

**Milk urea:**  
**a promising non-invasive indicator**  
**of SARA in dairy goats**  
**in the context of PLF?**

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**(Modélisation Systémique Appliquée aux Ruminants)**

# Definition and occurrence of **SARA**

High producing ruminants receive diets rich in **highly fermentable ingredients** to satisfy their high requirements

These diets induce a high proportion of organic acids and then the decrease of rumen pH: **acidosis**

- **acute acidosis (pH < 5): *fairly scarce***
- **Sub acute ruminal acidosis or SARA (5.5 < pH < 6.2): *not scarce in HYR***

# Definition and occurrence of SARA

**SARA = sub-acute ruminal acidosis**

- ✓ **Major nutritional disease** in intensive ruminant production
- ✓ Large **among-animals variation** in susceptibility to SARA

# Non-invasive indicator of **SARA** in the context of **PLF** (Precision Livestock Farming)



# Experimental strategy

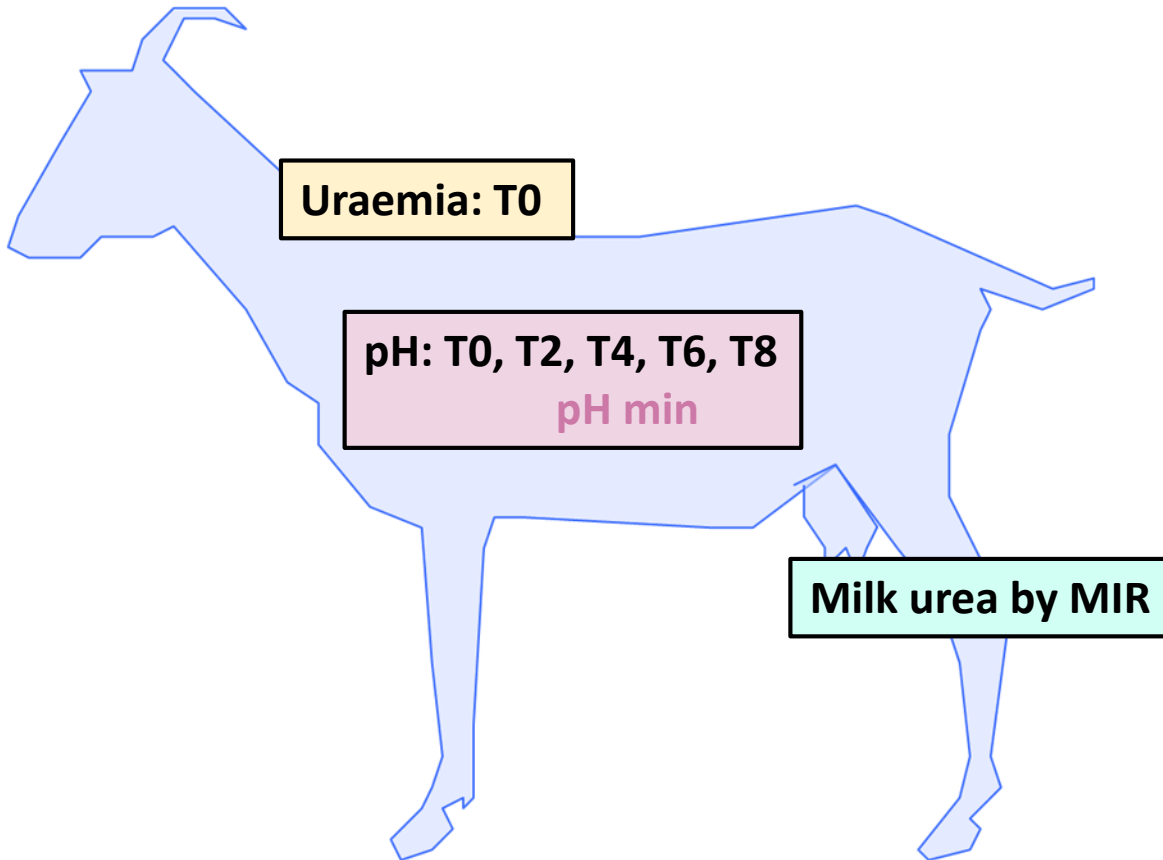
- 8 mid-lactating cannulated goats
- Two diets: 30 vs 60 % concentrate (cross-over)

