



## **COST DairyCare SARA Workshop**

**19<sup>th</sup>-20th April 2016**

**Technology Innovation Centre  
Strathclyde University  
Glasgow, Scotland**

### **Overview**

A COST DairyCare sponsored Workshop aimed at the re-examination of the concepts of indigestion and the entity currently known as Sub-Acute Ruminal Acidosis (SARA).

### **Background**

1. Soluble CHO are essential for high production performance in ruminants
2. Too much soluble CHO causes fermentation disorders, currently referred to as either SARA or acute acidosis
3. The syndrome currently known as SARA is difficult to define and hence difficult to measure, diagnose and deal with in a monitoring/response system.

### **Challenges**

1. How can the soluble carbohydrate supplementation in high-production ruminants be optimised?
  - a. How to determine when cows attain their optimum level of soluble carbohydrate intake?
  - b. Can biomarkers that indicate when cattle are approaching or have attained their optimum level of soluble CHO supplementation be identified?
  - c. What is the potential for automated instrumentation for measurement of potentially useful biomarkers?
2. Can the family of problems associated with excessive soluble carbohydrate intake in ruminants be defined?
  - a. Is pH important? If not, why is it used in relation to acidosis in the case definition?
  - b. What other pathogenic pathways should be considered?
    - i. LPS
    - ii. Specific microbes
    - iii. Alcohols
    - iv. Histamine and other biogenic amines
  - c. Should the term SARA be replaced by “indigestion” with several distinct causes and sets of clinical manifestations?

## Workshop Themes/Sessions

1. Nutritional Perspectives
  - a. How is performance affected by soluble carbohydrate intake?
  - b. What is the range of observations for this relationship?
  - c. Currently considered optimal input ranges –. What are the current guidelines and how were they derived?
2. Clinical Perspectives
  - a. How does excessive soluble carbohydrate intake manifest in clinical terms?
  - b. Is SARA a clinical entity? If so, is it a disease of populations or individuals?
  - c. How common is the entity currently known as SARA?
3. Measurement Techniques
  - a. What do the current technologies measure?
  - b. Are any of the current technologies being used in the field?
  - c. What should be measured and can it be measured?
4. Research Perspectives
  - a. Microbiological
  - b. Biochemical
  - c. Physiological and genetic
5. Discussions
  - a. Can a case definition for herds be agreed?
  - b. Can a case definition for individual animals be agreed?

## Structure

The Workshop will take place over a two day period - Tuesday 19<sup>th</sup> April 2016 - Wednesday 20<sup>th</sup> April 2016 - starting at Noon and finishing at Noon at the Technology Innovation Centre - <http://www.strath.ac.uk/conferencingandevents/venues/technologyinnovationcentre/> - Strathclyde University, located in the heart of the City of Glasgow, Scotland, UK. The location is near two main train stations and 15mins by Taxi and 30mins by Bus from the main Airport (Glasgow International). There is also an option to fly into Prestwick Airport (45 mins by train) and Edinburgh Airport (which is around 2hrs by public transport).

*The presentations are all invited and are 30mins plus 5mins in duration. All delegates are invited to bring supporting material which will facilitate and promote discussions during the final session of the Workshop.*

## Programme for DairyCare WG2 SARA Workshop

Tuesday 19<sup>th</sup> April 2016

Technology and Innovation Centre, University of Strathclyde

12.00	Registration and Lunch
12.15-12.30	<b>Welcome: Ivan Andonovic and Jon Moorby</b>
<b>Nutritional Perspectives</b> <i>Chair: Jon Moorby</i>	
12.30-13.05	<b>Ian Lean, Scibus Australia</b> SARA: Nutritional perspectives and thoughts on definitions
13.05-13.40	<b>Finbar Mulligan/Catherine Carty, University College Dublin</b> Subacute ruminal acidosis and low rumen pH in dairy cows: a nutritional perspective including causes and consequences
13.40	Coffee
<b>Clinical Perspectives</b> <i>Chair: Chris Knight</i>	
13.55-14.30	<b>Thomas Wittek, Simone Steiner, UVM Vienna</b> Assessment of rumen metabolism in high yielding dairy cows.
14.30-15.05	<b>Miel Hostens, Universiteit Gent</b> Transforming Big Data into real world evidence for SARA in dairy cows: a veterinary perspective
15.05-15.40	<b>Gotthold Gaebel, Universität Leipzig</b> Challenging the rumen epithelium during SARA periods
<b>Measurement techniques</b> <i>Chair: Ivan Andonovic</i>	
15.55-16.30	<b>Craig Michie, University of Strathclyde</b> The Role of Wireless Measurement Methods in the Detection of SARA
16.30-17.05	<b>Matt Denwood, University of Copenhagen</b> Continuously monitored reticuloruminal pH: what is normal, what is abnormal, and which abnormalities should we worry about?
17.05-17.40	<b>Industry Perspective</b> <i>Shown separately below</i>
18.30	Workshop Dinner Flavours of Scotland menu at City Merchant Restaurant

<b>Industry Perspective</b>		<b>Chair: Nick Jonsson</b>
	<p><b>Will Tully</b> EBVC Ltd, Rural Enterprise Centre (UK)</p> <p><b>John Baines</b> Technical Director, Fullwood Ltd (UK)</p> <p><b>Jamie-Leigh Douglas</b> Ruminant Technical Support Manager, AB Vista (UK)</p>	

**Programme for DairyCare WG2 SARA Workshop**  
 Wednesday 20th April 2016  
 Technology and Innovation Centre, University of Strathclyde

09.00-09.15	<b>Chris Knight, University of Copenhagen</b> DairyCare: an update and future perspective
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<b>Research Perspectives</b>		<b>Chair: Jon Moorby</b>
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09.15-10.00	<b>Nick Jonsson, Glasgow University</b> Definitions of SARA: recent research perspectives
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09.45	Coffee
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<b>Open Forum Discussion</b>		<b>Chair: Malcolm Mitchell</b>
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10.30-11.00	<p>Short 5 minute presentations:</p> <p>How can soluble carbohydrate supplementation in high-production ruminants be optimised?  <i>Evangelia Sossidou and Afroditi Kalogianni, Greece</i></p> <p>How is SARA influenced by genetics, and can we use milk fatty acids as markers of SARA?  <i>Tiia Ariko, Estonia</i></p> <p>Is rumen pH the best biomarker for the consequences of SARA?  <i>Mislav Didara, Croatia</i></p> <p>Is rumen pH relevant, does measuring rumen pH influence it, and how do we diagnose SARA experimentally and on farms?  <i>Clothilde Villot, France</i></p> <p>Can supplementation with mineral buffer mixtures improve the welfare of heat-stressed transition cows?  <i>Irena Celeska, Macedonia</i></p>
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11.00-12.00	Open discussion and formulation of Action Plan
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12.00	Lunch and Depart
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