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WG functional traits

# Benchmarking for Health from the Perspective of Consultants

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# Introduction

- The role of benchmarking
- The benchmarking process
  - Common pitfalls
- Benchmarking in the dairy industry
  - Business benchmarking
  - Benchmarking for health
    - National
    - Small groups
    - Within an enterprise



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# The Role of Benchmarking

- to measure according to specified standards in order to compare it with and improve one's own performance.
- to evaluate (something) by comparison with a standard
- "Finding and implementing best practice"

Camp, R. C. (1989)



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# The Role of Benchmarking

- Comparing Performance
  - Within and between sectors
  - Within and between farms
  - Over time
- Determine best practice
  - Validate and justify change
- Increasingly used by consultants
  - Over reliance on a few KPIs
  - Lack of understanding
  - Many pitfalls!
- Not a trivial process!



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# The Benchmarking Process

- Approach may vary according to the objective
- Should be an ongoing informal process within any dairy consultancy
- Two Phases
  - Planning (periodic re-planning)
    - Often iterative
  - Implementation

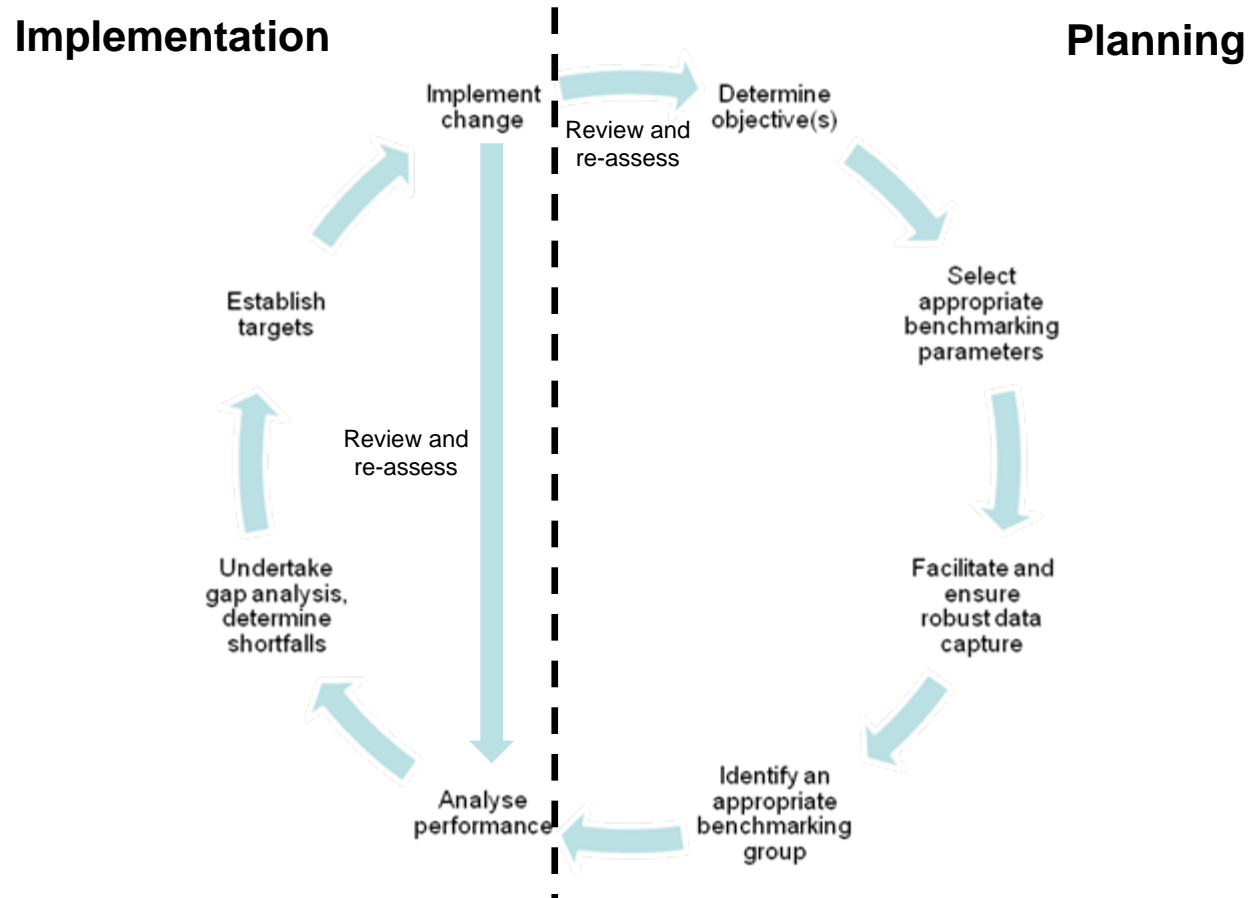
Often using data collected for  
genetic evaluations for a very  
different reason



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# The Benchmarking Process



# The Benchmarking Process

- Determine objective(s)
  - High level
    - Improve milk quality
    - Improve fertility
  - More focussed
    - Improve dry period mastitis control
    - Improve submission rates
  - These will evolve over time

Improve  
Milk  
Quality



Monitor  
and Control  
SCC



Monitor and  
Control  
Clinical Mastitis



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# The Benchmarking Process

- Select appropriate benchmarking parameters
  - Improvement in output sought
  - Monitoring and influencing inputs is more appropriate
  - Consider secondary parameters
    - eg influential confounders
- Composite indices can be useful
  - The Transition Cow Index (Noorland and Cook)
- Beware of the impact of missing data
- Beware of the impact of errors
  - Systematic errors
  - carryover



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# The Impact of Missing Data

