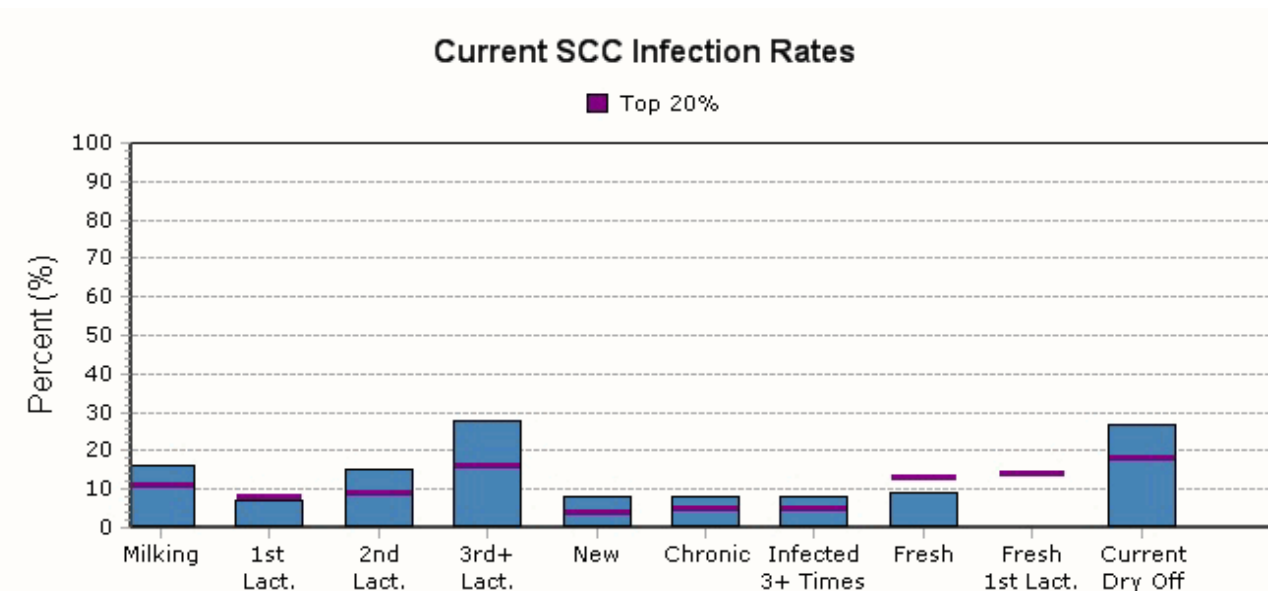
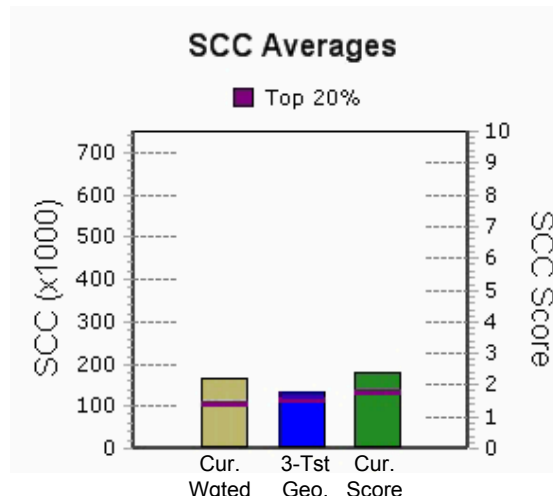
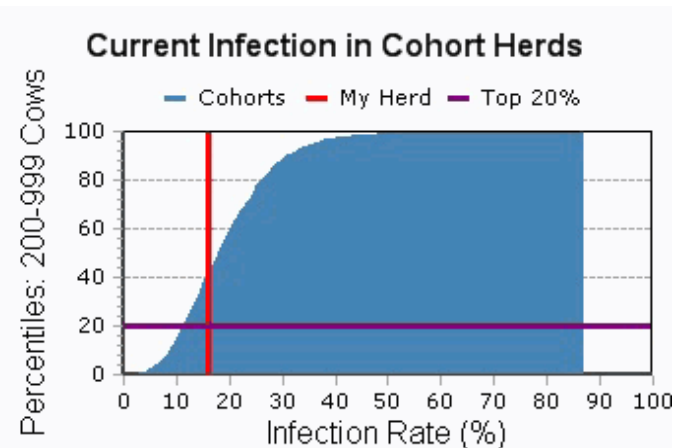


Mastitis can be caused by many factors typically related to environmental or contagious bacteria that are introduced by less than optimal milking procedures or hygiene of facilities or cattle. Mastitis can cause large economic losses from reduced milk production, discarded milk, lowered reproductive performance and excessive herd turnover.

