**Title: Precision grazing: spotting animal locations should enhance pasture management**

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**Abstract:**

Successful grazing and pasture management requires an understanding of the adjustment mechanisms behind the grazing behaviour that enable adaptation to grazing conditions. Use of GNSS technology allows the characterization of grazing behaviour, including grazing patterns, paths and favoured areas. Grazing activities can also be differentiated based on speed of movements.

The main objective of the study is to understand how grazing behaviour is affected by biomass availability and nutritive value of pasture across the sward growing season.

Commercial GNSS receptors (commercial of the shelf - COTS: CatTrackTM") were carried six ewes and used during 6 periods collection data over two months of continuous grazing on a natural pasture. Pasture samples were collected in spots defined by a regular grid covering the total paddock area (7ha). Biomass availability, crude protein content and neutral detergent fibre were determined in all pasture samples. Relations were established between the pasture attributes and the tracks and locations used by the animals.

Irrespective of the collection period, animals graze for about 12 h per day. However, when the nutritive value of pasture decays, towards the end of the growing season, animals increase the transit time at expense of the resting time. This increased transit, results in a shift of the feeding areas to patches not previously grazed and with a higher pasture crude protein content.

The increased knowledge conveyed by the use of GNSS receptors in grazing sheep can become an important tool to support the decisions that are essential to a more precise pasture management.