INTAKE RATE EVOLUTION AFTER A CHANGE IN CONCENTRATE PERCENTAGE IN MID-LACTATION GOATS

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(Modélisation Systémique Appliquée aux Ruminants)
Aim of the work

- High milk production is obtained by increasing the dietary concentrate percentage
- This can induce subacute ruminal acidosis (SARA)
- There is a high between-animals variability
- There is a relationship between SARA and feeding behavior

The aim of the work was to study the evolution of the fractional intake rate in mid-lactation goats by either increasing or decreasing the concentrate percentage.
Material and Methods

Control diet (52.5 % concentrate) (12 goats)

Transition: 5 days

Low concentrate diet (35 %) (6 goats)  High concentrate diet (70 %) (6 goats)

TMR *ad libitum* (2 feed allowances per day)
The weight of the feed was recorded every 2 min 22h per day
Definition of fractional intake rate

Proportion of dry matter eaten 90 min after the afternoon feed allowance which corresponded to two thirds of the daily feed allowance (P90).

Giger-Reverdin et al (ISRP, 2009)
Dry matter intake evolution (pm Feed allowance)

P90 = 0.90
P90 = 0.38
Evolution of P90 with the change in concentrate percentage
(example for one goat receiving the L experimental diet)

Day of the experiment

Control
(7 days)

Transition
(5 days)

Experimental diet
(15 days)
Evolution of P90 with the change in concentrate percentage

Day of the experiment

Goat
- L1
- L2
- L3
- L4
- L5
- L6

Control
Transition
Experimental diet

L diet
Evolution of P90 with the change in concentrate percentage

Day of the experiment

L diet

Goat
- L1
- L2
- L3
- L4
- L5
- L6

H diet
- H1
- H2
- H3
- H4
- H5
- H6
Conclusion

Feeding behavior estimated by the P90 index was quickly modified after the change in dietary concentrate percentage. With a lower concentrate percentage, P90 decreased because forage intake rate is lower than concentrate one. With a higher concentrate percentage, some of the goats increased their fractional intake rate, but this increase was followed by a greater decrease in fractional intake rate probably in order to face a subacute ruminal acidosis.

More work is needed to better understand the destructuration of feeding behavior in goats when facing subacute ruminal acidosis.
Thank you for your attention
## Diets composition

### Roughage part:
- Dehydrated alfalfa (45 %)
- Grass hay (55 %)

### Concentrate part:
- Compound feed (70 %)
- Pressed sugar beet pulp (30 %)

<table>
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<th>% DM</th>
<th>Diet L (35 % conc)</th>
<th>Diet H (70 % conc)</th>
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<tr>
<td>CP</td>
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<td>NDF</td>
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<tr>
<td>Ash</td>
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<td>8.4</td>
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</table>

(Serment et al., 2011, JDS, 94, 3960-3972)
On the same trial
