

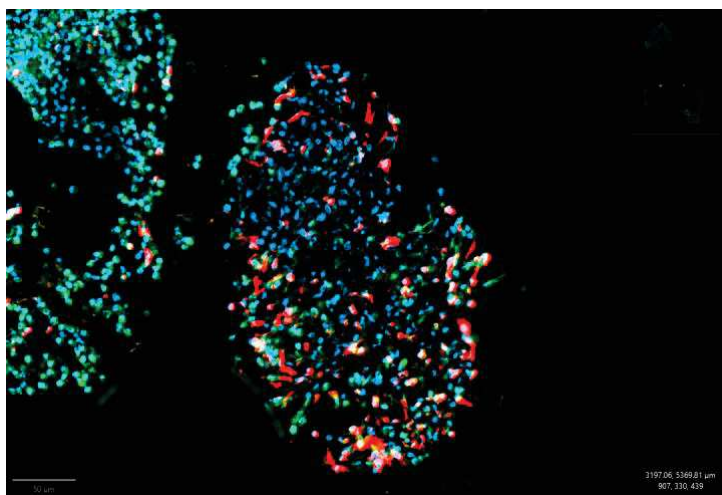
Proceedings of the 11th FARAH-Day

**Faculty of Veterinary Medicine
(University of Liège - Belgium)**

December 19, 2024

One Health

L'Animal et l'Homme, une même santé



Version 2

Posters

15. Smart Grazing: Applying precision farming to monitor goat behavior

Chebli Y.¹, El Otmani S.¹, Chentouf M.¹, and Cabaraux J.F.²

¹. INRA, Regional Agricultural Research Centre, Tangier, Morocco

². Department of veterinary management of animal resources, FARAH, IVT, Faculty of Veterinary Medicine, ULiege

Corresponding author: Youssef.chebli@inra.ma

The recent development of new methods for remotely observing animal behavior using electronic sensors such as global positioning systems (GPS) and three-axis accelerometers to monitor and record behavior at different spatial and temporal scales presents real opportunities for better understanding and interpreting the behaviors of grazing animals. The goal of this study was to distinguish different behavioral categories of grazing goats by combining GPS collars and accelerometers. It was conducted in the mountainous forest rangeland of northern Morocco from an extensive local goat's farm. Eight experimental goats were fitted with GPS collars and leg sensors to monitor their seasonal grazing activities. A calibration study and classification tree analysis were used to predict the grazing activities of goats. According to the results, goats spent most of their time searching for forage in the spring and autumn. Goats prolonged their resting time in summer ($p < 0.001$) at the expense of grazing time. The number of steps was numerically similar and significantly higher in both seasons of summer and autumn ($p < 0.001$). Goats spent 48% of their feeding time grazing (foraging) during the spring season, in contrast to the summer (27%) and autumn (31%). Analysis of GPS collar data showed a significant effect of the season on the measured parameters ($p < 0.001$). Monitoring grazing activities by using GPS collars and sensors provides useful and accurate information, which could be used to manage grazing strategies and optimize animal performances.

16. Plant composition and diversity in a forest-grassland mosaic in the southern Mediterranean region of northern Morocco

Chebli Y.¹, El Otmani S.¹, Chentouf M.¹, and Cabaraux J.F.²

¹. INRA, Regional Agricultural Research Centre, Tangier, Morocco ². Department of veterinary management of animal resources, FARAH, IVT, Faculty of Veterinary Medicine, ULiege

Corresponding author: Youssef.chebli@inra.ma

Forest-grassland mosaics are common features along the boundary between tree and grass dominated ecosystems. However, the Plant composition and diversity in forest-grassland mosaic in northern Morocco are unknown. The aim of this study was to survey the plant composition and diversity of a forest-grassland mosaic in Chefchaouen (northern Morocco). To achieve this goal, a plant species inventory was carried out, and a digital herbarium was constructed. The flora is mainly dominated by Asteraceae, Fabaceae, Poaceae, and Lamiaceae families. Overall, the Mediterranean floristic category was the most dominant in the flora (73.7%) with 264 species. The examined forest-grassland contains a significant number of plant species. The botanical composition had significant variation regarding season and grazing intensity. Three distinct vegetation groups dominate the studied forest-grassland: shrubs, trees, and herbaceous, mainly grasses. The common plants' species identified in the forest-grassland were *Avena alba*, *Brachypodium distachyon*, *Briza maxima*, *Bromus mollis*, *Bromus rigidus*, *Cynodon dactylon*, *Cynosurus echinatus*, *Gaudinia fragilis*, *Hordeum murinum*, *Hyparrhenia hirta*, *Koeleria phleoides*, *Lamarckia aurea*, *Lolium rigidum*, *Trisetaria pumila*, *Vulpia geniculata*, and *Vulpia myuros*. The results emphasize the high floristic diversity of the studied forest-grassland mosaic of Northern Morocco compared to many other regions in the southern Mediterranean side. The protection and maintenance of forest-grassland mosaic is more important than ever, especially for the oak forest-grassland, which requires strict protection to maintain its floristic composition and diversity.