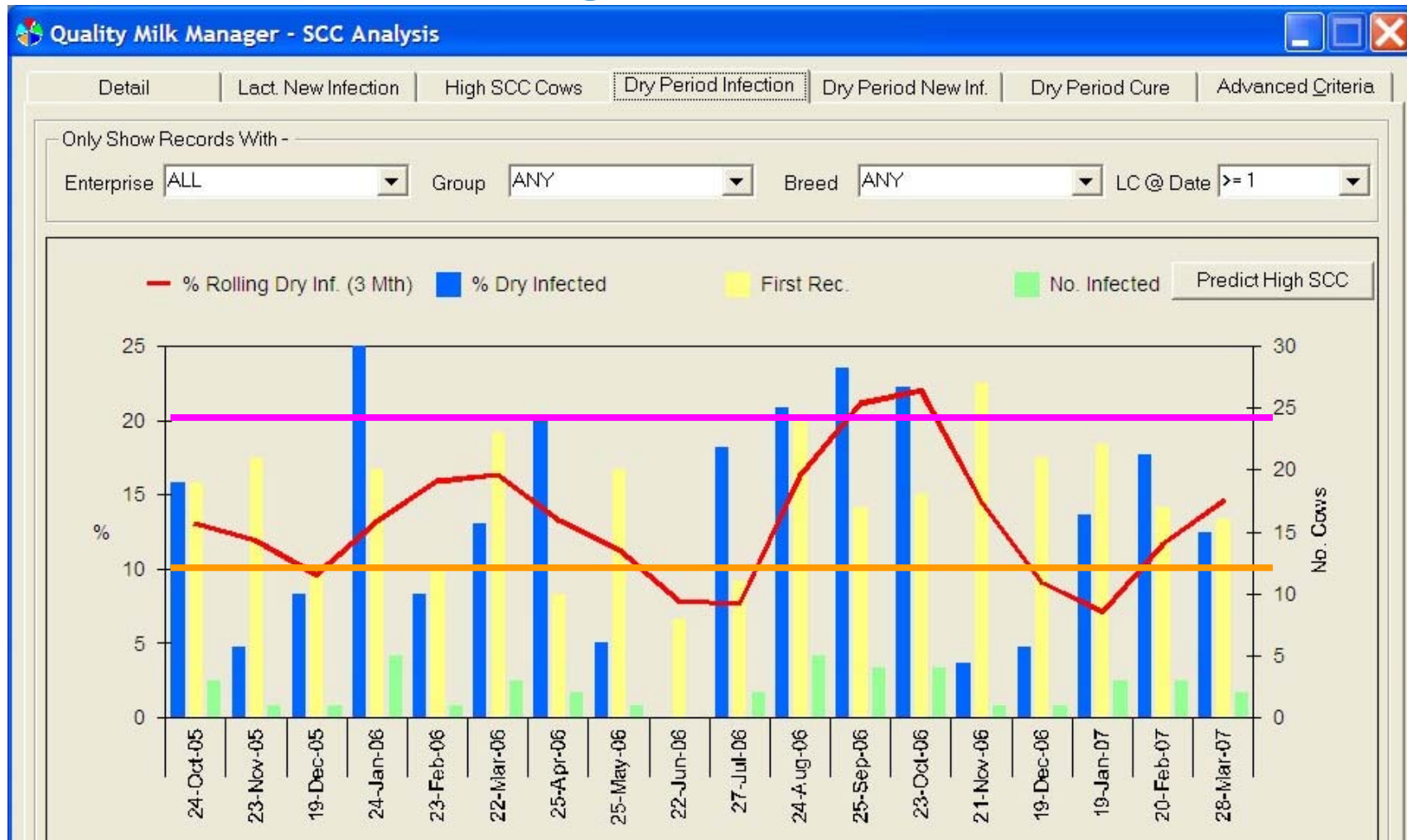
- The impact of clinical mastitis on somatic cell count data
  - Cows absent from milk recording in early lactation



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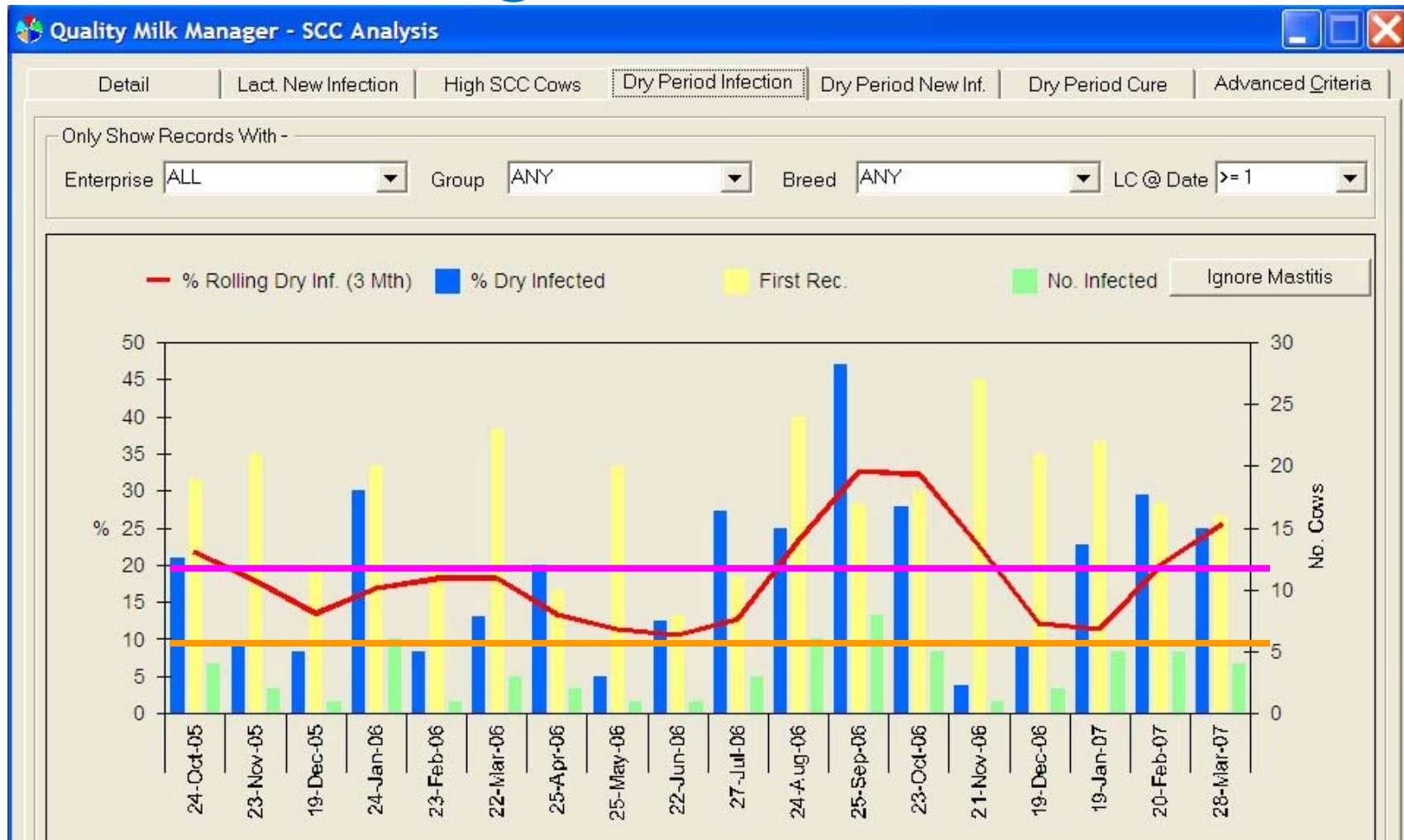
# Without integration of CM Data