Somatic Cell Count (SCC) from a day's milk is a standard indicator of the impact of udder infection. Cows with levels less than 100,000/ml are considered healthy - and levels of 200,000+/ml typically indicate an udder infection. This Monitor labels SCCs between 100,000 and 199,999 as SUSPECT and reveals cows that are not optimally healthy.

Since 2010, some processors have reported 3-month rolling geometric SCC averages to herds because of international pressure for on-farm milk to be less than the E.U.'s legal limit of 400,000/ml. A 3-test day geometric average = cube root of (current test day SCC average X prior test day SCC average X 2nd prior test day SCC average). This method reduces the impact of any single SCC on the average for the 3-month period.

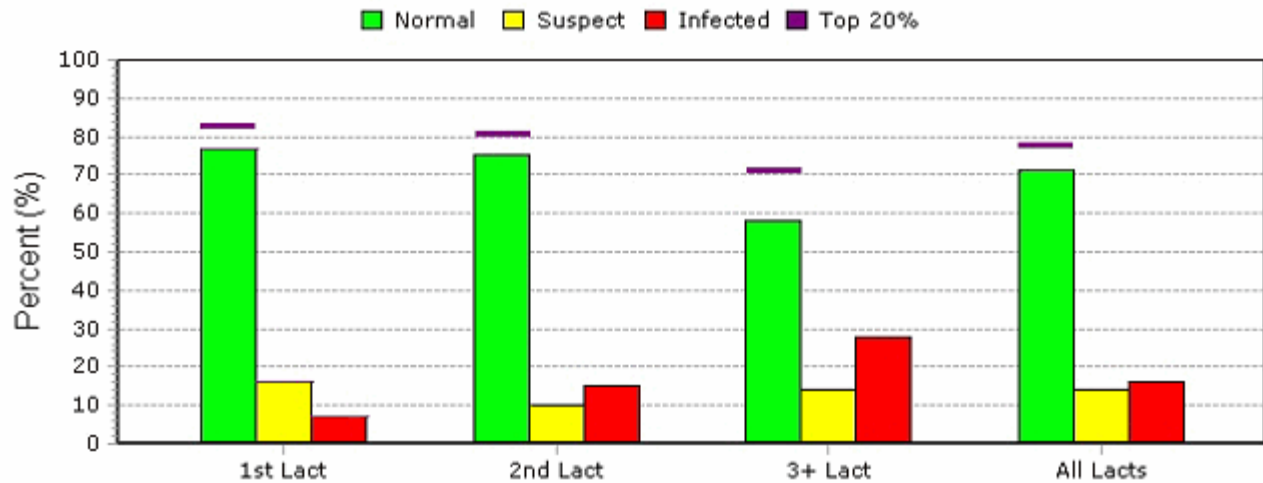
How well are top herds doing? Usually herd managers should set their own goals - but 'performance of top herds' can illustrate what can practically be achieved. This Monitor defines 'Top 20%' herds using each herd's weighted average SCC. Although average performance is similar across all herd sizes, more small herds have high infection rates than larger herds. The herd size categories for the 'Top 20%' are 1 to 199 cows; 200 to 999 cows, and; 1000+ cows.



