E412

Feed-related quality differences of dairy products described with near-infrared spectroscopy and electronic nose

YAKUBU Haruna Gado ; TÓTH Tamás ; TÓTHI Róbert ; WORKU Alemayehu ; BÁZÁR György
Institute of Physiology and Animal Nutrition, Hungarian University of Agriculture and Life Sciences, Guba Sándor u. 40, 7400 Kaposvár, Hungary

It is reported that the composition of feeds used in the feeding regimes of dairy cow may influence some properties, such as chemical composition and sensory profile, of the milk produced and the modelled products, such as cheese. Over the years, conventional laboratory methods have been employed to determine the chemical properties, and trained professionals to evaluate the sensory properties of these products. The limitations associated with the aforementioned methods are that they are time consuming, costly, and in laboratory analysis where reagents are needed, the risk of environmental pollution may be high. Technological developments, however, have led to the development and application of rapid and cost-effective tools. Near-infrared (NIR) spectroscopic technique and the electronic nose (e-nose) or machine olfactory systems are more often applied in the quality analysis of dairy products, even in real time. In this study, the e-nose was applied to discriminate the milk produced by dairy cows fed with four different total mixed rations (TMR), at different periods, whereas, the NIR was used to differentiate the cheeses produced from the milk. Both technologies allowed the discrimination of the dairy products originating from the different feeding regimes, thus, the results re-affirm the potential of the NIR spectroscopy and e-nose in the analysis of dairy products.