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# With integration of CM Data



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# Selecting Appropriate Benchmarking Parameters

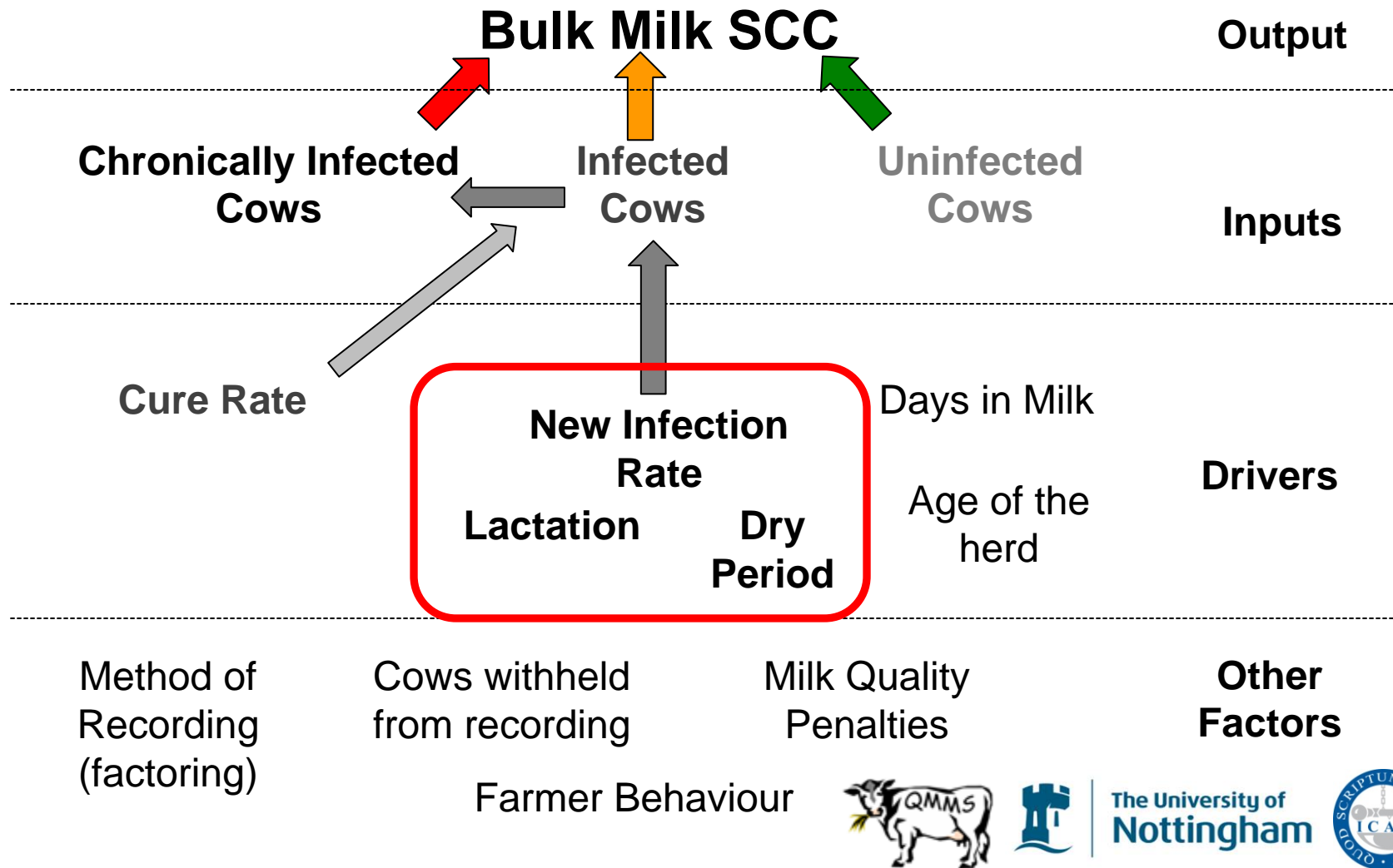
- Reducing Bulk Milk SCC (Output)
  - Milk sold vs calculated value?
  - Easily manipulated
    - Culling and withholding cows
  - Secondary parameter of milk sold of milk produced?
- Monitor Inputs
  - High SCC and Chronically infected cows....
  - More appropriate would be new IMI rate
    - the rate of 'evolution' of new high SCC COWS