% DM	D30	D60
Grass Hay	46.6	26.6
Sugar beet pulp silage	23.4	13.4
Concentrate	30.0	60.0

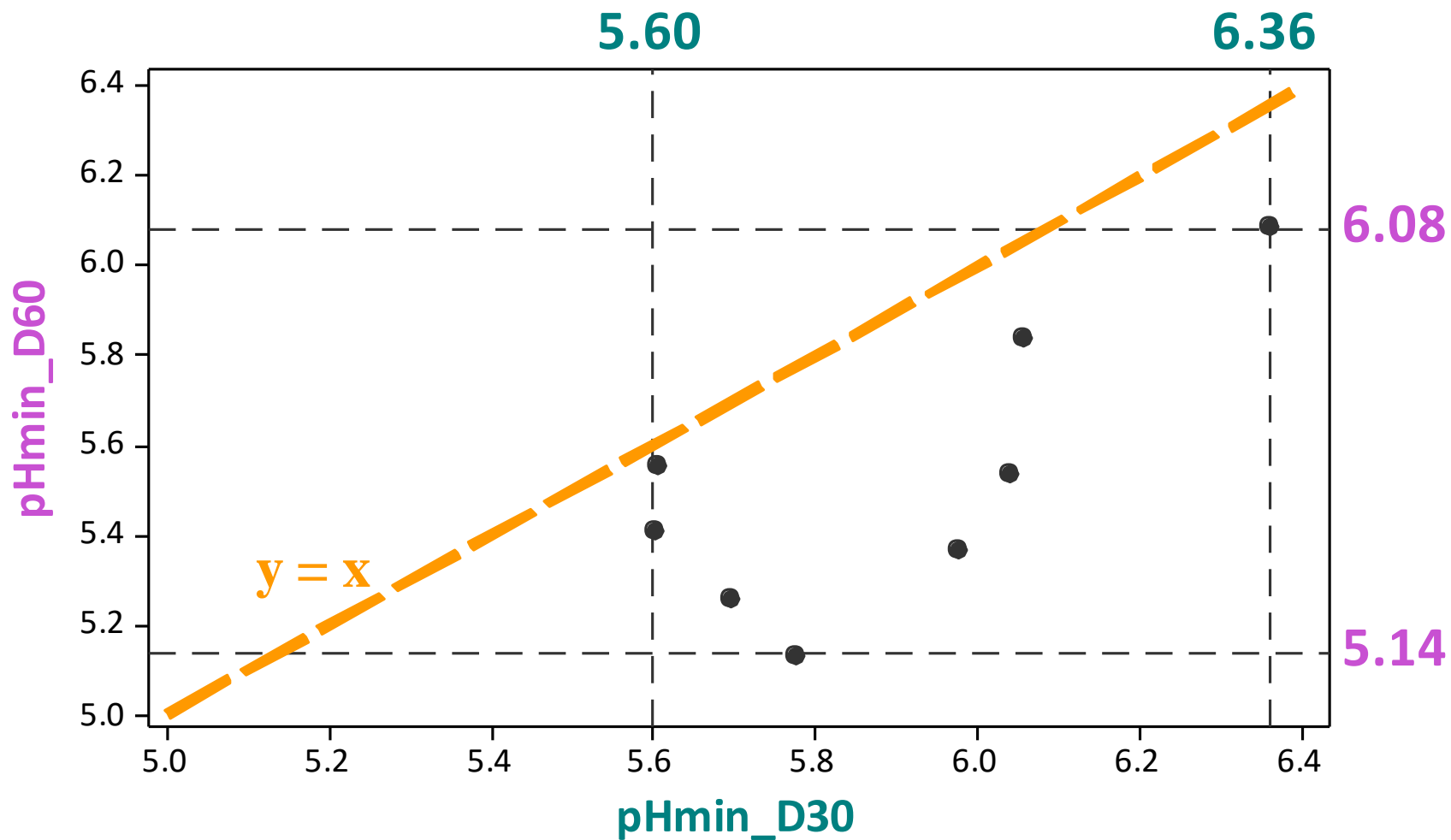
- Two sampling days/goat/diet

(Giger-Reverdin et al., 2014, JDS, 97, 4367–4378)

