



THE GLOBAL STANDARD
FOR LIVESTOCK DATA



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Bulk Milk Data and Udder Health

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Introduction

- Advantages and Limitations
- Data
 - Types and availability
 - Application
 - Examples...
- Other and Future approaches?

Advantages and Limitations

- Readily available
 - No additional effort required
 - Offers opportunity to 'refine' individual cow data when individual cow recording methods pose certain challenges?
- Often no additional cost
 - 'Cheap' herd screen
- Reflects milk sold and financial input
- Offers opportunity for 'high level' monitoring

Advantages and Limitations

- Only reflects contributing population
 - False sense of security...
- Often slow to respond...
- More limited sensitivity and specificity vs individual cows testing
 - ‘Blunt’ tool, but maybe useful lead-in
- Often ‘oversold’

Data - Types and Availability

- Somatic Cell Counts
 - Other inflammatory markers?
- Bacteriology (inc PCR)
 - Quantitative
 - Bacterial counts/bactoscan
 - Qualitative
 - 'Direct Plating'



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Bulk Milk SCC

- A blunt tool...
- Gives an indication of herd prevalence of IMI
 - Each 100,000 cells/ml increase in BMSCC associated with 8-12% increase in prevalence of infection
- Probably more useful in very low SCC herds as an individual cow can have a significant impact

Bulk Tank Bacteriology (1)

- A blunt tool...
- Does not necessarily reflect contribution from the udder
 - Interpret with care
- Bacterial counts and differential counts can be of use, but more directed at control of 'milk quality'
 - TVC, Thermotrophic counts, Psychrotrophic counts, Coliform Counts, *etc*
 - "Spiking" TVCs/Bactoscans (*S. agalactiae* / *S. uberis*)

Bulk Tank Bacteriology (2)

- Qualitative approaches
 - Presence or absence of a pathogen - herd screen
 - Contagious vs Environmental pathogens
- Contagious - screening (Repeat testing)
 - *S. agalactiae* (sensitivity - 75%?)
 - *S. aureus* (sensitivity - 60%?)
 - *Mycoplasma* spp
- Environmental
 - A marker of poor milking hygiene
 - Portent of poor udder health?
 - *S. uberis* - may be an exception if present in high numbers (“pure” growth)



OTHER AND FUTURE USES?



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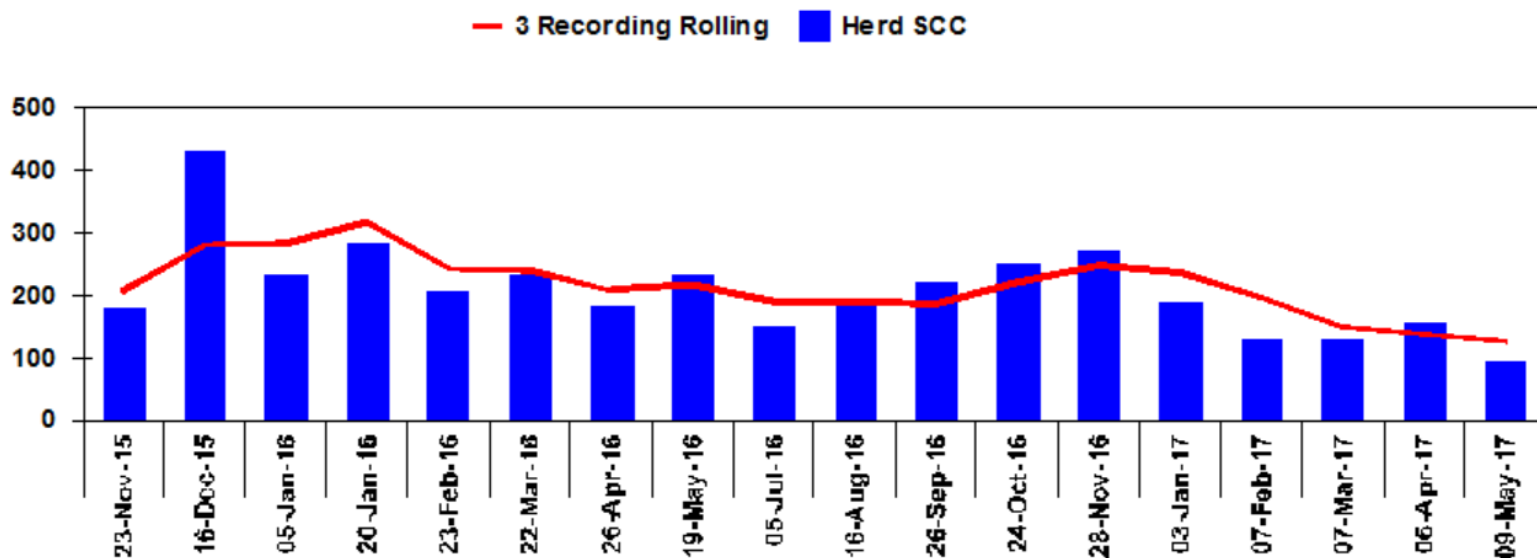


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Refining Individual Cow Results?