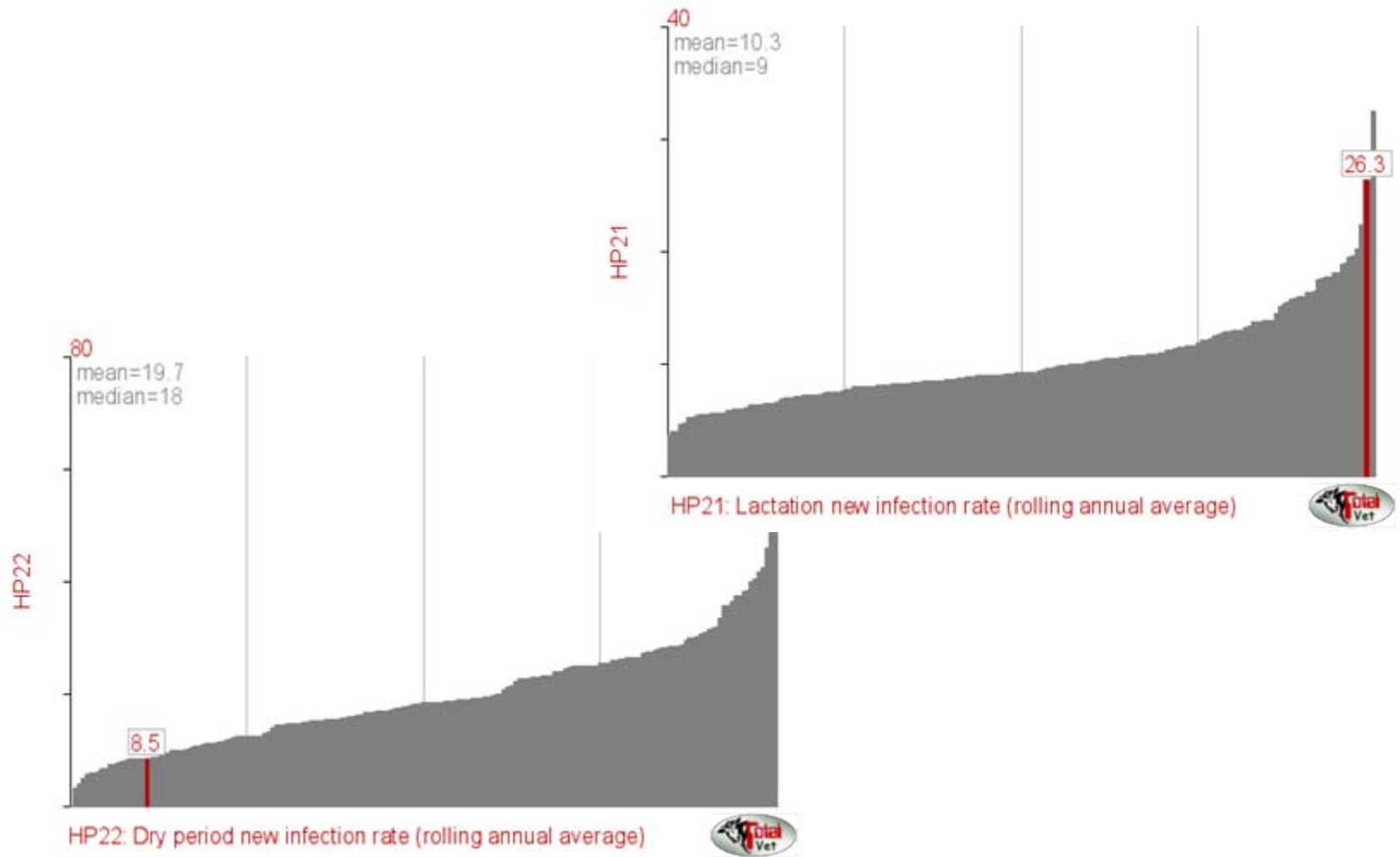
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# Selecting Appropriate Benchmarking Parameters



# Why Diverse Parameters?

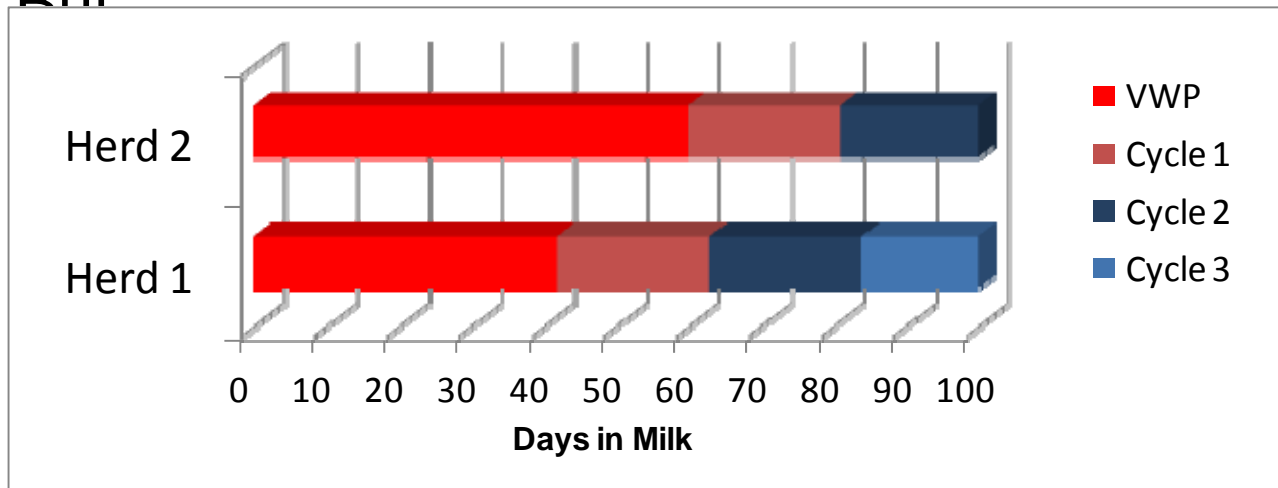


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# Selecting Appropriate Benchmarking Parameters

