

Correlation between levels of β -hydroxybutyrate and fatty acids in blood and milk and its impact on ketosis diagnosis in dairy cows

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In high producing dairy cows, discrepancy between production needs and energy intake occurs frequently inducing a negative energy balance (NEB) with fat mobilisation and production of ketone bodies. If excessively, accumulation of ketone bodies leads to clinical and subclinical ketosis (SKC).

Symptoms: increased incidence of periparturient diseases
 Decreased milk yield - Poor reproduction performance

Diagnosis: **Gold standard** = Dosage of BHB (β -hydroxybutyrate) and of non- esterified fatty acids (NEFA) in blood

Aim of this study: develop herd-level diagnosis methods of SKC on milk

Material and Methods

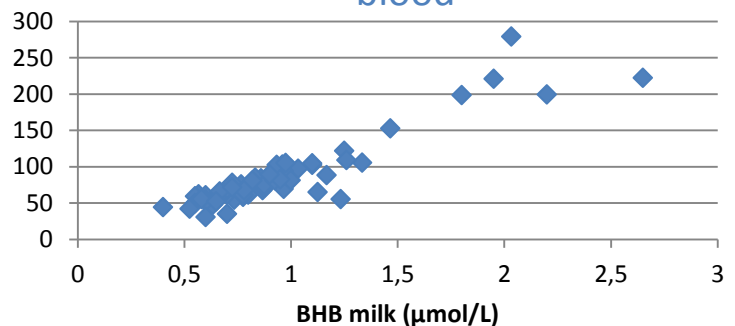
- 75 cows - 8 Herds – 1visit (V)/month till pregnancy diagnosis
- Production levels - reproduction status recorded
- BHB in blood (BHBb): cow-side test (Optium Xceed®)
- BHB in milk (BHBm): colorimetric test (Boehringer)
- NEFA in blood : gas chromatography



Results

r	Correlation NEFA		
	V1	V2	V3
BHBb	0.41	0.48	0.30
BHBm	0.52	0.53	0.38

Correlation between BHB milk and blood



Conclusion: High correlation between BHBb and BHBm decreasing with visit number. Higher correlation between BHBm and NEFA than with BHBb → milk can be used for SKC diagnosis