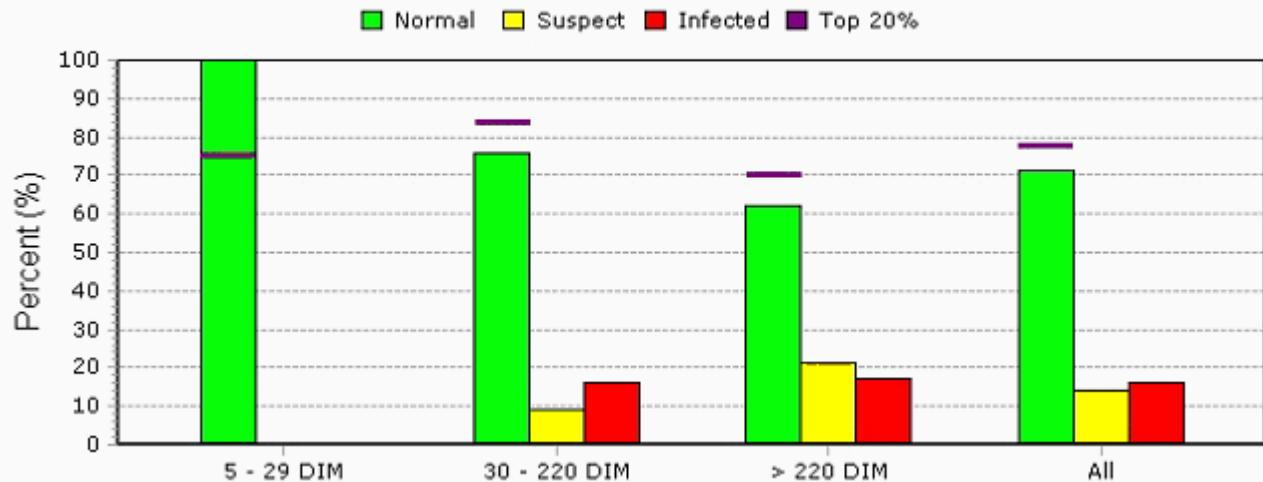
|            | Milking | 1st Lact. | 2nd Lact. | 3rd+ Lact. | New | Chronic | Infected 3+ Times | Fresh | Fresh 1st Lact. | Current Dry Off |
|------------|---------|-----------|-----------|------------|-----|---------|-------------------|-------|-----------------|-----------------|
| # Infected | 33      | 5         | 10        | 18         | 16  | 16      | 16                | 1     |                 | 4               |
| # Cows     | 207     | 75        | 67        | 65         | 207 | 207     | 207               | 11    | 6               | 15              |

Normal SCC = 0-99K (0-2.9 SCS)    Suspect SCC = 100K-199K (3.0-3.9 SCS)    Infected SCC = 200K+ (4.0-9.9 SCS)  
Both 'Normal' and 'Suspect' are considered Not Infected and are sometimes called 'Negative'