- Improving Fertility
- 100 day in calf rate
  - Proportion of those cows calved that were eligible to be served that have conceived by 100 days in milk
    - Encompasses both submission and conception rates
- But



# The Benchmarking Process

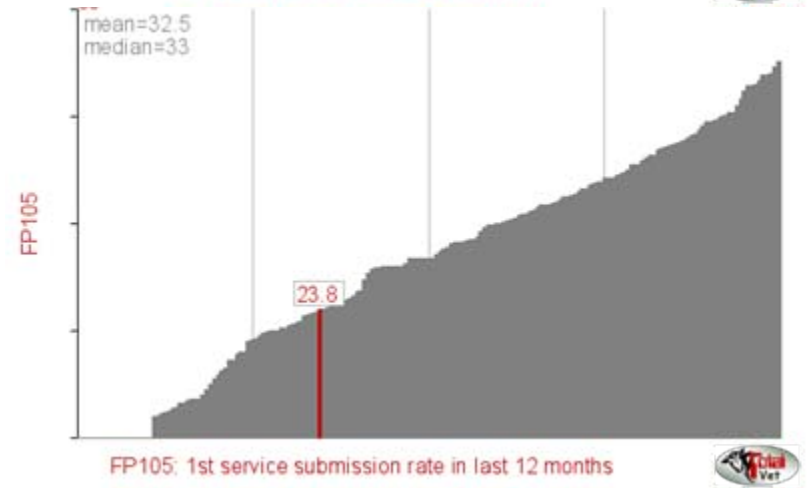
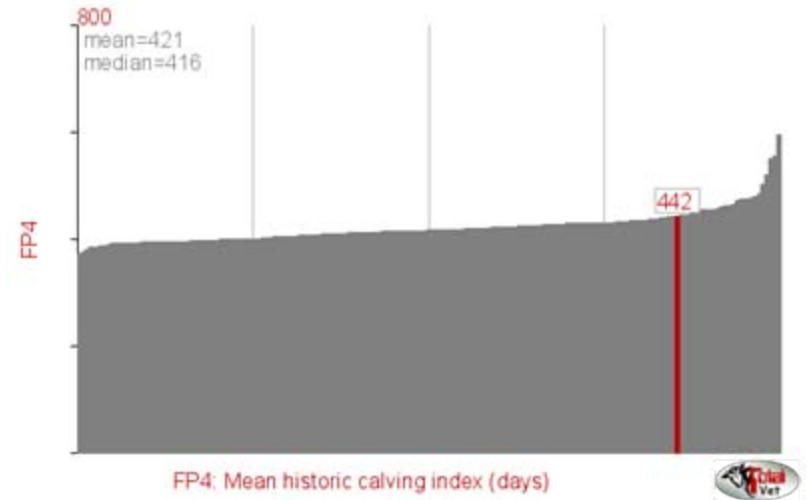
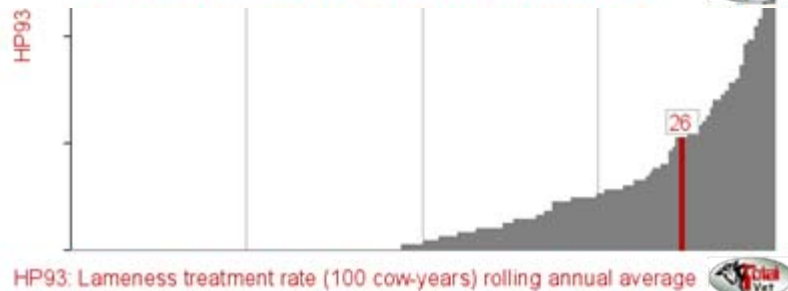
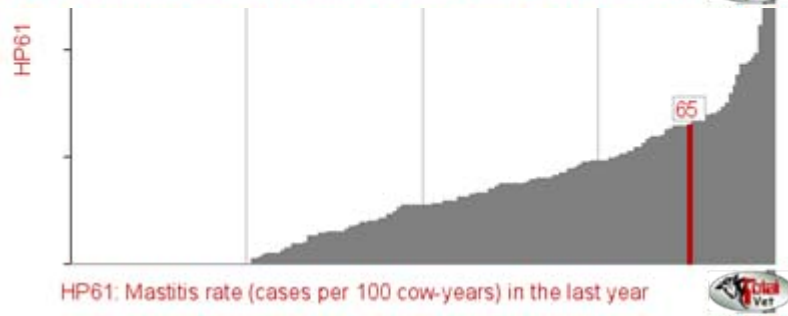
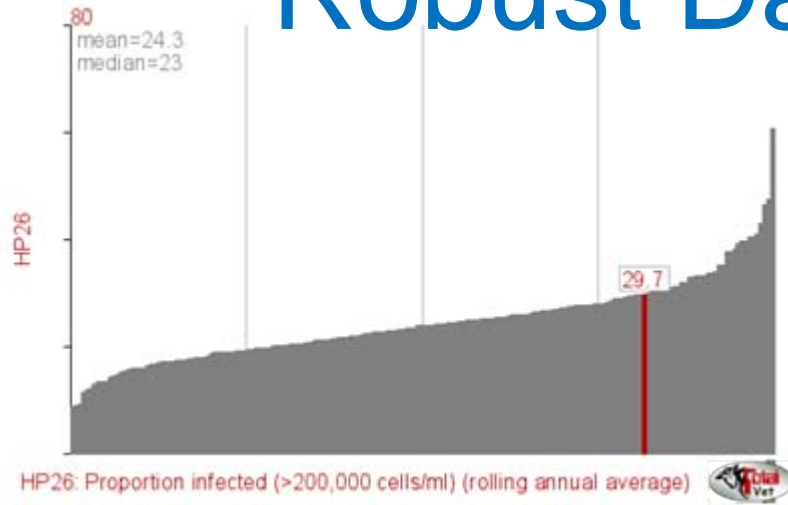
- Facilitate and ensure robust data capture
  - Garbage in .... Garbage out.....
  - **The most difficult part**
  - Appropriate data source
    - Engage the user
    - Closer to the farmer the better
    - Facilitate feedback
- Beware of 'data drift'
  - Discrepancies between 'on farm' and central databases



