



HAL
open science

PUFA as tool to improve fertility: hype or significant benefit?

Sébastien Elis

► **To cite this version:**

Sébastien Elis. PUFA as tool to improve fertility: hype or significant benefit?. Feeding for optimal dairy cow fertility: Yes we can?, Feb 2020, Wilrijk, Belgium. hal-02790802

HAL Id: hal-02790802

<https://hal.inrae.fr/hal-02790802v1>

Submitted on 5 Jun 2020

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

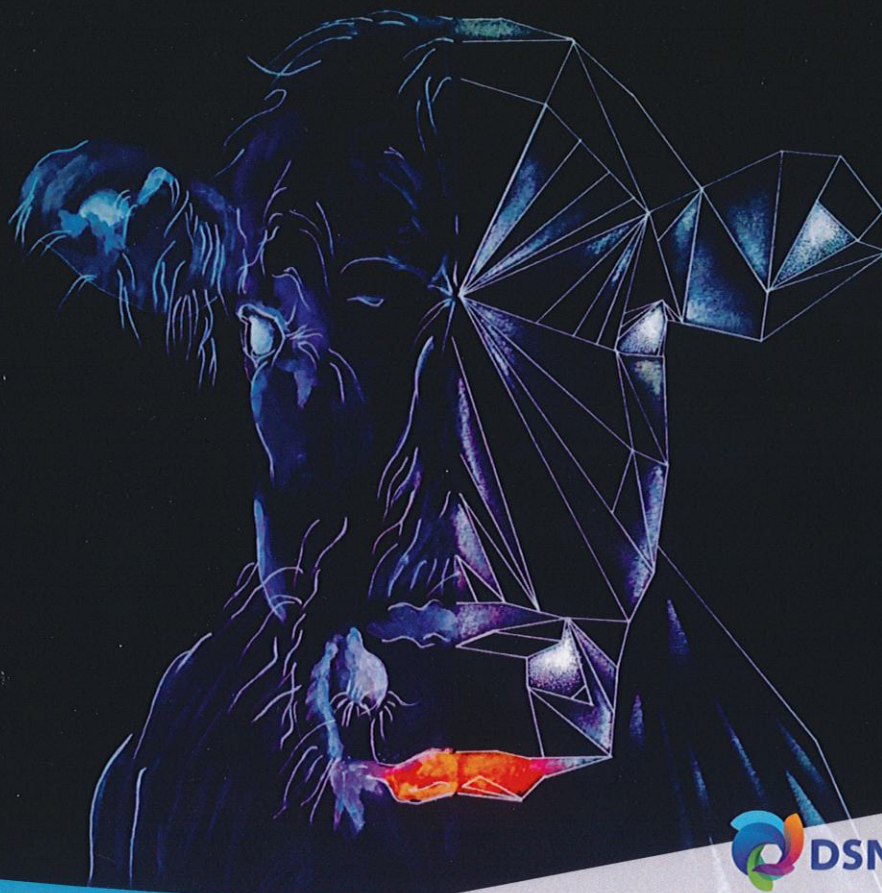
Feeding for optimal dairy cow fertility: Yes we can!

Caring for oocyte and embryo quality

Symposium

February 5th, 2020

University of Antwerp, Wilrijk, Belgium



Veterinary Physiology and Biochemistry
Gamete Research Centre
University of Antwerp

Program

Feeding for optimal dairy cow fertility: yes we can! Caring for oocyte & embryo quality

8:30-9:30 Registration and coffee
9:30-9:40 Welcome (Jo Leroy, Sion Richards, Jessie De Bie, Mar Ateaga)

Session 1 Disappointing fertility in dairy cows: an everlasting management and feeding challenge?

Chair: Sergio Calsamiglia

9:40-10:05 The importance of optimal fertility: a farm and global approach
Sergio Calsamiglia (SP)

10:05-10:30 Metabolic stress & fertility: the mismatch
Jo Leroy (BE)

10:30-10:55 Oxidative stress and subfertility, cause and consequences
Pietro Celi (US)

10:55-11:15 Discussion

11:15-11:45 **Coffee**

Session 2 The impact on oocyte and embryo quality: crucial insights from the lab to understand the bigger picture

Chair: Peter Bols

11:45-11:50 Back to the classroom: reproductive physiology in 2 slides
Peter Bols (BE)

11:50-12:05 NEFAs are toxic for oocyte and embryo quality
Veerle Van Hoeck (BE)

12:05-12:20 Metabolic stress and long term effects on the embryo
Karolien Desmet (NO)

12:20-12:35 Understanding the cellular mechanisms to design solutions
Waleed Marei (BE)

12:35-12:50 Discussion

12:50-14:20 **Lunch, informative booths of sponsors & speed-networking possibilities**

Session 3

Taking care of the oocyte: the latest science-based solutions to optimize oocyte and embryo quality by nutrition: promising science for the daily dairy practice

Chair: Jo Leroy

14:20-14:45 How can oocyte quality be improved in the dish?
Waleed Marei (BE)

14:45-15:10 PUFA as tool to improve fertility: hype or significant benefit?
Sebastien Elis (FR)

15:10-15:35 Recent findings on vitamins in relation to fertility: where should we go? - **Jessie De Bie** (BE)

15:35-15:50 Discussion

15:50-16:20 **Coffee**

Session 4 Back to the field: specific recommendations for optimal dairy cow fertility

Chairs: Irmgard Immig, Filip Florizoone, Jessie De Bie

16:20-17:20 'Managing fertility: the repro toolbox'

Questions based interactive session (bring your smartphone!)
Geert Opsomer (BE), **Jo Leroy** (BE), **Ariette Van Kneegsel** (NL)

17:20-18:20 How to move forward at the feedbunk?
Guidelines for optimal vitamin nutrition

Angel Abuelo (SP, US)

Guidelines for optimal energy and protein nutrition

James Husband (UK)

Guidelines on how to convince the farmer to feed for optimal fertility
Sergio Calsamiglia (SP)

What questions do remain? Homework for the scientists?
Take home message?

18:20-21:00 **Belgian beers & bites**

Presentations available at:



Sebastien Elis

Doctor
Centre INRAE Val de Loire | UMR Physiology of Reproduction
and Behaviors | France



Dr Sebastien Elis became a Doctor in Pharmacy in 2004 after which he did a PhD in reproductive science on oocyte competence. He went to New York in 2008 to start a postdoctoral study in endocrinology. He returned to France in 2009 and is currently working in INRAE (France) for 10 years, investigating the interactions between metabolism and dairy cow reproduction focusing on lipid metabolism and especially n-3 PUFA.

PUFA as tool to improve fertility: hype or significant benefit?

- n-3 PUFA increases the oocyte quality
- n-3 PUFA are especially interesting when dealing with moderate quality oocyte
- moderate improvement only
- the cost-benefit evaluation depends on your activity
- interesting for embryo producing companies
- too expensive in dairy farms for reproduction purpose only