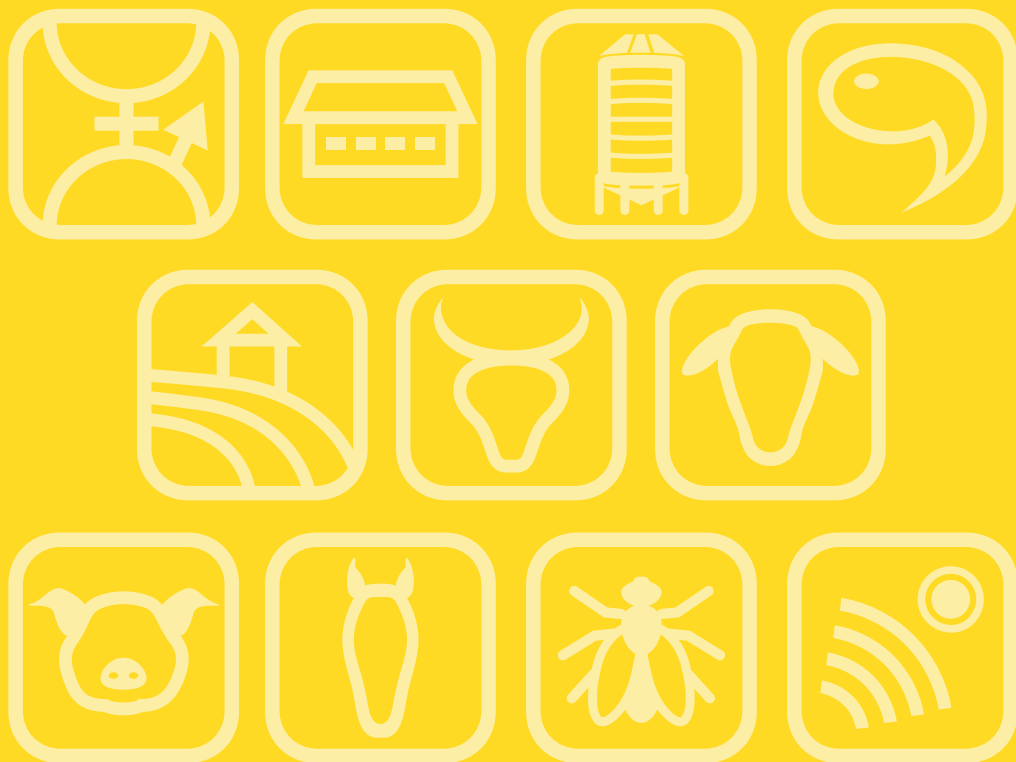


Book of Abstracts

of the 75th Annual Meeting
of the European Federation of Animal Science



Book of Abstracts No. 34 (2024)
Florence, Italy
1-5 September, 2024

**Book of Abstracts of the 75th Annual Meeting of the
European Federation of Animal Science**



EAAP

European Federation of Animal Science

The European Federation of Animal Science wishes to express its appreciation to the Ministero dell'agricoltura, della sovranità alimentare e delle foreste (Italy) and the Associazione Italiana Allevatori (Italy) for their valuable support of its activities.

Book of Abstracts of the 75th Annual Meeting of the European Federation of Animal Science

Florence, Italy, 1st – 5th September, 2024



EAAP Scientific Committee:

F. Miglior
L. Pinotti
L. Boyle
D. Kenny
M. Lee
M. De Marchi
G. Hadjipavlou
S. Millet
R. Evans
L. Gasco
J. Maselyne
G. Pollott (secretary)
H. Spoolder (chair)

This work is subject to copyright. All rights are reserved, whether the whole or part of the material is concerned. Nothing from this publication may be translated, reproduced, stored in a computerised system or published in any form or in any manner, including electronic, mechanical, reprographic or photographic, without prior written permission from the publisher:

EAAP
Via G. Tomassetti 3 A/1
Rome (Italy)
www.eaap.org
eaap@eaap.org

ISBN: 979-12-210-6769-9

First published, 2024

© EAAP, 2024



The individual contributions in this publication and any liabilities arising from them remain the responsibility of the authors.

The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of the European Federation of Animal Science concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The publisher is not responsible for possible damages, which could be a result of content derived from this publication.