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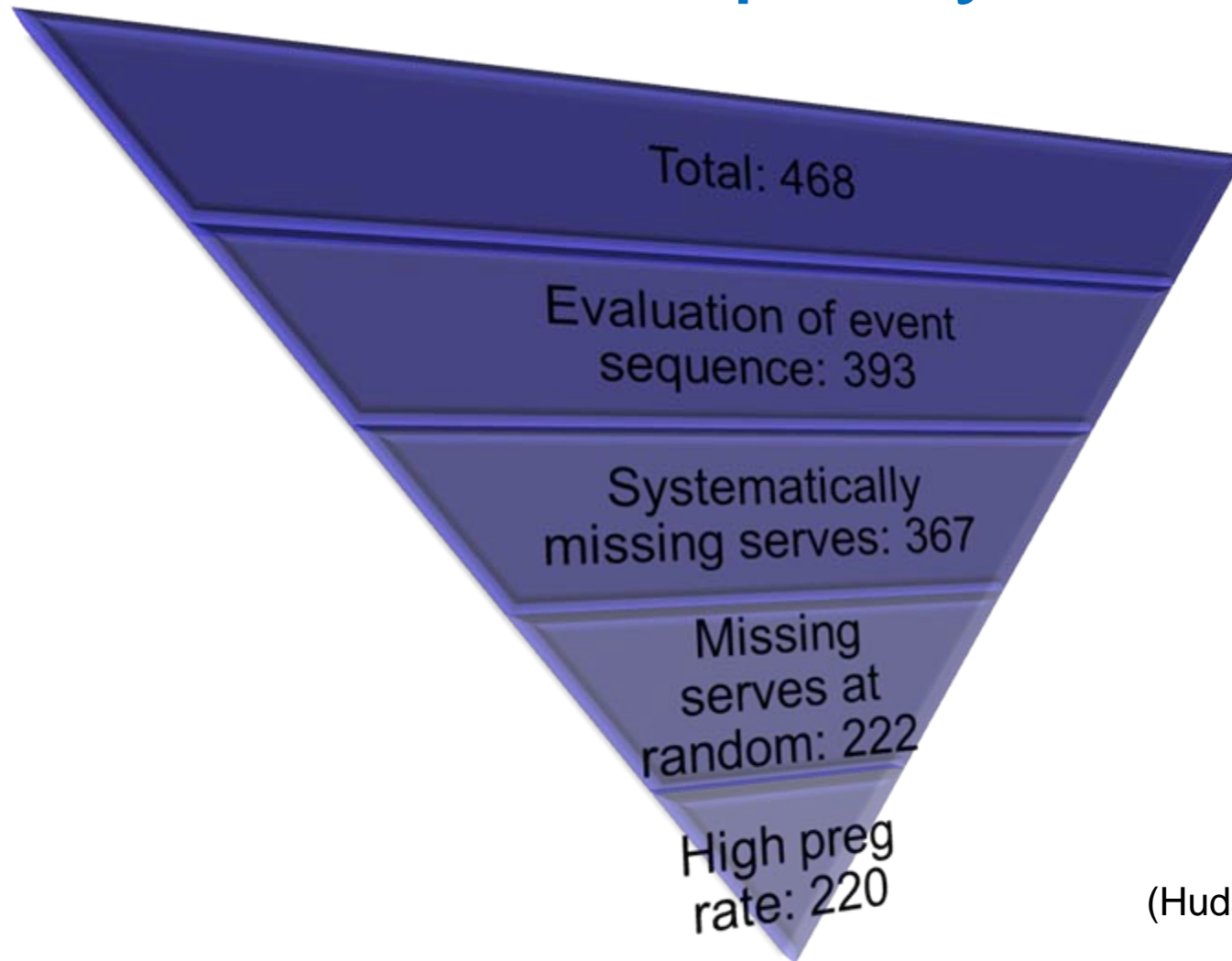
# Robust Data Capture



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# Data quality



(Hudson *et al*, 2011)



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# The Benchmarking Process

- Identify an appropriate benchmarking group
  - Management approach
  - Geographical location
  - Herd size *etc*
  - Common objective
    - Knowledge transfer between diverse models
- Analyse performance
  - Careful and appropriate analysis
    - Time periods (herd size)
    - Incidence and prevalence
    - Means, medians and inter-quartile ranges



# The Benchmarking Process

- Undertake gap analysis, determine shortfalls
  - Facilitate knowledge transfer to determine best practice
- Establish targets
  - Appropriate, achievable, relative?
- Implement change
  - Using an evidence base wherever possible
- Review and re-asses
  - Feedback impact of change
  - Re-assess and recalibrate as necessary
  - Maintain relevance



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# Benchmarking in the Dairy Industry



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# Benchmarking in the Dairy Industry

- Business benchmarking
- Benchmarking for health
  - National
  - Small groups
  - Within an enterprise



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# Dairy Business Benchmarking

- Well established (eg Milkbench<sup>+</sup>)
- High level overview of enterprise profitability
- Incorporates some high level health measures

**D.**

**DairyCo Milkbench<sup>+</sup>**  
a fully independent, confidential and impartial online dairy benchmarking system.

[Home Page](#) | [Register](#) | [News](#) | [FAQ's](#) | [Contact Us](#) | [Pack - Consultant](#) [Log In](#)

**Welcome**

What is your net margin per litre of milk? Are there any changes you could make to the way you manage your dairy enterprise that could increase your milk margin?

