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Abstract title: An integrated tool to apply the INRA2018 feeding system in ruminant rationing: INRAtion®V5

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Preferred presentation: Theatre

Preferred session: 74: Advances in nutritional modelling and feeding systems (in memory of Daniel Sauvant)

Abstract text:

The INRA feeding system for rationing ruminants has been regularly updated for 40 years. Thanks to its support software, INRAtion®, it is widely used in France and in several European, African and South American countries. The recent revision of the system was aimed at developing new approaches to rationing, allowing to calculate rations at an objective different from covering animals' needs at the production potential and to predict the multiple responses of the animals in terms of production, product quality, animal health and environmental emissions. The development of the INRAtion®V5 rationing system was achieved through a partnership with the SIEL association, which brings together 24 livestock adviser organizations, representing more than 50% of the dairy herd in France. INRAtion®V5 calculates feed values from their laboratory analysis, predicts diet nutritive value considering digestive interactions, feed and nutrients intake including on pasture, and the multiple responses of the animals. An algorithm optimizes the rations according an 'objective function' that integrates production objectives, management of body reserves, and efficiency of protein use. Other predicted animal responses allow the user to evaluate the calculated rations on several technical, environmental and economic dimensions, as a decision support tool. The current version includes feed value calculations, and ration optimizations for dairy animals (cow, ewe and goat), as well as growing and fattening cattle, and is available under license in French and English (<https://www.inration-ruminal.fr/>) for industry and academic institutions. The connection to the adviser's information systems will allow a massive feedback of results from the field, which may be used for further development of the INRA feeding system and the rationing tool.