Herbal supplementation in dairy cows' diet: impact on rumen, milk and cheese microbiota

G. Dallavalle^{1,3}, S. Massaro², J. Andersen¹, A. Mancini¹, L. Palmieri¹, U. Vrhovsek¹, A. Angeli¹, D. Giannuzzi², F. Tagliapietra², E. Franciosi¹

¹ Fondazione Edmund Mach, Research and Innovation Centre (CRI), Via E.Mach,1, 38098 San Michele a/A, Italy, ² University of Padova, DAFNAE, Viale dell'Università 16, 35020 Legnaro, Italy, ³ University of Padova, Department of Industrial Engineering (DII), Via Gradenigo, 6/a, 35131 Padova, Italy

The study aimed to evaluate the effects of including *Echinacea purpurea* (EP) and *Galium odoratum* (GO) in cows' diet, on rumen microbiota and on microbiological quality of milk and cheese. EP was chosen in a circular economy view using the plant residues obtained from the production of the mother dye, in this process aerial part is considered a waste and a cost for industries. Several studies showed an association between EP supplementation, immunomodulation and reduction of inflammation. GO was chosen for its diuretic, anti-inflammatory properties and for its prevalence in Vezzena Plateau's pastures, an area that could be restored with GO after the Vaia Storm damage. A group of 9 dairy cows were fed with a total mixed ration (TMR) diet for 3 weeks. In the second week 3 out of the 9 cows were supplemented with EP and 3 with GO. Herbs were gradually added to the daily TMR to get the dairy cows used to the new feed avoiding any negative effects on feed intake, rumen environment or milk production. Individual milk and rumen liquid samples were collected from each cow. Milk samples were used for experimental production of mini-cheeses (about 200g each one). Milk and cheese were homogenized, decimally diluted and plated for the research of coliforms, mesophilic and thermophilic lactic acid bacteria. Microbial DNA from rumen samples was extracted and sequenced by MiSeq Illumina NGS methodology. As preliminary results, the supplementation of herbs didn't have a significant impact on milk or cheese microbial population. An increase in *Verrucomicrobia* and *Fibrobacter* taxa was observed in rumen microbiota after GO supplementation. *Verrucomicrobia* taxa are about 1% of rumen microbiota, they are found in diets rich in "low quality" forage. *Fibrobacter* taxa are important fiber degraders and volatile fatty acid (VFA) producers. Results obtained on ruminal microbiota suggest a potential use of these plants in cows' diet.

Chemical characterization and phenolic content of winery and grape by-products as potential feed supplement

K. Simeonidis¹, G. Pastorelli¹, L. Pinotti¹, M. Ottoboni¹, E. Attard²

¹ University of Milan, Department of Veterinary Medicine and Animal Sciences, Via dell'Università 6, 26900 Lodi, Italy, ² Institute of Earth System, Division of Rural Sciences and Food Systems, University of Malta, MSD 2080 Msida, Malta

Circular economy has received significant attention for considering both agro-industrial sustainability and socio-economic concerns, seeking for innovative solutions for waste disposal. The agri-food sector stands out for its production of by-products, many of which are used as animal feed. Grapes are one of the most cultivated fruit crops globally, with approximately 67 million tons produced annually. These sectors generate up to 20% waste biomass in the form of grape skin, seeds, stems, and residual pulp, known as grape pomace. The potential benefits of grape by-products (GP) provided by bioactive compounds deserve exploration when considering their addition in formulations. Moreover, they seem to potentially reduce enteric methane when fed to ruminants. The aim of this study was to analyse seven grape by-products (GP1 to GP7) to determine their chemical composition, polyphenolic content, as well as flavonoid and anthocyanin profiles. All GP showed an excellent content of PG (18-23%) and EE content, mostly in GP2 (12.11 %) as seed part. Fibre content aligns with literature, with NDF ranging from 25.52 to 48.80 and ADF from 27.80 to 32.19 (DM basis). The analysis reveal that GPs possess rich polyphenolic content (2.90-17.72 mg/g GAE) sequenced as GP7>GP6>GP5>GP4>GP3>GP2>GP1 and anthocyanin (278-2810 mg/kg) sequenced as GP1 >GP3>GP5>GP4>GP7>GP6>GP2. These characteristics alongside nutritional value suggest their potential as valuable supplements in animal feed aligning with the principles of circular economy and offering both environmental and economic benefits.