W-MP-5: Using DHIA Records to Benchmark Herd SCC

Is your herd's SCC higher than you want and are you wondering what to do about it? Understanding herd SCC dynamics can help direct your attention to where the trouble is coming from. Is it a herd problem or a few high SCC cows? Is it new infections in fresh cows or lactating cows or a buildup of chronically infected cows? Benchmarking your herd SCC variables will help. Recent U of MN analysis of the MNDHI herd summaries has resulted in development of a MNDHI SCC benchmarking scorecard (Table 1). Herds with the highest quality milk were on average larger, produced more milk, had fewer mammary infections in all categories, had a lower proportion of the herd above 220 days in milk, and were less affected by season. Using your DHI #302 Herd Summary report for data, place your herds numbers for each variable to see where you stand compared to other Minnesota DHI herd in 4 different SCC categories.

Table 1. MNDHIA SCC Benchmarking Scorecard					
	SCC Categories (x1000)				
DHI Herd Summary Variables	**<200**	**200-299**	**300-399**	**>400**	**Your Herd**
Average herd size (#cows)	130	149	123	98	
SCC Average	157	251	353	513	
% > 200,000	16.4	24.7	32.9	43.4	
% New infections lactating cows	8.0	10.4	12.4	14.0	
% Chronic infections lactating cows	8.3	14.0	20.0	27.8	
% New infections fresh cows	11.6	13.5	15.1	15	
% Chronic infection fresh cows	6.2	11.1	17.7	26.5	
% > 200 at < 30 DIM	20.7	27.7	34.8	42.4	
% > 200 at 30-220 DIM	13.7	21	28.5	37.2	
% > 200 at > 220 DIM	19.4	28.7	37.4	47.8	
RHA milk lbs	23,186	22,275	20,610	18,906	
RHA fat lbs	865	831	780	728	
RHA protein lbs	706	681	636	589	

Now using the DHI # 370 SCC Flex report or the DHI #421 Test Day Bulk Tank report identify WHO are the culprits potentially contributing the most SCCs to your BTSCC. Similar high SCC cow lists can be developed with on farm software like Dairy Comp or PC Dart. Using these reports you can quickly characterize your herd SCC problem.

Clinical mastitis is annoying and can be a serious herd problem but greater than 70% of a herd SCC will usually come from sub-clinically infected cows (cows with SCC > 200,000). One of the greatest assets of monthly individual cow DHISCC testing is being able to accurately characterize the SCC dynamic in your herd. Figure 1 is a diagram of herd SCC dynamics. The level of herd SCC will depend on the number and duration of infections and the rate of new infections. High or increasing levels of new infections in both lactating cows and fresh cows signals immediate problems in dry or lactating cow management. On the other hand in some high SCC herds the problem is the result of a buildup of chronically infected cows. Whether the problem in your herd is a problem characterized by new infections in fresh cows and/or lactating cows or is a buildup of chronically infected cows each will require different problem solving solutions to achieve success in lower and maintaining a lower herd SCC.

Figure 2 is a modification of a flow chart developed by Quality Milk Production Services at Cornell University. Using your herd SCC benchmarking results and identifying those individual cows contributing most to the problem, you can use this flow chart to help develop an effective action plan. For example, if only a few cows (<5%) are contributing to your BTSCC problem this is not a herd problem but an individual cow problem. Follow the flow diagram and suggested action list to narrow your options in dealing with these problem cows. If you have more than 5% of cows contributing you should consider this a herd problem and will need to explore more deeply into the herd SCC dynamics.
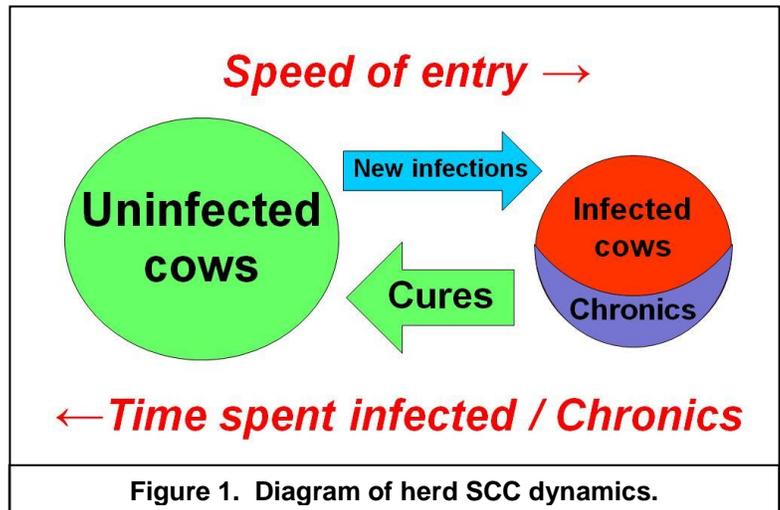

Speed of entry →

New infections

Uninfected cows

Infected cows

Cures

Chronics

← Time spent infected / Chronics

Figure 1. Diagram of herd SCC dynamics.

