



# Lipogenic and glucogenic compounds: their interaction with rumen metabolism, animal health, product quality and potential as biomarker

Veerle Fievez

Ghent University Laboratory for Animal Nutrition and Animal Product Quality





# Lipogenic vs glucogenic compounds

Udder

milk fat

(lipogenic)

milk protein

(aminogenic)

milk lactose

(glucogenic)

# Lipogenic vs glucogenic compounds









### CH<sub>4</sub> mitigation: alternative H<sub>2</sub> sinks



### **Rumen stoichiometry**







#### **Negative energy balance (NEB)**



#### **NEB** $\Rightarrow$ ketosis & fatty liver ?



### **Fertility**



Leroy, 2005









### Milk odd chain FA ~ propionate Milk iso FA ~ acetate





### Specific milk FA to diagnose ketosis & NEB



### Conclusion

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	Lipogenic	Glucogenic
Rumen metabolism		
Animal health		
Biomarker		

#### Conclusion

	Lipogenic	Glucogenic
Rumen metabolism	Acetic acid ~ $CH_4$	Propionic acid ~ 1/CH <sub>4</sub>
Animal health	Ketosis, fatty liver Fertility	Ketosis, fatty liver Fertility
Biomarker	C18:1c9(/C15:0) ~ ketosis & NEB	