

Here's a system for evaluating teat condition

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TEAT condition has little effect on somatic cell count or clinical mastitis unless skin cracks or ulcers are present. Teat skin protects the deep teat tissues from infections. When damaged, the skin may allow microorganisms to invade the teat tissue, resulting in necrosis, fibrosis, scarring and sloughing. These conditions reduce milkability and increase culling.

Veterinarians, dairy farmers and other industry people need a simple, standardized method for evaluating changes that occur to teats of lactating and dry cows.

People have used various evaluation systems to describe teat conditions. The evaluation system described here attempts to put into descriptive terms the essential elements of teat end and teat skin condition.

Teats can be evaluated premilking (before or after stimulation), postmilking or both. The system includes teat shape, teat end shape, teat length and teat skin condition.

Teat ends are scored on a 1 to 4 scale for changes which may occur, including callous formation of the annular ring, roughness, hyperkeratosis and radial cracking. A different category is listed for teat end lesions (Score 5).

Letters or numbers are used for the different categories to allow quick evaluation of a single cow and provide a uniform way for comparing herds in different geographic areas (see worksheet terms).

The scoring system does not attempt to ex-

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plain the causative agent of the teat changes. In many cases, changes to teats are caused by a number of factors.

Chart I describes the responses using clinical signs and location on the teat. Chart II describes factors which can affect teats and what type of response those factors elicit. In order to keep the form usable, a limited number of statements were made concerning the responses.

Evaluators must be careful to avoid mistaking predrip, postdrip or milk residue on teats after milking as some type of lesion.

After stimulation but before milking . . .

Experience has shown that teat evaluations after premilking stimulation, but before the milking unit is applied, will show best any changes due to chronic conditions.

Evaluation just after the milking unit is removed may show short-term changes which are transient due to the machine milking process. Because teat length changes after stimulation and milking, the time of day and when last milked and whether or not teats have been stimulated should be noted.

The four teats on an individual cow may have different evaluations.

Teat length and shape affect hyperkeratosis formation. Pointed teats have more hyperkeratosis than rounded ones; flat teats have the least hyperkeratosis.

Dutch research also indicates that long teats have more hyperkeratosis than short ones, and front teats have more hyperkeratosis than do rear teats.

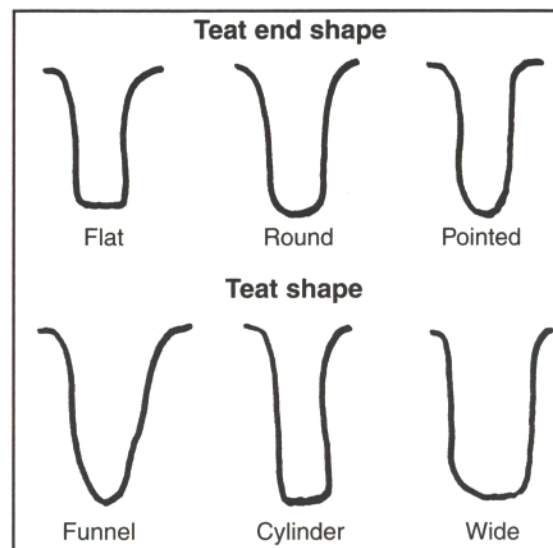
Both U.S. and Dutch research results show that high-yielding cows have significantly worse teat ends than low yielders.

Changes in teat skin often are related to cold weather, wind chill or incorrect use of chemicals.

Using teat scoring to make a diagnosis should be done with caution.

All factors which affect the teats should be considered in a herd evaluation. A minimum of 20 cows or 20 percent of the herd should be examined when evaluating teats.

Weather changes are the most frequent reason that teat conditions change. Hyperkeratosis alone is not diagnostic of milking equipment malfunction or necessarily associated with increased infection rate.



Teat end classification scores

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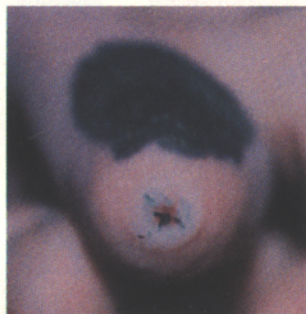
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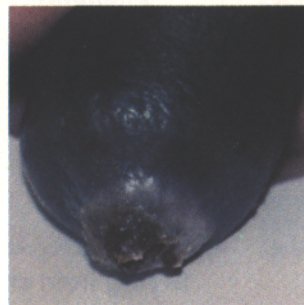
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Worksheet terms**Instructions for teat anatomy, skin condition and teat end evaluation****Teat-end shape****Shape Description**

- F **Flat** — flat surface on bottom
- R **Round** — half moon shaped on bottom
- P **Pointed** — pointed toward the distal end

Teat shape**Shape Description**

- FU **Funnel** — cone shaped, pointed toward teat end
- C **Cylinder** — same diameter top and bottom
- W **Wide** — larger than inflation mouth piece

Skin condition**Condition and description**

- N **Normal** — smooth, healthy skin
- D **Dry** — skin with no cracking
- R **Rough** — skin with dryness and cracking

Length**Length and description**

- S **Short** — less than 2 inches
- A **Average** — between 2 and 3 inches
- L **Long** — longer than 3 inches

Teat end classification score**Score Description**

- 1 Smooth bottom, no or smooth callous, no lesions
- 2 Raised callous ring with slight roughness
- 3 Rough callous with hyperkeratosis
- 4 Very rough callous with hyperkeratosis and radial cracking

