Report of ICAR Working Group on Lactation Calculation Methods

Dr. Filippo Miglior
Agriculture and Agri-Food Canada
Canadian Dairy Network
Guelph, ON, Canada

ICAR Technical Session – Riga, Latvia, June 2010

ICAR Lactation Working Group

- Gerben de Jong, The Netherlands
- Sophie Mattalia, France
- Zengting Liu, Germany
- Mauro Fioretti, Italy
- Larry Schaeffer, Canada
- Paul Van Raden, United States
- Filippo Miglior, Canada
  Chair
Activities

- Collaboration between Germany (VIT) and France (Institut de l’Elevage)
  - Alternate (am/ pm) testing scheme is more and more implemented on the farm level to reduce costs
  - In France Lactocorder is widely used which provides milk yields from both morning and evening milkings. However, 24-hour daily fat and protein yields have to be estimated either from morning or evening milking
  - A new approach was developed by extending the current German model to estimate daily yields, in which the other milk yield of a test-day was considered as an additional covariate
  - The newly developed model was proven to be more suited for estimating daily yields from Lactocorder

Activities in this area

- Belgium (University of Liege & Walloon Breeding Association)
  - Improvement of Best Prediction (BP) method originally developed by Paul VanRaden at AI PL/ USDA, to compute 24hr and lactation yields
  - Labeled as ‘Modified Best Prediction’ mBP
    - The main differences between mBP and BP are the definition of the standard lactation curves and the inclusion of individual genetic value
  - This method can be run daily herd by herd, and farmers can receive results a few days after milk recording
Progress on in-line farm analyzers

➢ The objective is to obtain data from various farms with AfiLab installed
   • No data have been obtained yet
   • In Canada, there are not any AfiLab installed yet
   • In US, 2 University research herds (with AfiLab) have been contacted (Virginia Tech and Florida)
     ▪ Preliminary results from Virginia presented in Toronto at Precision Dairy Farming Conference (2010)
     ▪ Preliminary results presented at farm visit during DHIA conference in March 2010
     ▪ Some fine-tuning is still in progress

Need for an ad-hoc research project

➢ At least 10-15 farms with AfiLab installed for a total of a 1,000 cows

➢ At least 1 year of data
   • From AfiLab
     ▪ all milkings (milk, fat, protein and lactose + SCC info)
   • From DHI
     ▪ 5 days consecutive DHI samplings (one time in summer and one time in winter)
     ▪ Routine test-day milk weights and samples every 4 weeks
Objectives

- Assess the accuracy of fat and protein % of AfiLab vs. the DHI sample (at different lactation stages, parities, and production levels)
- Estimate optimum number of days/milkings to obtain an accurate 24 hr yields of fat and protein
- Estimate phenotypic day-today variability of fat and protein % within cows
- Finally, AfiLab provides some approximate indication of SCC, which should be assessed as well

Summary

- Improved methods have been studied within and outside the WG
- Little progress on research with on-farm milk analyzers
  - Strong need for a well outlined research project