Milkbench<sup>+</sup> has been developed to help you answer those questions. All you need to do is enter details of your dairy income, costs and management information to generate detailed reports on the physical and financial performance of your dairy enterprise.

**MilkBench<sup>+</sup> is made up of seven cost clusters to make data input easier**

Click on the boxes below to see a description of each cluster and examples of the reports

```
graph LR; Registration[Registration] --> KeyFarm[Key farm & output data]; KeyFarm --> Feed[Feed and forage costs]; KeyFarm --> Labour[Labour costs]; KeyFarm --> Livestock[Livestock costs]; KeyFarm --> Machinery[Machinery & power]; KeyFarm --> Property[Property, imputed rent & finance]; KeyFarm --> Overhead[Overhead costs]; Feed --> Enterprise[Enterprise report]; Labour --> Enterprise; Livestock --> Enterprise; Machinery --> Enterprise; Property --> Enterprise; Overhead --> Enterprise
```

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# Benchmarking For Health

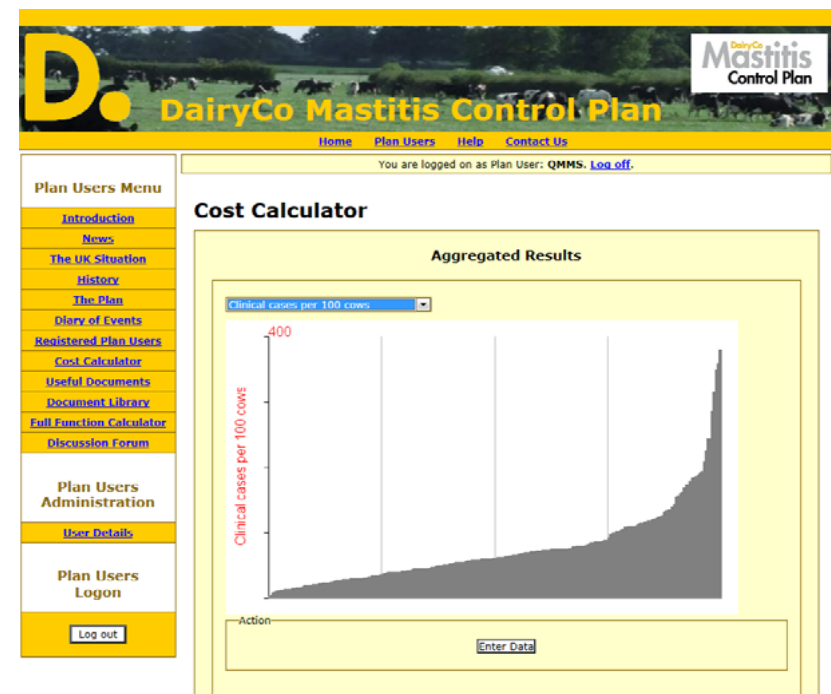


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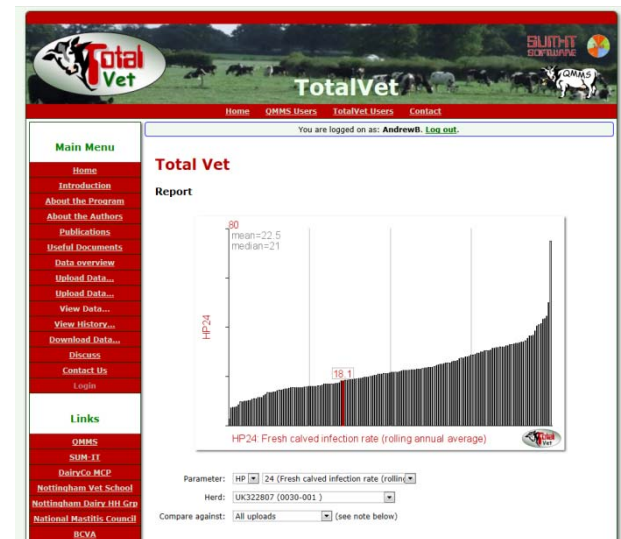
# Benchmarking as Part of a National Scheme

- Used as part of the DairyCo Mastitis Control Plan Initiative in the UK
  - ‘High Level’
  - Limited parameters
  - Insight into potential
  - Cost estimations
  - Motivation
  - Not for intervention
    - Quality less crucial



# Benchmarking Small Groups

- Useful approach in managing herd health
- Actual vs Relative Performance
  - Given point in time
  - Over time
- National comparison
- Support network
- Robust data collation