### Current SCC by Lactation



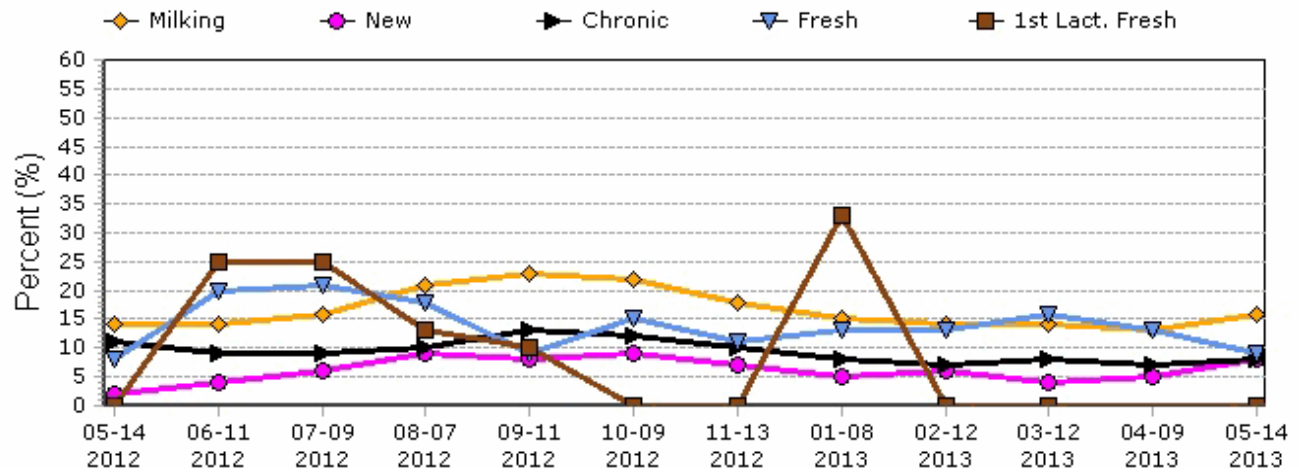
### Current SCC by Stage of Lactation



### Current SCC by Lactation, Stage of Lactation (Days in Milk) and Level

| Lact. | DIM      | Current Test    |                |                     |                     |               |           |    | Previous Test |    |                 |
|-------|----------|-----------------|----------------|---------------------|---------------------|---------------|-----------|----|---------------|----|-----------------|
|       |          | # Cows with SCC | Normal         | Suspect             | Mod-Inf             | Sev-Inf       | Total-Inf |    | Total-Inf     |    | # Cows with SCC |
|       |          |                 | 0-99K<br>0-2.9 | 100-199K<br>3.0-3.9 | 200-799K<br>4.0-5.9 | 800K+<br>6.0+ | #         | %  | %             | #  |                 |
| 1     | 5 - 29   | 3               | 100            |                     |                     |               |           |    |               |    | 1               |
|       | 30 - 220 | 30              | 83             | 17                  |                     |               |           |    | 9             | 3  | 32              |
|       | 220+     | 42              | 71             | 17                  | 12                  |               | 5         | 12 | 2             | 1  | 45              |
|       | All      | 75              | 77             | 16                  | 7                   |               | 5         | 7  | 5             | 4  | 78              |
| 2     | 5 - 29   | 2               | 100            |                     |                     |               |           |    | 14            | 2  | 14              |
|       | 30 - 220 | 49              | 82             | 2                   | 10                  | 6             | 8         | 16 | 13            | 5  | 40              |
|       | 220+     | 16              | 50             | 38                  | 13                  |               | 2         | 13 | 29            | 4  | 14              |
|       | All      | 67              | 75             | 10                  | 10                  | 4             | 10        | 15 | 16            | 11 | 68              |
| 3+    | 5 - 29   | 1               | 100            |                     |                     |               |           |    |               |    | 2               |
|       | 30 - 220 | 36              | 61             | 11                  | 17                  | 11            | 10        | 28 | 18            | 8  | 44              |
|       | 220+     | 28              | 54             | 18                  | 18                  | 11            | 8         | 29 | 25            | 6  | 24              |
|       | All      | 65              | 58             | 14                  | 17                  | 11            | 18        | 28 | 20            | 14 | 70              |
| All   |          | 207             | 71             | 14                  | 11                  | 5             | 33        | 16 | 13            | 29 | 216             |

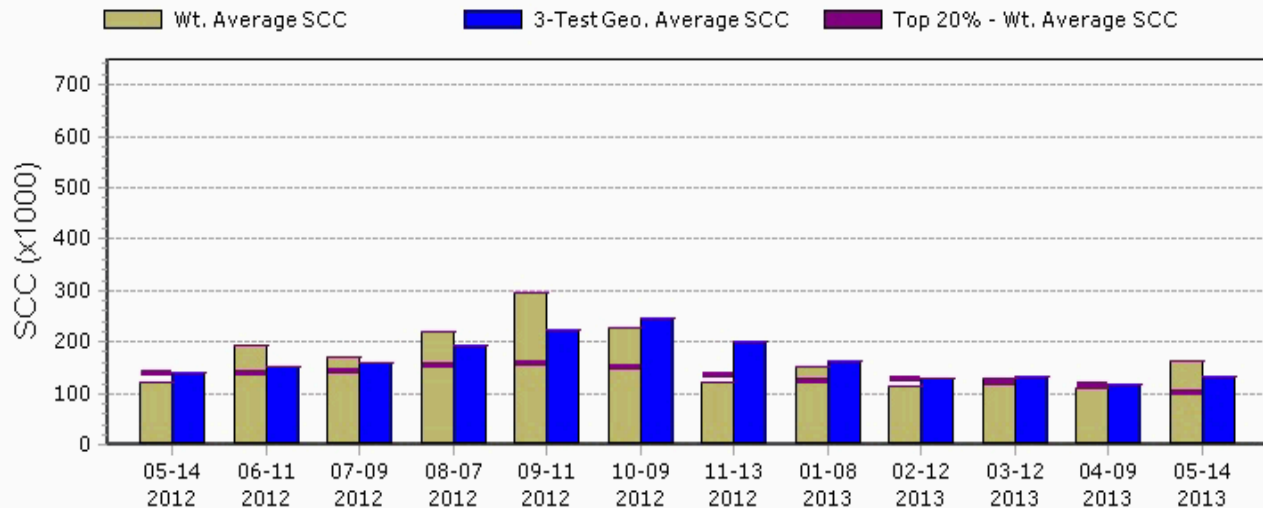
### Changes in Infection Rates for Milking, New, Chronic, Fresh and 1st Lactation Fresh



