

**Fluorescence Spectroscopy of milk tracks feeding regimen and geographic origin.** G Masoero, Accademia di Agricoltura di Torino, Torino, Italy.

Front-face fluorescence spectroscopy (FS) recorded on milk samples with the excitation wavelengths set at 290 nm and emission spectra at 300-400 nm was applied in a study composed by eight groups (N=352). A simple comparison of the second FS peak leads to distinguish 8 groups in three stages distinguished from high rich (A: 2 groups of mixed cows grazing *Trifolietum* and Valdostana on mountains, and 1 goat group), medium rich (B: 1 group of cows from *Festucetum* on mountain and 2 groups from plain of Piemontese and Valdostana cows) and low flat diets (C: 2 groups from a Jersey herd and from Holstein herds conferring to the *Centrale del Latte di Torino*): the threshold  $\log 1/R > 40$  clustered milk samples from 6 groups which grazed alpine pasture or mixed diets in stall plus a group of goats (A); the threshold  $\log 1/R < 40$  separated 160 milk samples produced in herds of plane with total mixed ratio and high yields (C). Discriminant analyses of the whole FS in 303 milk cattle samples from 7 groups, according a bi-modal distribution, perfectly recovered the low stage flat diets (C: error 0%) and revealed good discrimination (error 4%) of the samples pooled from the B and C rich stages; the  $R^2_{cv}$  was 0.89. Geographic origin of the samples from milk cows was highly appreciated by FS, with limited error in the samples from plain (2%) and from mountain (6%); the  $R^2_{cv}$  was 0.89. The study confirmed that FS is a very simple method which can retrospect several traits characteristic of the pasture grazed by dairy cows, or the feed management practices, while being little useful for predicting the firm curdness. Evidences propose attention of stakeholders to an objective and simplified traceability process along the milk chain, that may be advanced by a systematic use of the FS.

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