SCC DIAGNOSTICS TOOL BOX

UNIVERSITY OF MINNESOTA EXTENSION
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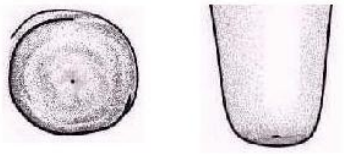
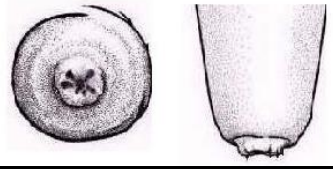
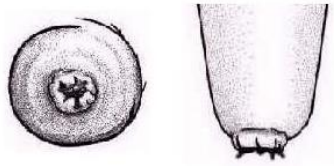
W-MP-3: Teat End Condition Scorecard (1-5 scoring scale)

Score	Description	Illustration
1	**No Ring** The teat-end is smooth with a small, even orifice. This is a typical status for many teats soon after the start of lactation.	
2	**Smooth or Slightly Rough Ring** A raised ring encircles the orifice. The surface of the ring is smooth or it may feel slightly rough but no fronds of old keratin are evident.	
3	**Rough Ring** A raised, roughened ring with isolated fronds or mounds of old keratin extending 1 to 3 mm from the orifice.	
4	**Very Rough Ring** A raised ring with rough fronds or mounds of old keratin extending 4 mm or more from the orifice. The rim of the ring is rough and cracked, often giving the test-end a "flowered" appearance.	
5	**Open Lesions or Scabs**	**Not pictured**

(Adapted from Mein, et al., A Scoring System for Teat-end Condition, 2001)

No. of cows scored			**% of milking herd**
No. with score of 1			**% of cows scored**
No. with score of 2			**% of cows scored**
No. with score of 3			**% of cows scored**
No. with score of 4			**% of cows scored**
No. with score of 5 (open lesions)			**% of cows scored**

Teat Scoring Guidelines:

- For herds less than 100 cows it may be practical to score the entire herd.
- For large herds, score 80 randomly selected cows or 20% of the herd whichever is the highest number.
- Use Tables 2 through 4 to record diagnosis for teat end condition in Table 1. A diagnosis of – or – – indicates that a problem condition it is not likely to exist in the herd. Diagnosis of + or ++ indicates that it is likely the problem condition exists for that teat lesion and further investigation is warranted. A diagnosis of 0 indicates that we cannot rule out the possibility that the problem condition exists but neither can we be sure that it does not exist. A larger sample size or further investigation is warranted.
- Use the combination of problem and non-problem cows and conditions as a guide to identify possible causes.
- Use the ratio of affected teats to affected cows as a guide to identifying whether the problem condition is evenly distributed among cows (low correlation between teats within cow) or if certain cows are more likely affected (high correlation between teats within cow).

Factors to Consider:

Cow factors

- Teat-end shape and length (long pointed teats prone to more hyperkeratosis).
- Teat position (malpositioned teats may be prone to more hyperkeratosis).
- Milk production (high production, higher milk flow, longer machine-on time may contribute to more hyperkeratosis).
- Stage of lactation (later lactation, more hyperkeratosis formation).
- Milking speed (slow milkers, more machine-on time, more hyperkeratosis).
- Parity (older cows, more exposure to milking, more hyperkeratosis).

Machine factors

- Milking and pulsation vacuum (higher vacuum, faster milk flow).
- Machine-on time (longer machine-on time, more hyperkeratosis).
- Liner type (liner movement).

Management factors

- Milking frequency (2X to 3X increases machine-on time 40%).

Diagnosis:

Table 1. Frequencies of teat condition problems that indicate need for further investigation.

		Diagnosis				
Teat condition measure	Criteria for “problem”	– –	–	0	+	++
Teat end roughness	> 20% rough or very rough					
Open lesions /scabs	> 5% open lesion or cracked skin					

Table 2. Binomial test results for 20% of the cows expected to have the problem.					
Number of cows scored	Number of cows with problem condition				
	– –	–	20% expected value	+	++
80	8	9	16	22	23
120	15	16	24	31	33
160	21	23	32	40	42
200	28	30	40	49	51

Table 3. Binomial test results for 10% of the cows expected to have the problem.					
Number of cows scored	Number of cows with problem condition				
	– –	–	10% expected value	+	++
80	2	3	8	13	14
120	5	6	12	18	19
160	8	9	16	22	24
200	11	12	21	27	28

Table 4. Binomial test results for 5% of the cows expected to have the problem.					
Number of cows scored	Number of cows with problem condition				
	– –	–	5% expected value	+	++
80	0	0	4	7	8
120	1	1	6	10	11
160	2	3	8	13	14
200	3	4	10	15	16

References:

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Goldberg, J.J., P.A. Murdough, A.B. Howard, P.A. Drechsler, J.W. Pankey, G.A. Ledbetter, L.L. Day, and J.D. Day. 1994. Winter evaluation of a postmilking powdered teat dip. J. Dairy Sci. 77(3):748-458.

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