### Number of Cows and Infections

|                      | Date of Test |               |               |               |               |               |               |               |               |               |               |               |               | Avg. |
|----------------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|------|
|                      | ~~~~         | 05-14<br>2012 | 06-11<br>2012 | 07-09<br>2012 | 08-07<br>2012 | 09-11<br>2012 | 10-09<br>2012 | 11-13<br>2012 | 01-08<br>2013 | 02-12<br>2013 | 03-12<br>2013 | 04-09<br>2013 | 05-14<br>2013 |      |
| Infected Cows        |              | 27            | 27            | 29            | 37            | 41            | 42            | 33            | 27            | 27            | 29            | 29            | 33            | 32   |
| New Infections       |              | 4             | 7             | 10            | 16            | 14            | 17            | 12            | 9             | 11            | 9             | 11            | 16            | 11   |
| Chronic Infections   |              | 22            | 17            | 16            | 18            | 24            | 23            | 19            | 14            | 13            | 17            | 16            | 16            | 18   |
| Milking Cows         |              | 193           | 188           | 180           | 175           | 181           | 191           | 184           | 179           | 195           | 205           | 216           | 207           | 191  |
| Fresh Infections     |              | 1             | 3             | 3             | 3             | 2             | 2             | 2             | 4             | 3             | 3             | 2             | 1             | 2    |
| Fresh Cows           |              | 12            | 15            | 14            | 17            | 22            | 13            | 18            | 31            | 24            | 19            | 16            | 11            | 18   |
| 1st Lact. Fresh Inf. |              |               | 1             | 1             | 1             | 1             |               |               | 2             |               |               |               |               | 1    |
| 1st Lact. Fresh      |              | 6             | 4             | 4             | 8             | 10            | 2             | 7             | 6             | 7             | 4             |               | 6             | 5    |

### Changes in Weighted Average and Rolling 3-Test Geometric Average SCC

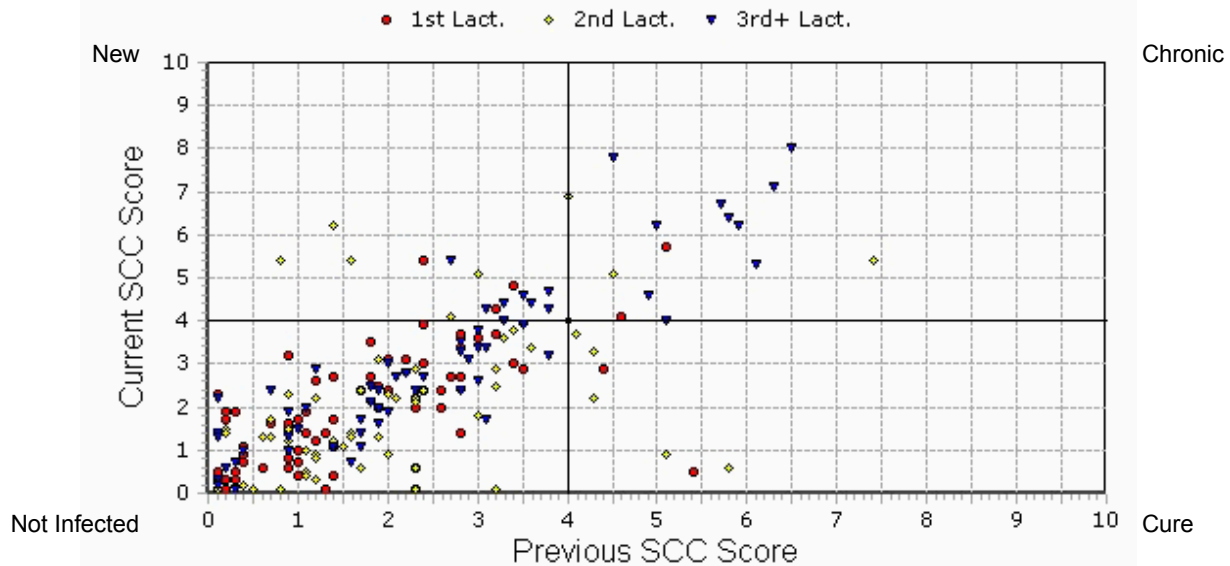


### Average SCC Score

|                | Date of Test |               |               |               |               |               |               |               |               |               |               |               |               | Avg. |
|----------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|------|
|                | ~~~~         | 05-14<br>2012 | 06-11<br>2012 | 07-09<br>2012 | 08-07<br>2012 | 09-11<br>2012 | 10-09<br>2012 | 11-13<br>2012 | 01-08<br>2013 | 02-12<br>2013 | 03-12<br>2013 | 04-09<br>2013 | 05-14<br>2013 |      |
| Avg. SCC Score |              | 2.2           | 2.0           | 2.2           | 2.5           | 2.7           | 2.7           | 2.4           | 2.5           | 2.4           | 2.4           | 2.2           | 2.4           | 2.4  |

