What is the required Accuracy of a Test related to Genetic Improvement

Dr. Hans Wilmink, June 2006

Report of ICAR/ INTERBULL working group
- Report to ICAR board, 1998
- Objectives:
  - Effect of test interval (with and without measurement error) on accuracy of lactation;
  - Effect of accuracy of lactation on genetic progress;
  - Recommendations to ICAR.

Conclusions
- Milk yield: decrease accuracy meter with 1 kg is equivalent with increase test interval with 1 week
- Till 8 weekly recording, genetic gain is hardly effected
- Tests in mid lactations are best
- Need for reliability measures in 305 day records
- Improve methods to calculate 305 day yields

Recommendations to ICAR
- Be flexible in Recording schemes: offer more options
- Frequency from all milkings to 4-5 tests per 305 days
- ICAR Accuracy of meters can be relaxed (till 7.5%?)
- A lactation record must be transparent (showing accuracy of record)

Conclusions
- More animals in recording better than more tests per animal
- Invest in data quality check:
  - Use of integrated Recording Registration System
  - Most genetic loss by faulty data
  - develop statistics to access accuracy and report to farmers

Effect of measurement error on heritability
Study Galesloot, Ouweltjes, Wilmink (1998)

- Dataset of 4870 lactations with all milking records
- Simulation of the inaccuracy of meter

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<th>Number of tests</th>
<th>Weekly tests interval</th>
<th>Heritability 305 day milk 0.05%</th>
<th>5%</th>
<th>10%</th>
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</table>

Discussion

- Accuracy of meters must be relaxed (till 10%)
- Meters must be unbiased
- Emphasis on reducing costs milk recording
- Invest in:
  - cheap unbiased meters so that data collection process can be more automated
  - reduction of costs for analysis of milk content (allow lower accuracy)