The below flow chart provides suggestions to narrow your investigation in the discovery of the causes as well as suggesting some of the appropriate SCC lowering actions. Your herd SCC records are critical to helping you and your veterinarian as well as your other dairy consultants in conquering your high SCC problem.

High BTSCC > 250,000

Few Cows Contributing If < 5%

Many Cows Contributing If > 5%

List cows & determine if chronic or spikes

New Infection Lactating Cows If > 5%

New Infection Fresh Cows If > 12%

Chronic Infection Lactating Cows If > 10%

Chronic Infection Fresh Cows If > 10%

Action list:

· Culture
· Segregate
· Treat if appropriate
· Dry off early
· Cull

Action list:

· Analyze 1st lactation & older cows
· Milking procedures
· Hygiene
· DIM / Dry
· Purchased cattle?
· Pen / Barn
  - Stocking rate
  - Bedding management
  - Ventilation

Action list:

· SCC patterns 1st lactation & older cows
  - Spikes
  - High-low-high
  - Chronics
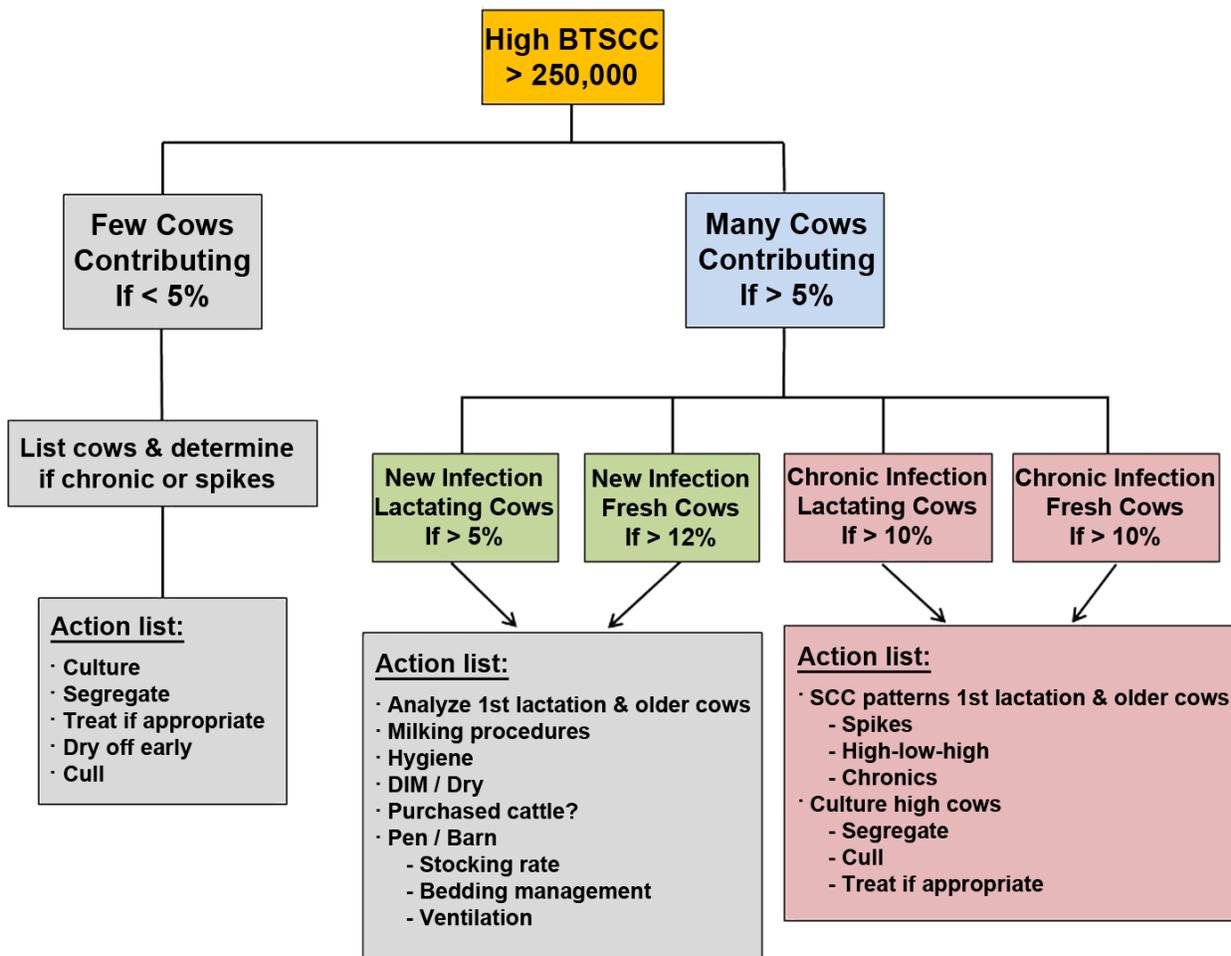· Culture high cows
  - Segregate
  - Cull
  - Treat if appropriate

Figure 2. Flow diagram for high BTSCC problem solving.