- Interpretation of SCCs from am/pm (alternate) factored recordings can be a challenge
 - Particularly if milking intervals are very different



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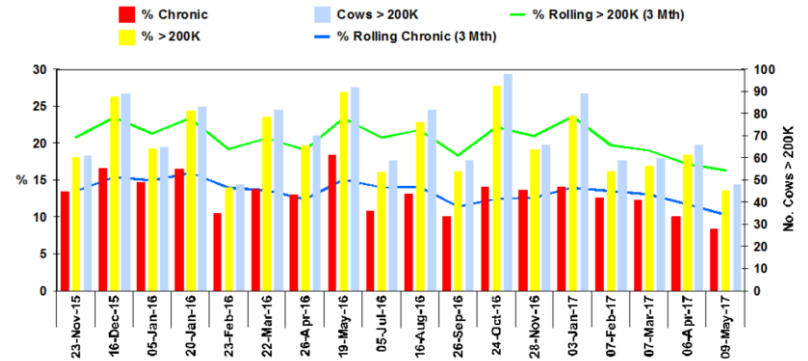
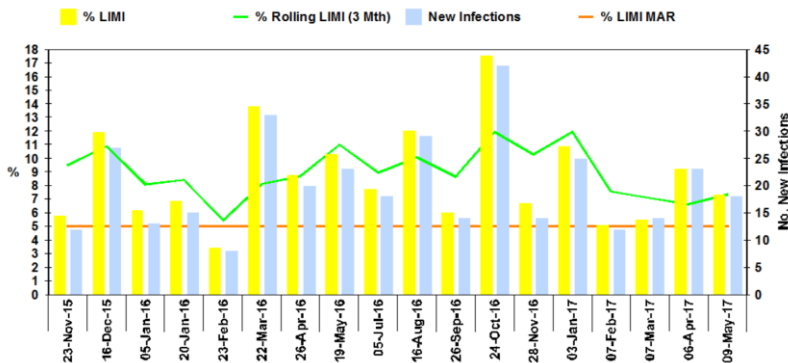


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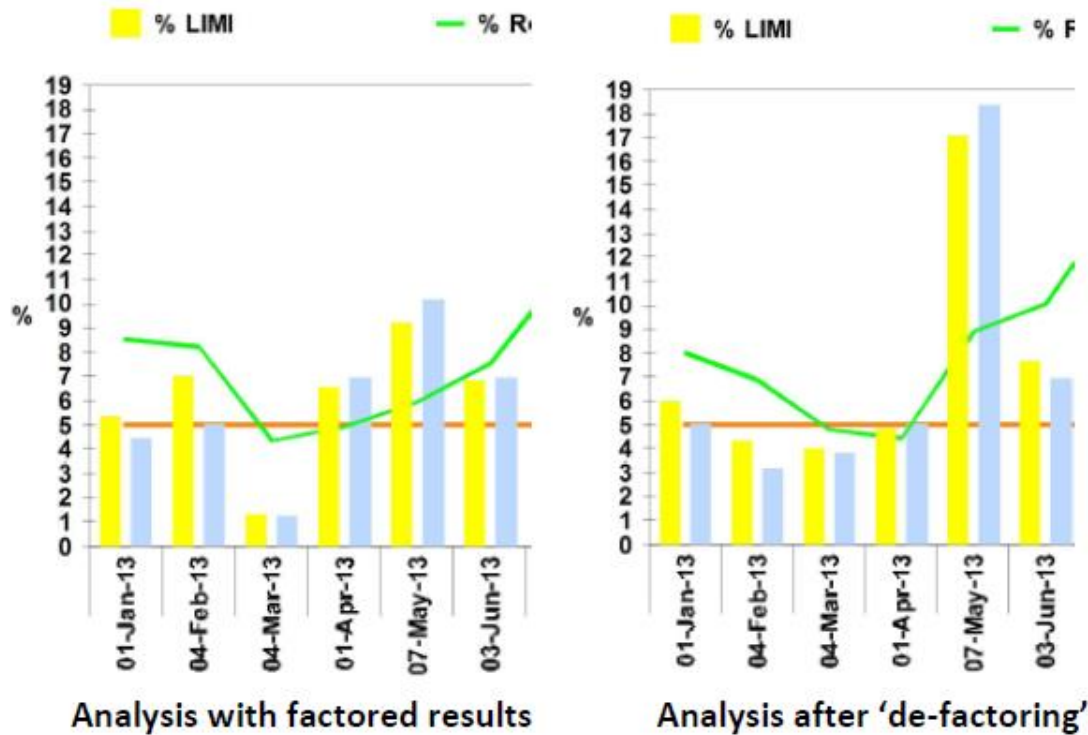
Refining Individual Cow Results?

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- Bulk tank values are used to ‘smooth’ impact of factoring by recalculating individual cow SCCs based on proportional contribution
 - Optimal if all cows going in the tank...

An illustration of the impact of factoring on lactation new infection rate calculations.



Factoring of the milk recording has resulted in an underestimation of the infection rate in March 2013, and an overestimation in April 2013, culminating in a dramatic underestimation of the lactation new infection rate in May 2013 therefore downplaying what is likely to have been an important impact of 'turnout'.

Future Approaches

- AMR screening
 - Does bulk milk offer an opportunity to screen/monitor AMR within a herd over time?
 - Bulk milk isolates associated with higher MICs than environmental isolates...
 - Will need interpreting with care
 - Could inform treatment decisions, but **not** a basis for prescription...

Summary

- Bulk tank data offers a useful ‘high level’ monitoring and screening tool
- Must not be over interpreted
- Probably more applicable to ‘milk quality’ than udder health?



Questions

Mastitis

Cull Toxic Intramammary
Systemic

Fluids Welfare Resistance Milk Costs
Antibiotics Cow Aetiology Tube
NSAID Quality SCC



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