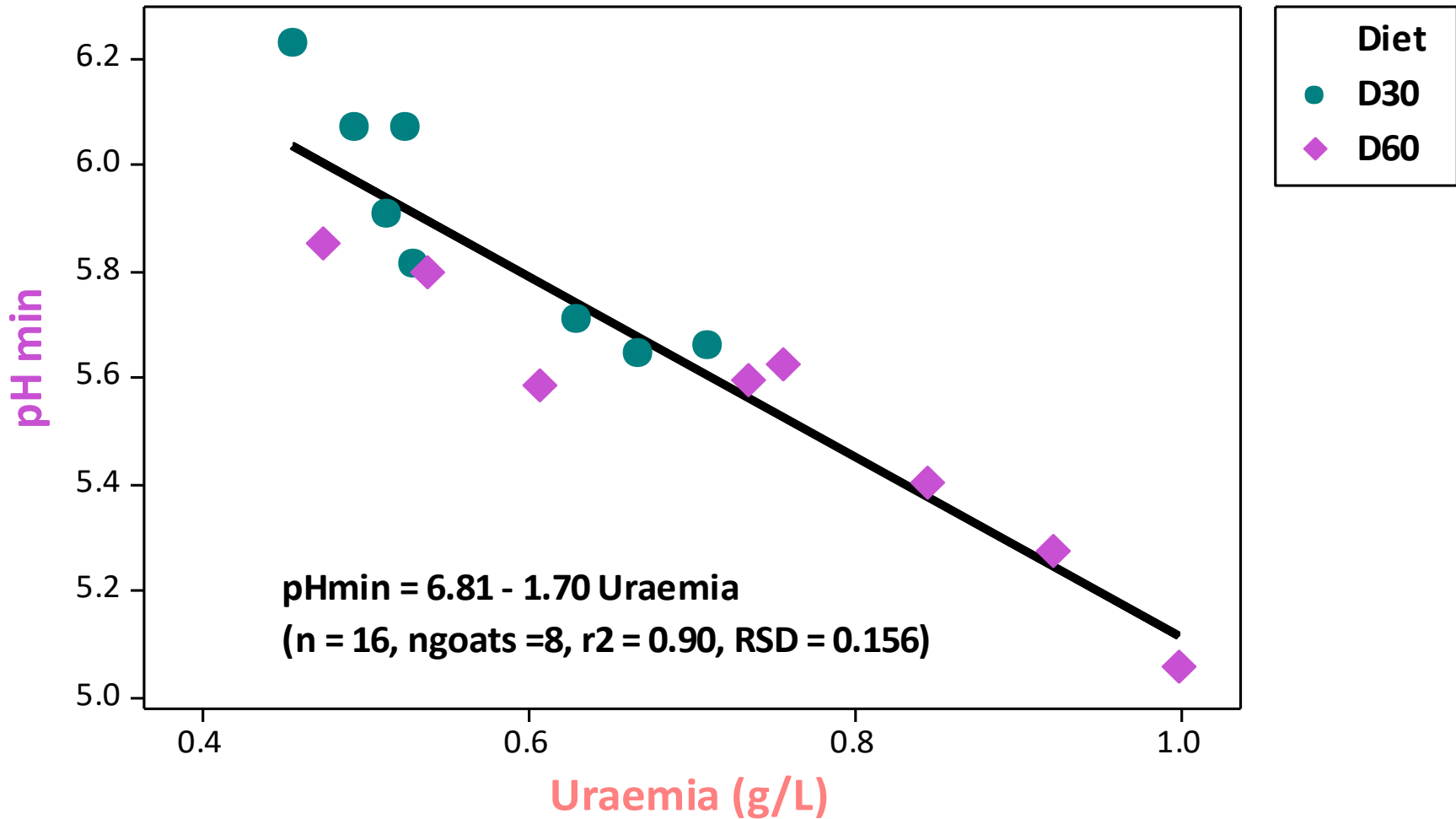
# Samples



## Among-goats variation in pHmin

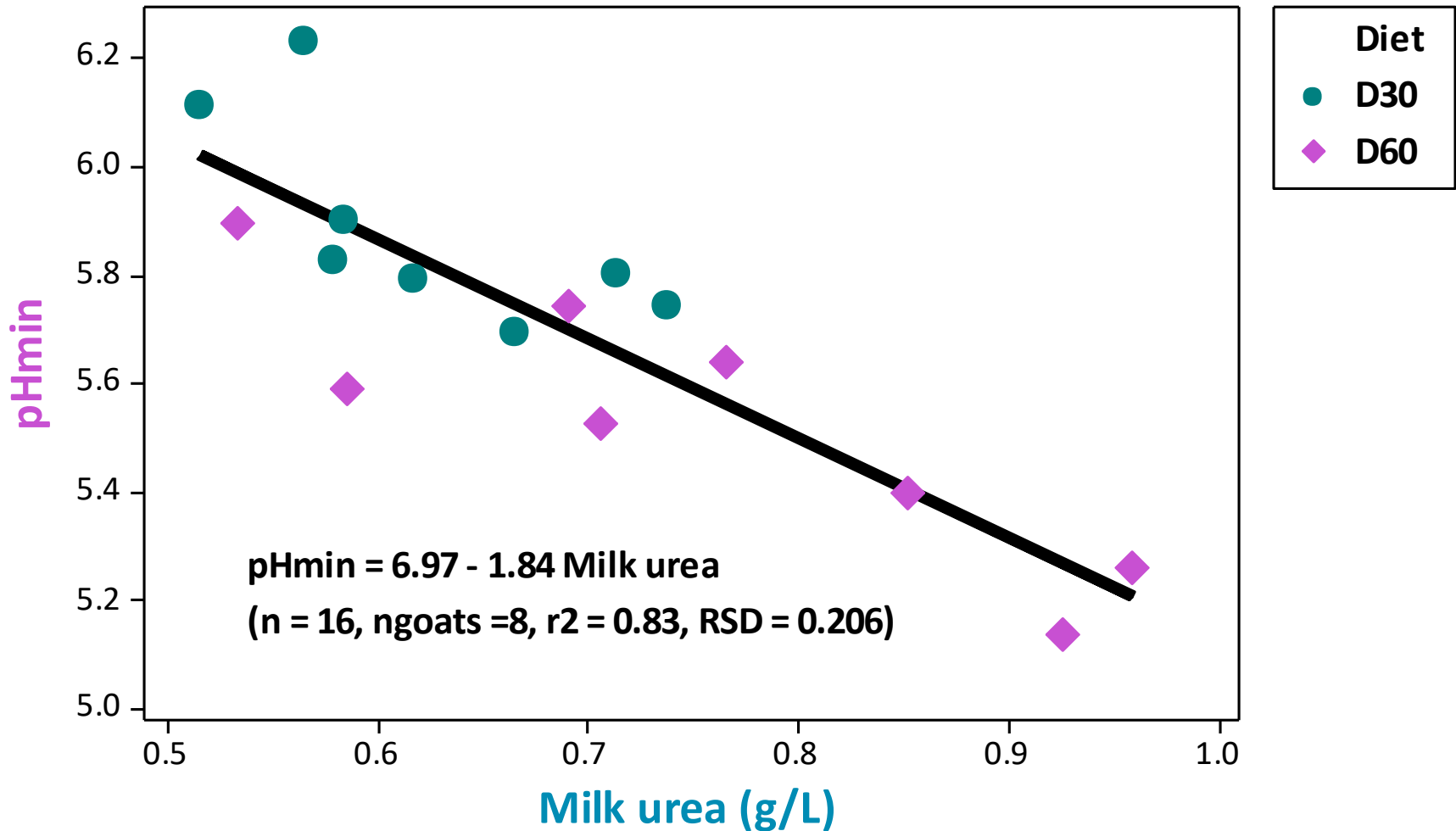


## Relationship between pH min and uraemia

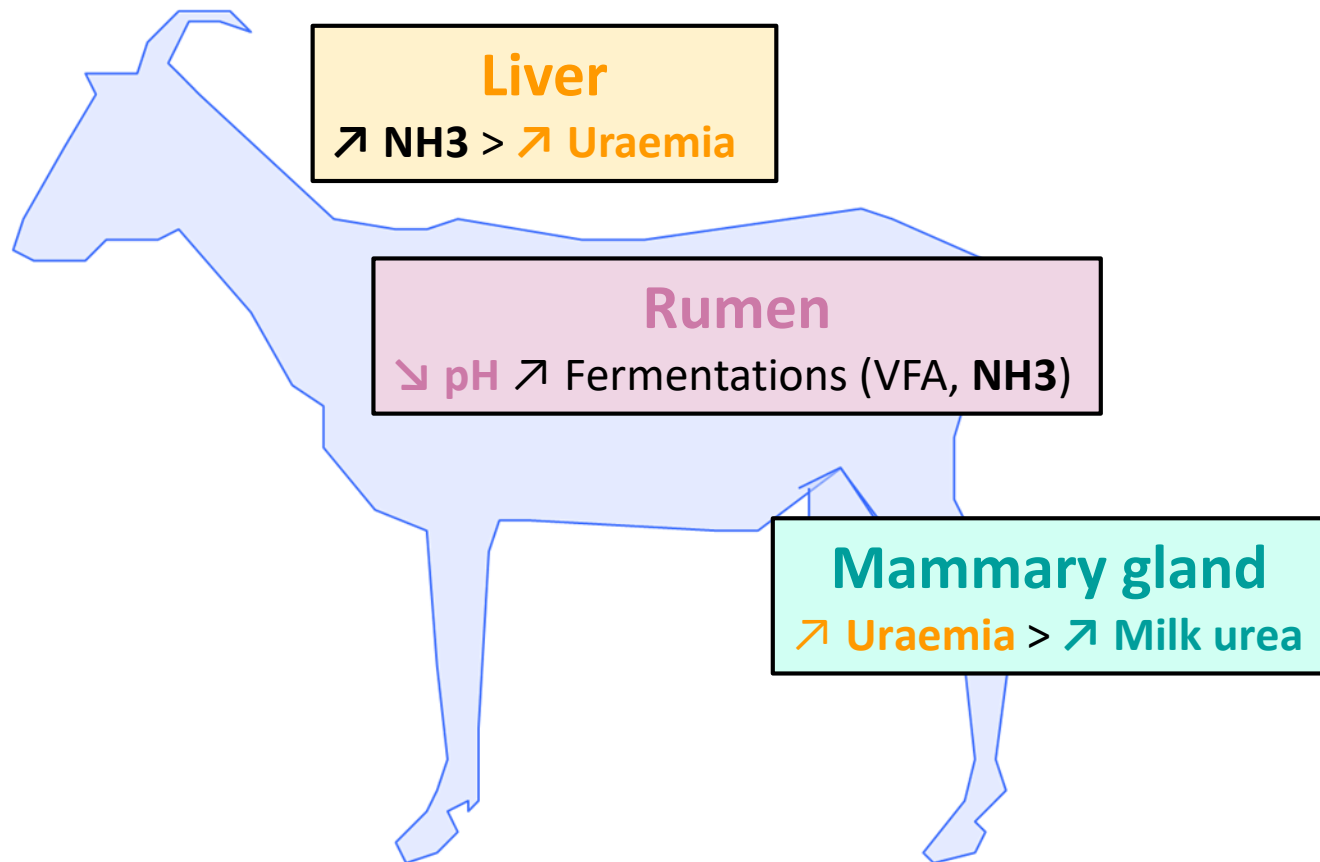




