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► **To cite this version:**

Waâd Nasri, Fabien Stark, Noémie Amposta, Margot Lamarque, Charlotte Allain, et al.. Feed autonomy and manure's recycling of dairy sheep farming systems in Roquefort (France). 74th Annual Meeting of the European Federation of Animal Science, Aug 2023, Lyon, France. Wageningen Academic Publishers, 29, pp.706, Book of Abstracts of the 74th Annual Meeting of the European Federation of Animal Science. 10.3920/978-90-8686-936-7. hal-04195788

HAL Id: hal-04195788

<https://hal.inrae.fr/hal-04195788>

Submitted on 4 Sep 2023

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Book of Abstracts of the 74th Annual Meeting of the European Federation of Animal Science



**Book of abstracts No. 29 (2023)
Lyon, France
26 August – 1 September, 2023**

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Session 59

Feed autonomy and manure's recycling of dairy sheep farming systems in Roquefort (France)

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The aim of this work was to identify the main gaps and opportunities for increasing the efficiency and autonomy in the use of resources (i.e. natural, farm- or locally-produced, external or imported), as well as the resilience to climate change in dairy sheep farming systems (DSFS). The DSFS from the INRAE Experimental Farm La Fage (43°54'54.52"N; 3°05'38.11"E) was chosen as a typical case study, representative from the Roquefort region, the main production basin for sheep milk in France. Firstly, a deep characterization was carried out with the aim of diagnosing the global functioning of the DSFS; then its nutrient flows were analysed using Ecological Network Analysis. A second step was looking to identify the main opportunities for building future DSFS through a multi-stakeholder platform. A historical dataset for the period 2015-2019 was collected, organized, processed, analysed and interpreted. Detailed features of each DSFS component and interactions between them were detailed in the deep characterization phase. The main components of the DSFS are: the flock (n=608 females; 70% ewes and 30% hogget), feeding resources, infrastructures (buildings, sheds, etc.) and manure stockpile. The feeding system is based on improved (96%) and native (4%) grasslands both used for direct grazing and producing roughage. The grazing rate is 12% while the indoors feeding covers 88% of the yearly flock consumption. Main gaps are related to the feeding system and manure use. In fact, the quantity of purchased feed keeps increasing (from 7 to 30% during 2015-2019), contrarily to the quantity of on-farm produced feedstuffs (from 92 to 70%). There are considerable nitrogen losses mainly by leaching and by volatilization during manure's storage and spreading. There are opportunities for increasing feed and forage autonomy of the farm as well as for optimising processes for organic matter recycling, conservation and use.

Acknowledgements: This work is part of the TRUSTFARM project carried out under the ERA-Net Cofund FOSC (Grant N° 862555).