Dairy goat nutrition & management

Teagasc Goat Conference

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InsoGoat
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Who are we?

• September 2014

• Consultancy
  • Independent
  • In The Netherlands and abroad

• Research
  • Practical point of view
  • Reliable
Who are we?
And who are you?
Program

Dutch figures

Dairy goat nutrition
  • Cow vs. goat
  • Vitamins & Minerals
  • Grass

Dairy goat management
  • Long lactations
  • Breeding
  • Pregnancy & Transition
Dutch averages 2014

• 985 milking goats per farm
• 1.086 kg milk/goat/year
• 4.04% fat
• 3.46% protein
• 78.4 kg fat & protein/goat/year
Dairy goat nutrition
Nutrition – Cow vs. goat

- Dividing protein intake by 10
- Natural behaviour
- Needs
- No. of calves/lambs
- Grazing
Nutrition – Vitamins & Minerals

A complex issue because of many interactions!
Nutrition – Calcium

Function
• 98% in bones
• Muscles contractions

Reference values for blood
• 2.2 – 2.9 mmol/L

Important to know
• Also needed during pregnancy
• Vitamin D needed for calcium regulation
Nutrition – Phosphorus

Function
• 80-85% in bones
• Energy metabolism (ATP)

Reference values for blood
• 1.3 – 2.9 mmol/L

Important to know
• Ca : P
Nutrition – Magnesium

Function
- Cation
- Nerve system / muscle contractions

Reference values for blood
- 1.1 – 1.5 mmol/L

Important to know
- Laxative effect in case of excess
Nutrition – Coper

Function
• Enzymes
• Blood formation, structure of hair

Reference values for blood
• 14 – 24 µmol/L

Important to know
• Stored in liver
Nutrition – Zinc

Function
- Enzymes
- Influence on bones, hair, skin

Reference values for blood
- > 8.0 µmol/L

Important to know
- Stored limited in liver, muscles and bones
- Dry udders and skin
Nutrition – Selenium

Function
• Enzym GSH-Px
• Antioxidant

Reference values for blood
• 500 – 1000 IU/g (GSH-Px)

Important to know
• Reference values for cows; 120 – 600
• A goat is very efficient with selenium
Nutrition – Vitamin E

Function
- Immune system
- Antioxidant

Reference values for blood
- > 2.5 µmol/L

Important to know
- Reference values for cows; > 7.5
- Decreases around kidding
Levels of some minerals in English ryegrass and white clover.

<table>
<thead>
<tr>
<th></th>
<th>Ca (g/kg DS)</th>
<th>Mg (g/kg DS)</th>
<th>Cu (mg/kg DS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Ryegrass</td>
<td>4 – 8</td>
<td>1.0 – 3.0</td>
<td>3 – 15</td>
</tr>
<tr>
<td>White clover</td>
<td>10 – 20</td>
<td>1.5 – 4.0</td>
<td>5 – 12</td>
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Nutrition – Clover & goats

• Clover contains a lot of rumen degradable protein
• Energy side of the ration
• Fast digestion
• Risk for diarrhoea (clostridium)

• Drying -> more safe
• Red clover; bit more crude fibre
• < 10% clover
Nutrition – Grass

- A lot of varieties

- Grass silage
  - 45 – 55% dry matter
  - 15 – 18% crude protein
  - <10% crude ash
Dairy goat management
Pregnancy & Transition

• 2 or 3 kids

• Dry period

• NEB

• Highest risk period
  • Ketosis
  • Uterus infections
Colostrum

• Which type of colostrum? And why?

• Antibodies (IgG)

• No own immune system yet

• Fast, Often, Enough, Fresh
Transition management

- Less crude protein
- Improved colostrum quality

- Ad libitum feeding
- Low water troughs
- Hygiene!
Lactation

Consequences long lactations

- Lower winter dip
- Getting pregnant and kidding is a risk period
- Breeding for persistency
Breeding

• Natural breeding or AI
• Long lactations or every year kidding
• One or more kidding periods per year
• Pseudo pregnancy → loss of milk
Breeding out of season

Natural breeding
• Light schedule; 16h darkness and 8h light
• Starting 40 days before
• Bucks and goats

AI
• Synchronisation (?)
• Frozen or fresh semen
Critical success factors

- Milking
- Feeding & water
- Husbandry & housing
- Health & welfare
- Young stock
- Work routines & protocols
- Trained & experienced employees
Dairy goat management, a nice challenge!

Good luck!