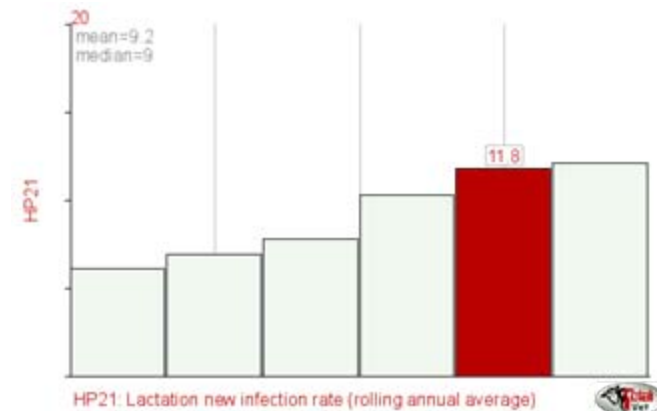
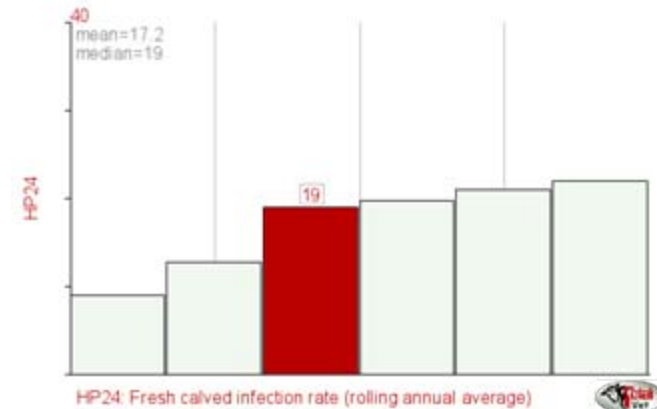
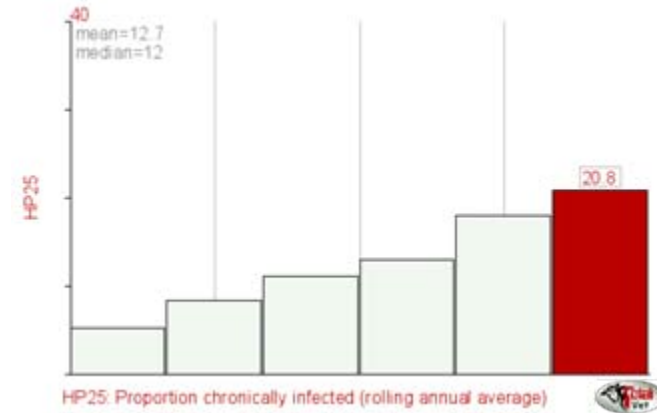


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# Benchmarking Small Groups

- Meaningful analysis possible
- Individual gap analysis
- Comparison of systems
- Discussion of management practices
  - On farm
- Easy knowledge transfer



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# Benchmarking Individual Farms

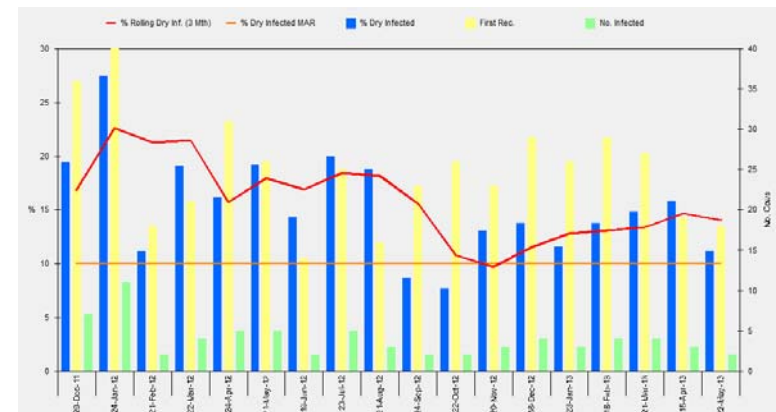
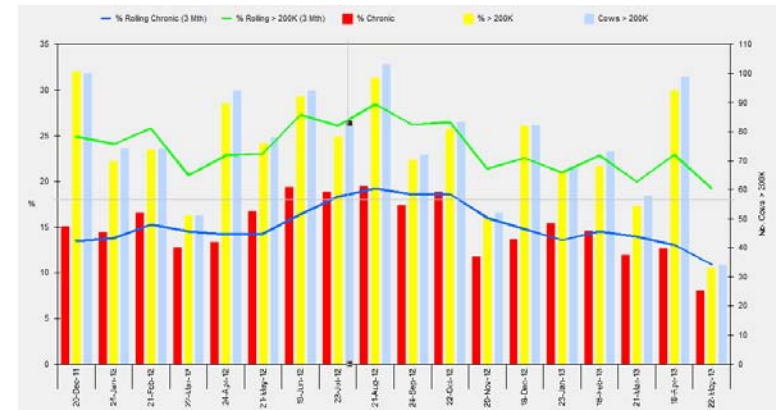
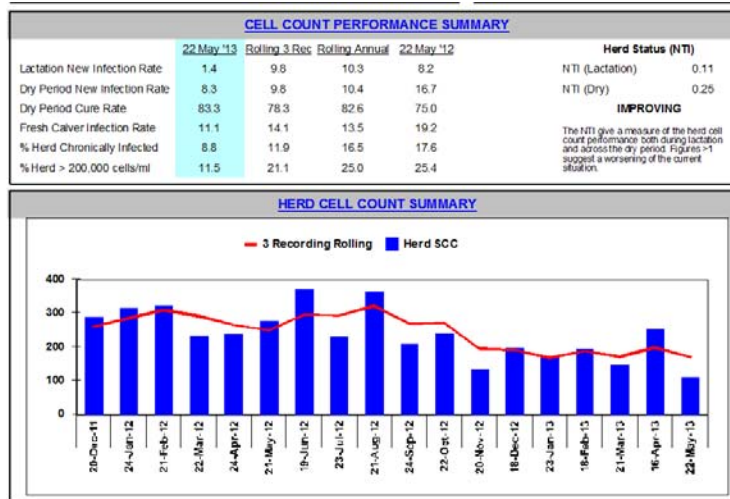
- Broad oversight is useful, but....
- Comparison to self more relevant
  - The 'Purest' form
  - Need to know what's achievable but....
    - Relative performance more important
    - Am I better than last year, quarter, month *etc*
- Should be occurring on **every** farm as part of routine herd health



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# Benchmarking Individual Farms



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# Conclusions

- Benchmarking offer the consultant a useful tool to
  - compare herd performance and facilitate the transfer of best practice
  - monitor herd performance over time
  - improve animal health
- However the consultant needs to be aware of
  - the pitfalls
  - and benchmarking for benchmarkings sake.



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