Teat end lesion**Score Description**

- 5 Describe lesion — open skin, hemorrhage, trauma or any abnormal condition (L = lesion)

Chart I**Types of teat skin responses**

Response	Clinical signs and location
Acute trauma	lacerations and bruising may occur anywhere on teat
Breaks in surface and scabbing	teat barrel and teat end; lesions will vary in appearance to some extent due to cause
Congestion	short-term edema and petechia hemorrhage
Continuing edema	edema that is present for several days, usually fresh cows or first-calf heifers
Drying	teat barrel and teat end
Fibrosis	may occur near teat end and restrict milk flow
Keratin response	hyperkeratosis can be both smooth and rough and in varying degrees
Necrosis	sloughing of skin, usually in first-calf heifers with mammillitis
Pustules	small pus pockets on teat skin
Vesicles	blisters on teat skin

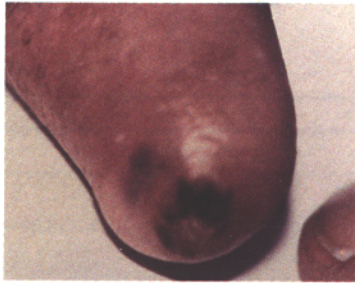
Chart II**Types of teat end and teat skin response to various factors**

Factor	Response
Acute trauma	- lacerations — mashed or cut by hooves or debris - breaks in surface and scabbing — a result of superficial trauma - bruising — stall trauma or "step on" - necrosis — related to loss of blood supply - fibrosis — result of healing of injuries

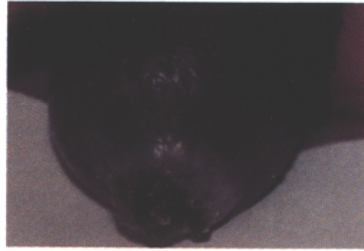
Chart II (continued)

Bacterial infections	- pustules — may be vesicles, not common - necrosis — believed to be from a staphylococcal toxin and cold weather
Chemicals	- drying — usually involves several cows up to the entire herd - breaks in surface and scabbing — long-term use of chemicals - necrosis — usually involves a chemical mixup
Milking equipment	- congestion — transient during milking - short-term edema — related to vacuum level, overmilking, length of rest phase - petechial hemorrhage — high vacuum, poor massage, overmilking, wide bore liners - hyperkeratosis — related to cyclic liner pressure, vacuum level, overmilking, liner type, duration of milking
Virus infections	- congestion — early mammillitis, skin feels leathery - vesicles — seen in early mammillitis - breaks in surface and scabbing (end or barrel) — associated with mammillitis which may result in causing necrosis and fibrosis
Weather: wind	- drying — late fall or early winter
sunburn	- erythema — more common on pastured cattle in the south - breaks in the surface and scabbing — not common
cold	- drying — more common with wind chill - breaks in surface and scabbing - necrosis from freezing — more common when associated with edema - scarring — from chronic weather problems - fibrosis — related to severe teat damage

Types of teat skin and teat end response



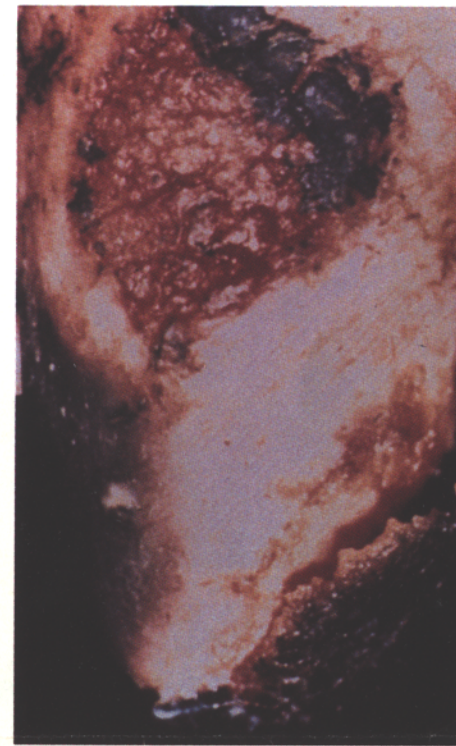
Edema and congestion



Hyperkeratosis



Pustules from pox virus



Mammillitis



Vesicles



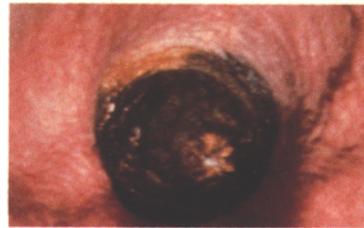
Chapping and drying



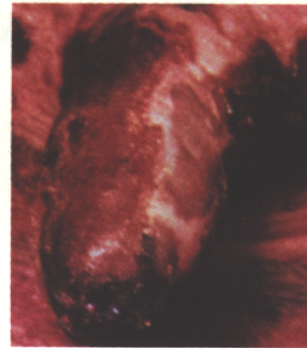
Frostbite



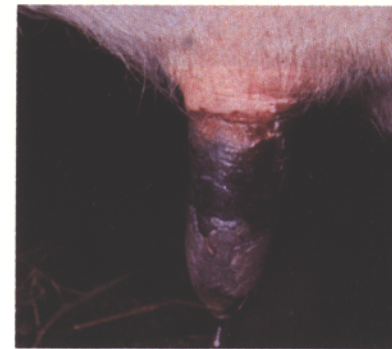
Ruptured vesicles



Drying from chemical burns



Skin breaks, scabbing and necrosis



Necrosis