Dairy cow nutrition and needs for lactation - Impacts on postpartum metabolism and reproduction

This symposium arranged by CRU and SLU's Graduate School for Veterinary Medicine and Animal Sciences took place April 5and gathered around 40 participants.

After a brief introduction, Geert Opsomer (University of Gent, Department of Reproduction, Obstetrics and Herd Health Gent, Belgium) presented information on "Metabolic programming in dairy cattle". Based on field studies the results suggest epigenetic regulation of metabolism and growth, related to milk production.

Catherine Disenhaus (AgroCampus, Rennes, France) presented the work of one of her PhD students on the "Ability of dairy cows to ensure reproduction in contrasted grass-based systems". From data gathered during several years, specific reproductive responses of dairy cows to low energy diets were observed in interaction with breed.

Olav Reksen (Norwegian University of Life Sciences, Oslo, Norway) presented very interesting data on the "Relationship between fatty acid profiles in milk, identified by Fourier transform infrared spectroscopy, and onset of luteal activity in Norwegian dairy cattle" and their possible applications to predict the severity of negative energy balance in high producing dairy cows.

The impacts of diet and negative energy balance on gene expression in the endometrium were discussed by Yongzhi Guo, who presented the work of Wiruntita Chankeaw (PhD student, SLU, Uppsala, Sweden). The results obtained following laser microdissection of uterine tissue show specific changes in gene expression as well as specific activation of pro-inflammatory pathways in relation to negative energy balance.

Each speaker had 45 minutes at their disposal and there were very active discussions following each presentation.

Programme

13:00-13:15 Welcome and introduction

13:15-14:00 *Metabolic programming in dairy cattle: results of some field studies*, **Professor Geert Opsomer**, Department of Obstetrics, reproduction and herd health, Gent University

14:00-14:45 *Ability of dairy cows to ensure reproduction in contrasted grass-based systems*, **Professor Catherine Disenhaus**, Agrocampus Ouest, Renne, France

14:45-15:00 Coffee break

15:00-15:45 *Relationship between fatty acid profiles in milk identified by Fourier transform infrared spectroscopy and onset of luteal activity in Norwegian dairy cattle,* **Professor Olav Reksen,** Norwegian University of Life Sciences, Norway

15:45-16:30 Impact of Negative Energy Balance and gene expression in the endometrium, **PhD student Wiruntita Chankeaw**, Dept for Clinical Sciences, swedish University of Agricultural Sciences

16:30 Conclusion and end of day