Book of Abstracts

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

EAAP · EUROPA · FEZ · EVT · EAX

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

Water Quality: Manganese in drinking water for dairy cattle

O. Moreira[1], J. Martins[2], R. Lucas[3], R. Branco[4]
[1] Instituto Nacional de Investigação Agrária, Quinta da Fonte Boa, Vale de Santarém, 2005-048 Santarém, Portugal, [2] Instituto Mediterrâneo para a Agricultura, Ambiente e Desenvolvimento, Zootecnia, Universidade de Évora, Pólo da Mitra, Ap. 94, 7002-554 Évora, Portugal, [3] Centro de Estudos e Formação Avançada em Gestão e Economia, Economia, Palácio do Vimioso, Largo Marquês de Marialva, n.º 8, 7002-554 Évora, Portugal, [4] Universidade Lusófona de Humanidades e Tecnologias, Medicina Veterinária, Campo Grande, 376, 1749-024 Lisboa, Portugal

Climate change affects livestock systems through direct impacts on the physiology, behavior, production and welfare of animals and indirectly through the availability, composition and quality of food. Water is essential for the life of animals, since it intervenes in various metabolic processes. An inadequate water supply could reduce the health and performance of the animals. In dairy farms, the use of quality water is essential to maximize the milk production of animals. The aim of this study is to see if water quality (excess manganese) affects production, reproduction and health in dairy cows. The study was carried out on a dairy farm in Alentejo-Portugal. The objective was to verify whether there were any effects of manganese toxicity. Two experimental groups were established, balanced for: Age, Number of calvings, Milk butyric content, Milk protein content. All the experimental groups were in the same conditions: Farm/stable, feed, ambient temperature and humidity, same number of drinking troughs, same trough space, same feed distribution time, same farm health management. Variation factor – manganese concentration: Treated group <50 µg/L (DGAV, 2014), Untreated group >1500 µg/L. Blood, urine and milk samples were taken over a 4-month period. The preliminary results show that the group of animals without treated water (excess manganese) has a 22% reduction in the consumption of kg of feed and 26% in water consumption; – 879 litres/lactation; -2.8L/cow/day; + 63 days of drought; + 2.4 inseminations; + 57 days of calving interval; + 33% embryonic mortality rate; +19% use of oestrus synchronization protocols.

Systematic review of serious games on livestock and how they consider sustainability

G. Martel[1], M. Grillot[2], S. Dernat[3]
[1] INRAE, Institut Agro Rennes-Angers, ESA Angers, UMR BAGAP, 55 rue rabelais, 49000 Angers, France, [2] INRAE, Univ Toulouse, INP-ENSAT, UMR AGIR, 24, chemin de Borde-Rouge, 31326 Castanet-Tolosan, France, [3] INRAE, Univ Clermont-Auvergne, AgroParis Tech, VetAgro Sup, GAMAE, UMR Territoires, 9 Av. Blaise Pascal, 63170 Aubière, France

Serious games seem to be used more and more in agriculture and especially in livestock. They are supposed to be useful for learning purposes but also for co-design or to evaluate decisions with simulation models. Thus, they should be used in sustainability issues. We realized a systematic review of published articles on the use of serious games to address sustainability issues of livestock. A PRISMA method have been used to make the review. We produced a corpus description of articles, a descriptive analysis of games and an analysis of assessment done on games. We borrowed also a framework developed to define what is sustainable agriculture in order to study how serious games can be considered (or not) as a tool for sustainability in agriculture. The results (based on 107 empirical studies) showed that serious games on livestock have been gaining in importance since 2019. They are seen as an effective means of enabling stakeholders to work together and tackle complex issues in a systemic way to achieve sustainability in livestock sector. Indeed, sustainability issues are increasingly taken together in games with more goals, strategies and field of action. Games are designed for learning but also to co-design new systems. This review provides a solid basis for future studies of serious games in livestock. Nevertheless, the weakness of the assessment carried out in the articles and the diversity of games does not make it possible to highlight the real impact of games which lead us to ask for a research agenda on this theme.