Not Infected SCC = 0-199K (0-3.9 SCS)      Infected SCC = 200K+ (4.0-9.9 SCS)  
 Both 'Normal' and 'Suspect' are considered Not Infected and are sometimes called 'Negative'

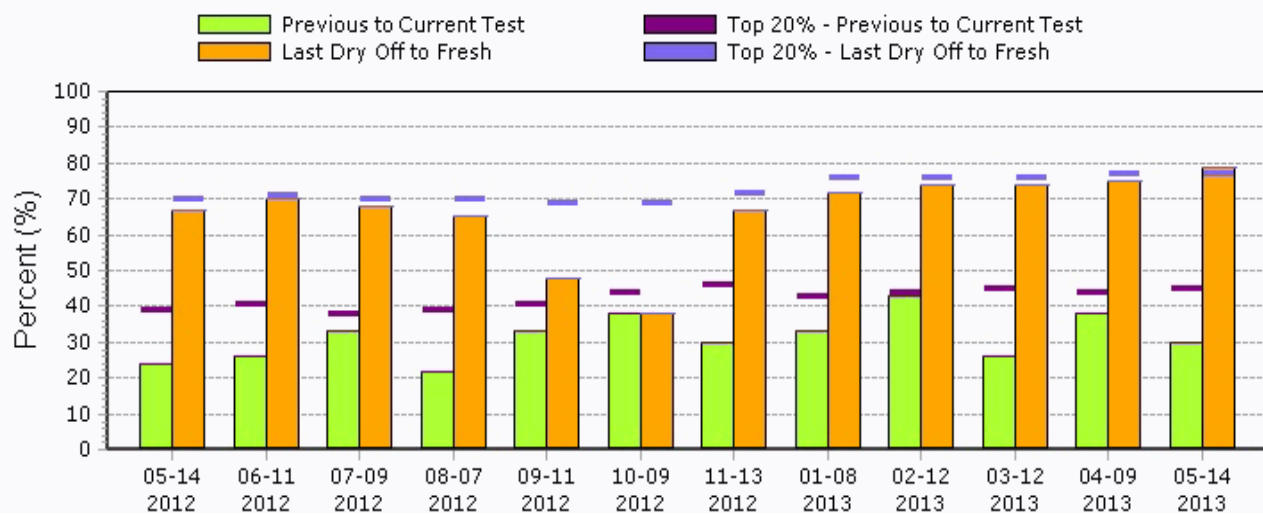
### Changes in SCC Status - Previous to Current Test by Lactation



|                 | Previous to Current Test |     |         | Last Dry Off to Fresh |    |         |
|-----------------|--------------------------|-----|---------|-----------------------|----|---------|
|                 | My Herd                  |     | Top 20% | My Herd               |    | Top 20% |
|                 | #                        | %   | %       | #                     | %  | %       |
| Not Infected    | 163                      | 84  | 89      | 120                   | 88 | 86      |
| New Infections  | 16                       | 8   | 5       | 9                     | 7  | 9       |
| Cures           | 7                        | 30  | 45      | 27                    | 79 | 77      |
| Chronics        | 16                       | 8   | 6       | 7                     | 5  | 4       |
| Net Trans. Rate | ~~~~                     | 229 | 91      | ~~~~                  | 33 | 67      |

Net Transmission Rate  
 New Inf. / Cures \* 100

### Cure Rates for SCC



### Number of SCC Cures

|                     | Date of Test |            |            |            |            |            |            |            |            |            |            |            |            | Avg. |
|---------------------|--------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------|
|                     | ~~~~         | 05-14 2012 | 06-11 2012 | 07-09 2012 | 08-07 2012 | 09-11 2012 | 10-09 2012 | 11-13 2012 | 01-08 2013 | 02-12 2013 | 03-12 2013 | 04-09 2013 | 05-14 2013 |      |
| Previous to Current |              | 7          | 6          | 8          | 5          | 12         | 14         | 8          | 7          | 10         | 6          | 10         | 7          | 8    |
| Dry Off to Fresh    |              | 18         | 16         | 15         | 15         | 12         | 9          | 12         | 18         | 23         | 26         | 27         | 27         | 18   |

