- Reducing the number of animals per pen and frequent pen checks for the removal of riders and placement of the buller into a separate hospital pen are recommendations to help reduce bullers.



- **5-Lameness in dairy cattle:**
- Lameness in dairy cows is both a welfare problem and a source of economic loss to the dairy industry. Lameness has been associated with reduced milk production. A lame cow, if left untreated, may decline in body condition because of its inability to feed normally. The expression of estrus may be reduced, thus affecting reproductive performance, which increases the risk of early culling.
- Foot lesions of dairy cattle may result from direct trauma to the feet or from a combination of predisposing factors that have a nutritional and environmental basis.

- **A)Nutritional or Metabolic factors:**
- An inadequate supply of nutrients to the keratin-producing cells leads to damage to the capillary walls and finally a poor horn quality, followed by deterioration of horn. The inciting cause is ruminal acidosis as a result of abnormal rumen fermentation associated with feeding a diet with high level of concentrate compared to a low level of roughage. The high protein diet causes an allergenic-histaminic reaction leading to thrombosis of the laminae and laminitis.

- **B)Environmental factors:**
- Lameness can be caused by lesions of the feet, which may be related to the environment. This includes factors such as the quality of the floor surface. Similarly, the alleys or paths that the cow use to walk from the pasture or housing to the milking parlor can have an important influence. Abrasive concrete floors, particularly new concrete in new barns, some slatted concrete floors, and rough floor surfaces, contribute to traumatic injuries of the sole of dairy cattle. Close confinement, lack of exercises, wet muddy yards and over crowding predispose an increased incidence of lameness.
- **C-Frequency and adequacy of foot trimming:**
- The length of the toe is positively correlated with the lameness score. Trimming of hooves reduces the hardness of the heel bulb center. A reduction in the load bearing of the heels because of trimming of the toe length maintains a soft heel bulb that acts as a cushion, spreading the load evenly and absorbing energy.

- **Control of lameness in dairy cattle:**
- A number of guidelines are recommended
- **1-Floor surface texture :**
- The floor surfaces of the barn and the outside alleyways must be nontraumatic
- **2- Sanitation:**
- Floor surfaces and alleyways must be cleaned as necessary to remove collections of urine, water, and manure that contribute to constant wetting of the feet.
- **3-Clinical examination :**
- All lame cows should be examined and treated as soon as possible. Isolation in a well –bedded hospital pen for several days may be necessary.

- **4-Foot bath:**
- Foot baths containing formaldehyde or copper sulfate solution have often been advocated to control foot disease in cattle.
- **5-Regular foot trimming :**
- The feet of all cows should be examined and trimmed (if necessary) at least once annually
- **6-Balanced ration :**
- The diet of high-producing dairy cows should be balanced with the inclusion of sufficient fiber to minimize rumen fermentation disorders.

Behavioral Restriction

- Captivity often restricts the ability of animals and birds to perform natural behaviours. This constraint affects psychological welfare by preventing motivations from being satisfied .
- Behavioural restriction also harms welfare by thwarting general motivation to seek variety and /or to avoid monotony , thus causing boredom .
- The freedom to express normal behaviour by providing sufficient space , proper facilities and the company of the animal's own kind in its " Five Freedom " prerequisites for good welfare.
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