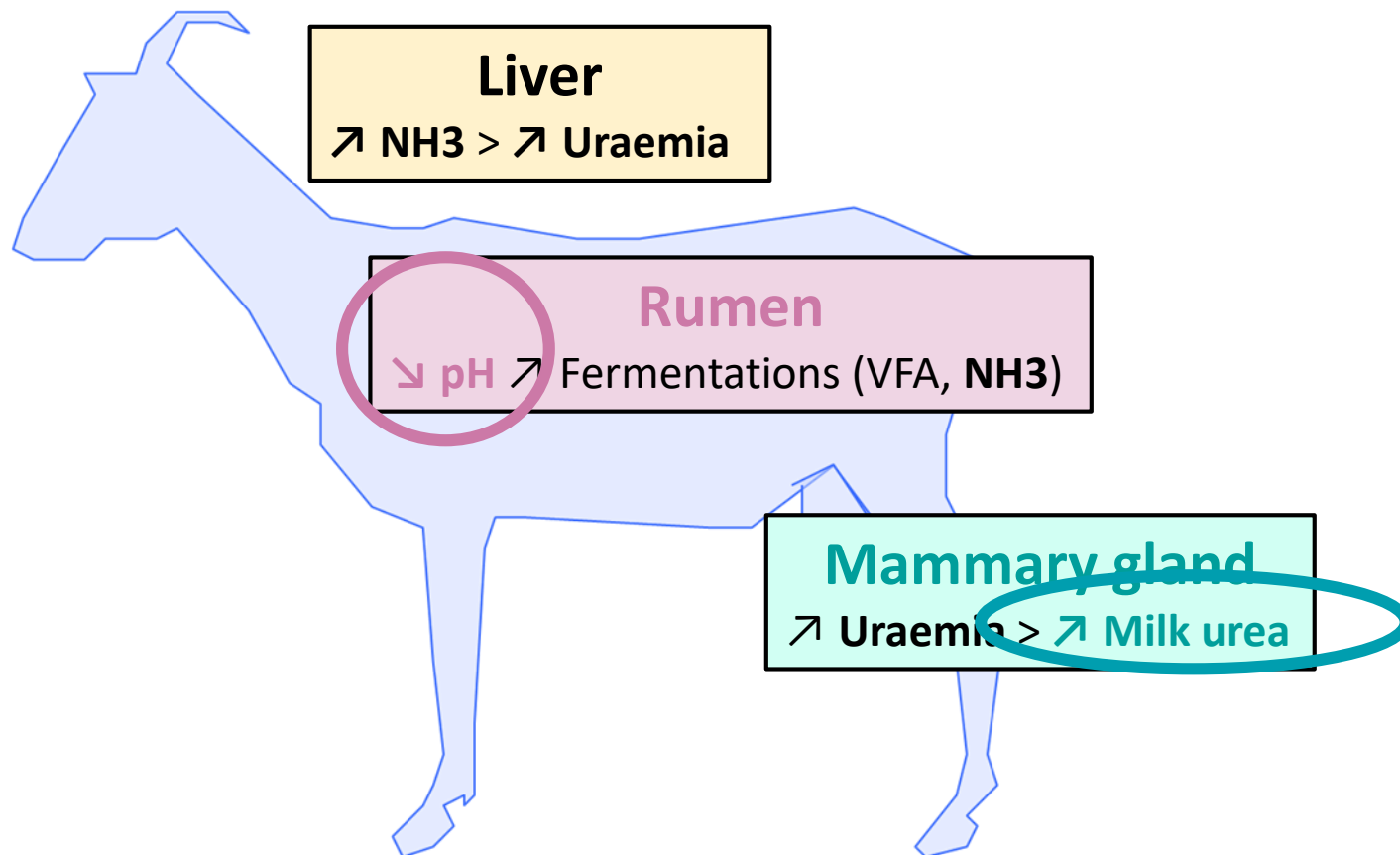
## Relationship between pH min and milk urea



# Within a diet



# Within a diet



# Other dietary variation factors for **milk urea**

- ✓ **Crude protein content**
- ✓ **Fermentable organic matter**
- ✓ **Excess of degradable N in the rumen**

# In conclusion,

**Milk urea** measured by MIR is a promising criterion in the context of **Precision Livestock Farming**, because it is

- individual
- non-invasive
- and unexpensive

# Acknowledgments

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Thank You for your attention