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BOOK OF ABSTRACTS



# Goats choose to eat trees when having free choice

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## Introduction

Dutch dairy goat farmers introduced trees on their farms ([www.voederbomen.nl](http://www.voederbomen.nl)) as an additional natural feed source, but more importantly to give goats the possibility to perform their natural feeding behaviour. Since goats naturally are more browsers than grazers, we want to know which part of the ration should be from trees to meet their natural 'demands'. A Norwegian study showed that goats in natural rangeland ate ferns, sedges, blueberry, birch in early summer and a more diverse diet in late summer (Joergensen et al., 2012). We wanted to investigate grazing preference under Dutch conditions, where we have other plant species than in Norway.

## Material

Thirty young female goats (white dairy goats) were released in nature area 'De Leemkuilen'. Later some goats were removed and others were added. The maximum number of goats was 71. The Leemkuilen area is 12 hectares. Half of its surface was covered by a lake, a quarter was covered with grass and herbs and a quarter with young trees and bushes: willow, poplar, birch, elder, blackberry. The goats were fed daily a limited amount of concentrates. A simple wooden shelter (roof on four poles) was available. We observed the eating behaviour and monitored goat health in the period June – August 2013. Every two weeks half a day was spend in the area observing the behaviour of the goats and what they were eating. The observations were done between 10 and 15 o'clock. Fourteen goats were weighed on the first observation day in June and 4 weeks later again. After that date they were too heavy to lift them manually. Body condition was scored from the same 14 goats: during the first observation day and again 4 and 8 weeks later. Body condition was assessed on a scale of 'thin to fat', hair 'dull to shiny' and hoof infections. In September all goats went back to the farm.

## Results

Totally 479 records are available of a goat eating something. The food sources were divided in 'tree' (313 records; 65 %), 'grass' (6 records; 1 %), 'herb' (151 records; 32 %) and 'concentrate' (9 records; 2 %). With 65 % of the records being trees, this category was eaten most frequently: birch 85 records (27 %), willow 69 records (22 %), blackberry 59 records (19 %), poplar 40 records (13 %) and elder 34 records (11 %). The remaining 8 % were salix caprea, wild rose and broom.

Leaves, branches and bark were eaten from the trees. Grass and herbs together were eaten in 33 % of the records. Some of the herbs grew in shallow pools and one goat was repeatedly observed standing in the water till her armpits.

The 14 goats that were weighed, started with a mean body weight of 33.2 kg (28 - 41 kg) and four weeks later their mean body weight was 34.9 kg (28.5 – 44.4 kg). The mean growth per animal was 1.7 kg (- 0.1 – 4.6 kg). The goats grew less fast than their conspecifics that stayed on the farm all the time and which were kept on a ration of grass-clover and concentrates, but after they were moved to the 'barn herd' again, they quickly caught up again with the others (personal information from the owner). The body condition stayed 'good' all the time. No hoof problems were seen.

#### **Discussion (and conclusions)**

Our results show that goats grazing in a Dutch nature area (but also fed daily with concentrates) prefer to eat leaves, branches and bark from trees above grass and herbs. They grow less fast than when kept on the farm and fed grass-clover and concentrates, but their body condition stays good. The farmer reported that they grew fast after their return to the farm and caught up again with the others, which he regards as positive. Goats not only prefer to eat from trees, but they also perform well on it. For the farmers in our project this is good news and they want to continue optimising their system of growing, harvesting, storing and feeding 'fodder trees'.

#### **References**

Joergensen M, Helgesen RML, Moelmann J, Steinshamn H. (2012). Grazing preferences of goats in diverse rangeland. Proceedings EGF-meeting Lublin, Poland.



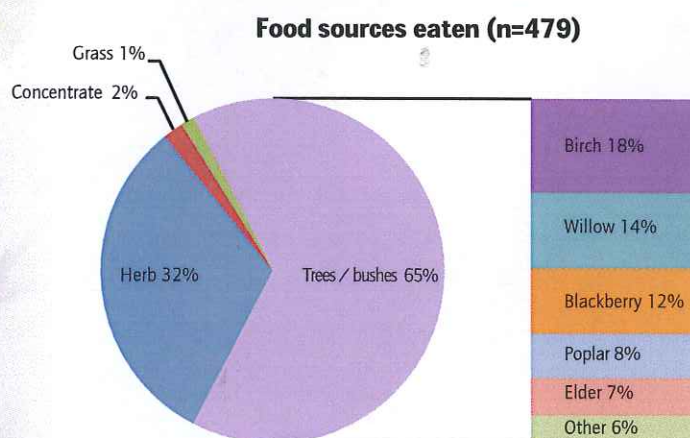
# Goats choose to eat trees when having free choice

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**Introduction** Dutch dairy goat farmers introduced trees on their farms as an additional natural feed source, but more importantly to give goats the possibility to perform their natural feeding behaviour. Since goats naturally are more browsers than grazers, we want to know which part of the ration should be from trees to meet their natural 'demands'.

**Methods** Thirty to 71 young female white dairy goats were released in nature area 'De Leemkuilen': 12 hectares of lake (50%), grass and herbs (25%) and young trees and bushes (25%): willow, poplar, birch, elder, blackberry. We observed the eating behaviour and monitored goat health in June – August 2013.

**Results** Totally 479 records are available of a goat eating something.



The goats (n=14) started with a mean body weight of 33.2 kg (28 - 41 kg). Four weeks later this was 34.9 kg (28.5 - 44.4 kg). After they moved to the 'barn herd', their weight quickly caught up with the others. Body condition stayed 'good' all the time and no hoof problems were seen.

**Conclusion** Goats not only prefer to eat from trees, but they also perform well on it. For the farmers this is good news: they want to continue optimizing their system of growing, harvesting, storing and feeding 'fodder trees'.