### Cows to Treat or Watch - 1st Lactation

Infected this test or last test (SCC &gt;= 200K (SCS &gt;= 4.0)) and DIM &gt;= 5

| Index | Grp | Lact. # | DIM | Milk | SCC | Prev. SCC | Inf. Level | Lact. Avg. SCC | Prev. Lact. Avg. SCC | Tests Infected |    | Date 1st Infected | DIM 1st Inf. | 30 Day Milk Loss | 305 2X ME Milk | Priv. Lact. 305 2X ME Milk | Days Since Bred | Prog. |
|-------|-----|---------|-----|------|-----|-----------|------------|----------------|----------------------|----------------|----|-------------------|--------------|------------------|----------------|----------------------------|-----------------|-------|
|       |     |         |     |      |     |           |            |                |                      | #              | %  |                   |              |                  |                |                            |                 |       |
| 8772  | 3   | 1       | 226 | 81.2 | 650 | 429       | CHR        | 214            | ~~~~                 | 4              | 57 | 2-12-13           | 135          | 83               | 28,487         | ~~~~                       | 150             | P     |
| 8720  | 3   | 1       | 407 | 89.2 | 528 | 66        | NEW        | 264            | ~~~~                 | 7              | 54 | 7-09-12           | 98           | 77               | 33,155         | ~~~~                       | 157             | P     |
| 8726  | 3   | 1       | 389 | 57.7 | 348 | 132       | NEW        | 100            | ~~~~                 | 2              | 17 | 3-12-13           | 326          | 63               | 33,722         | ~~~~                       | 221             | P     |
| 8714  | 3   | 1       | 322 | 38.3 | 246 | 115       | NEW        | 107            | ~~~~                 | 1              | 10 | 5-14-13           | 322          | 52               | 26,368         | ~~~~                       | 227             | P     |
| 8701  | 3   | 1       | 431 | 59.4 | 214 | 303       | CHR        | 93             | ~~~~                 | 4              | 31 | 2-12-13           | 340          | 47               | 31,044         | ~~~~                       |                 |       |
| 8812  | 1   | 1       | 119 | 89.0 | 93  | 264       | PRV        | 66             | ~~~~                 | 1              | 25 | 4-09-13           | 84           | 20               | 25,763         | ~~~~                       | 45              | P     |
| 8803  | 1   | 1       | 101 | 88.3 | 18  | 528       | PRV        | 66             | ~~~~                 | 1              | 25 | 4-09-13           | 66           |                  | 23,099         | ~~~~                       | 25              |       |

