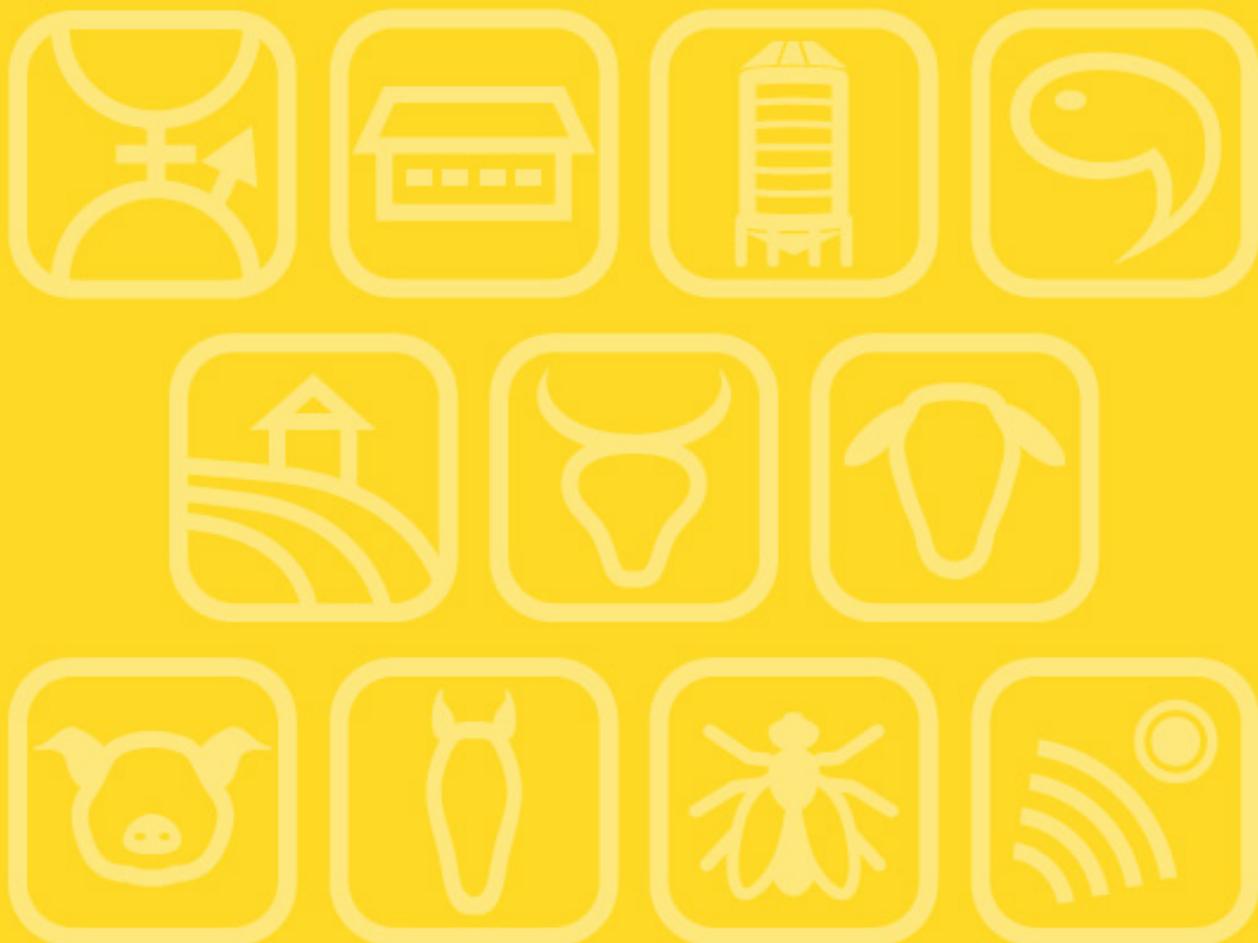


Book of Abstracts of the 74th Annual Meeting of the European Federation of Animal Science



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Lyon, France
26 August – 1 September, 2023

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The role of rumen health (acetate) on milk fat synthesis and dietary strategies to increase milk fat*K.J. Harvatine and C. Matamoros**Penn State University, Department of Animal Science, University Park, PA 16802, USA; kjh182@psu.edu*

Major advances have been made over the past 25 years in our understanding of milk fat synthesis. Nutritionally, milk fat depression (MFD) can decrease milk fat by up to 50% and garnered most of the research interest for years. Bioactive intermediates of ruminal fatty acid biohydrogenation were identified as the causative factor and provided insight into the regulation of mammary lipogenesis and led to targeted approaches to manage milk fat. Large changes in milk fat are undoubtedly due to these bioactives, but recent work has shown that other nutritional factors can have smaller impacts on milk fat and are economically important. Milk fat synthesis requires acetate as a source of carbon and reducing equivalents. We initially ruminally infused acetate to investigate the effect of acetate spared during MFD on adipose tissue metabolism and observed an unexpected increase in milk fat yield. We then conducted a dose titration experiment and observed a maximal response of 220 g of milk fat with a ruminal infusion of 600 g of acetate. The increase in milk fat has also been observed when feeding sodium acetate in a total mixed ration. The response has been consistent, and further experiments have found no interaction with dietary starch, fibre digestibility, or unsaturated fatty acids despite the potential for these factors to change rumen fermentation. Acetate also did not interact with *trans*-10, *cis*-12 CLA, indicating that the mechanism is likely independent of bioactive FA that cause MFD. It is still unclear if acetate increases milk fat simply by increasing substrate to the mammary gland or if it increases metabolic capacity by changing cellular physiology. Although sodium acetate supplementation is not practical, this work highlights the importance of fibre digestibility and maintaining optimal rumen function. Genetic selection is increasing the potential for milk fat synthesis and acetate supply will likely be increasingly important to meet genetic potential. Thus, maximizing milk fat yield requires not just minimizing MFD, but also optimizing acetate supply and other dietary and management factors.

EUNetHorse-European network to improve the resilience and the performance of equine farms*M. Addes**French Horse and Riding Institute, La Jumenterie du Pin, 61310 Exmes, France; marlene.addes@ifce.fr*

The overall objective of EUNetHorse is to establish an active multi-stakeholder network in France, Portugal, Spain, Belgium, Germany, Romania, Poland, and Finland, in order to increase the resilience and performance of their equine farms to face environmental, social, health, economic or political crises by widely disseminating practices, tools and solutions that improve (1) their resilience and socio-economic performance, (2) animal welfare and health on farms, and (3) the environmental sustainability of the sector. To achieve this, EUNetHorse will: (1) increase the flow of practical information between farmers in these 8 countries in a geographically balanced way and taking into account the differences between territories by structuring National-Horse AKISs in each country; (2) collect and assess grassroots solutions and practices, disseminate best practices and solutions on the three thematic areas mentioned above replying to specific needs; (3) achieve a greater user acceptance of the collected solutions and best practices, through cross-fertilisation between all actors of the sector (horse breeders, advisors, trainers, technical experts, scientists, policy makers, sector representatives, etc.) and all levels (local, regional, national and European), during exchange activities allowing peer-to-peer learning, such as workshops, demonstration days, training and cross visits; (4) maintain the practical knowledge in the long term – beyond the project period – by sharing the full set of project results on the EUFarmbook platform accessible to all, by training advisors and trainers during the project on these topics, by setting up a sustainable network of trainers and advisors who can continue to train equine farmers and disseminate these solutions using the training kit made available through their activities with equine farmers.