RETASTE Conference Abstracts
RETASTE-AAF-1504-In-person Oral
Rethymno, September 16-18, 2026
© Author(s) 2026 CC BY 4.0 License
DOI:10.5281/zenodo.23678251

From Field to Feed: HMU's Experiments on Solar-Assisted Drying and Ensiling of Rye in the NUTRIFEEDS Project

F. Galliou, A. Papadaki, K. Katrini, N. Markakis, I. Christoforakis, C. Moschou and T. Manios

Hellenic Mediterranean University, Greece

Abstract

Within the Horizon Europe project NUTRIFEEDS (GA No. 101179992), which develops regenerative livestock feed solutions from underutilised local plant resources and agri-food by-products, the Hellenic Mediterranean University (HMU) is investigating solar-assisted drying and fermentation as complementary, low-energy processing pathways for alternative feed production. This work presents experimental trials conducted at HMU using rye as a model feedstock. Rye was first processed in a pilot-scale solar drying unit to evaluate the efficiency of solar-driven moisture reduction, monitoring drying rate, final moisture content and energy input relative to substrate mass, in line with the project's objective of reducing the energy footprint of feed preservation. In parallel, an ensiling trial of rye was prepared to assess fermentation-based preservation as an alternative or complementary pathway to feed production, targeting adequate pH reduction and fermentation quality for stable storage. Both processing routes were implemented to meet NUTRIFEEDS' technical requirements for the characterisation of resulting feed products, with quality parameters (moisture content, fermentation profile, physical and nutritional characteristics) assessed to determine their suitability for downstream use. The resulting solar-dried and ensiled rye products are intended for further evaluation in livestock feeding applications within the project. These field-to-feed trials demonstrate the practical feasibility of combining solar drying and ensiling as sustainable, low-input processing pathways for alternative feed ingredients, supporting NUTRIFEEDS' broader goal of valorising local agricultural resources for regenerative animal nutrition.

Keywords: solar drying, ensiling, rye, alternative feed, regenerative animal nutrition

Acknowledgments: This research is funded by the European Union for the project with title “Nourishing Europe's Future through Regenerative Livestock Feed”, project number 101179992 and project acronym “NUTRIFEEDS”.

ACCEPTED