### Cows to Treat or Watch - 2nd+ Lactations

New infections (SCC &gt;= 200K (SCS &gt;= 4.0)) and DIM &gt;= 5

| Index | Grp | Lact. # | DIM | Milk  | SCC  | Prev. SCC | Inf. Level | Lact. Avg. SCC | Prev. Lact. Avg. SCC | Tests Infected |     | Date 1st Infected | DIM 1st Inf. | 30 Day Milk Loss | 305 2X ME Milk | Priv. Lact. 305 2X ME Milk | Days Since Bred | Prog. |
|-------|-----|---------|-----|-------|------|-----------|------------|----------------|----------------------|----------------|-----|-------------------|--------------|------------------|----------------|----------------------------|-----------------|-------|
|       |     |         |     |       |      |           |            |                |                      | #              | %   |                   |              |                  |                |                            |                 |       |
| 8705  | 7   | 2       | 30  | 104.4 | 1838 |           | NEW        | 1838           | 492                  | 1              | 100 | 5-14-13           | 30           | 234              |                | 27,388                     |                 |       |
| 829   | 7   | 2       | 58  | 114.8 | 919  | 33        | NEW        | 174            | 41                   | 1              | 50  | 5-14-13           | 58           | 189              | 23,084         | 31,151                     |                 |       |
| 8493  | 3   | 3       | 147 | 93.9  | 528  | 81        | NEW        | 57             | 100                  | 1              | 20  | 5-14-13           | 147          | 153              | 23,986         | 27,750                     | 24              |       |
| 8649  | 1   | 2       | 148 | 116.2 | 528  | 38        | NEW        | 62             | 18                   | 1              | 20  | 5-14-13           | 148          | 153              | 33,741         | 37,457                     | 31              |       |
| 854   | 7   | 2       | 73  | 114.0 | 528  | 22        | NEW        | 76             | 76                   | 1              | 33  | 5-14-13           | 73           | 153              | 24,156         | 35,033                     |                 |       |
| 8653  | 1   | 2       | 85  | 103.4 | 429  | 100       | NEW        | 123            | 66                   | 1              | 33  | 5-14-13           | 85           | 140              | 23,119         | 31,477                     | 10              |       |
| 8170  | 7   | 5       | 119 | 99.8  | 325  | 174       | NEW        | 264            | 246                  | 2              | 50  | 3-12-13           | 56           | 122              | 21,330         | 29,315                     | 45              | P     |
| 8460  | 3   | 3       | 262 | 36.7  | 303  | 141       | NEW        | 115            | 66                   | 3              | 38  | 2-12-13           | 171          | 117              | 22,114         | 27,198                     | 201             | P     |
| 7934  | 1   | 7       | 117 | 111.0 | 264  | 152       | NEW        | 141            | 44                   | 1              | 25  | 5-14-13           | 117          | 108              | 23,278         | 33,115                     |                 |       |
| 8399  | 1   | 3       | 325 | 64.2  | 264  | 123       | NEW        | 57             | 44                   | 1              | 10  | 5-14-13           | 325          | 108              | 23,905         | 22,276                     |                 |       |
| 8471  | 3   | 3       | 157 | 82.4  | 246  | 174       | NEW        | 230            | 81                   | 4              | 80  | 1-08-13           | 31           | 104              | 20,678         | 26,036                     | 38              |       |
| 8214  | 8   | 4       | 449 | 30.3  | 246  | 107       | NEW        | 174            | 62                   | 9              | 64  | 3-12-12           | 21           | 104              | 20,430         | 23,094                     | 143             | P     |
| 8564  | 1   | 2       | 257 | 63.3  | 214  | 81        | NEW        | 93             | 25                   | 2              | 25  | 9-11-12           | 12           | 95               | 26,644         | 30,623                     | 25              |       |
| 7950  | 3   | 6       | 453 | 57.8  | 200  | 123       | NEW        | 81             | 62                   | 2              | 14  | 9-11-12           | 208          | 90               | 28,949         | 29,901                     | 213             | P     |

### Cows to Cull for Poor Udder Health

Infected (Current SCC &gt;= 200K (SCS &gt;= 4.0)) AND Infected 3+ tests this lactation AND Milk &lt; 50 lbs

| Index | Grp | Lact. # | DIM | Milk | SCC  | Prev. SCC | Inf. Level | Lact. Avg. SCC | Prev. Lact. Avg. SCC | Tests Infected |     | Date 1st Infected | DIM 1st Inf. | 30 Day Milk Loss | 305 2X ME Milk | Priv. Lact. 305 2X ME Milk | Days Since Bred | Prog. |
|-------|-----|---------|-----|------|------|-----------|------------|----------------|----------------------|----------------|-----|-------------------|--------------|------------------|----------------|----------------------------|-----------------|-------|
|       |     |         |     |      |      |           |            |                |                      | #              | %   |                   |              |                  |                |                            |                 |       |
| 8318  | 3   | 3       | 514 | 28.5 | 1056 | 696       | CHR        | 919            | 81                   | 16             | 100 | 1-13-12           | 27           | 198              | 27,222         | 30,898                     | 227             | P     |
| 8268  | 3   | 4       | 340 | 28.0 | 919  | 400       | CHR        | 348            | 230                  | 6              | 60  | 9-11-12           | 95           | 189              | 18,150         | 30,017                     | 185             | P     |
| 8460  | 3   | 3       | 262 | 36.7 | 303  | 141       | NEW        | 115            | 66                   | 3              | 38  | 2-12-13           | 171          | 117              | 22,114         | 27,198                     | 201             | P     |
| 8214  | 8   | 4       | 449 | 30.3 | 246  | 107       | NEW        | 174            | 62                   | 9              | 64  | 3-12-12           | 21           | 104              | 20,430         | 23,094                     | 143             | P     |