P5-2

CHARACTERISATION AND CLASSIFICATION BY NEAR INFRARED SPECTROSCOPY OF WAXES USED IN DAIRY TECHNOLOGY

Stefania Barzaghi, Claudia Giardina, Tiziana M.P. Cattaneo, Roberto Giangiacomo*

Istituto Sperimentale Lattiero-Caseario, Via A.Lombardo, 11, 26900 Lodi – ITALY
Phone +39 0371 45011, fax +39 0371 35579, e-mail: giangiacomo.ilc@pop.telware.it

The aim of this study was to evaluate the possibility to characterize and classify waxes applied on some type of cheeses to obtain good stability during handling and transportation.

Generally, waxes are obtained from the petrochemical industry, nowadays there is the possibility to also use biodegradable waxes produced from microorganisms.

Preliminary studies were carried out to optimise sample presentation in NIR analysis, such as melting conditions (influence of temperature) and coat thickness of wax. 12 waxes (biodegradable or not) were analysed by using an InfraAlyzer 500 (Bran+Luebbe). The sample size was performed cutting pieces of 1.5 cm (height) x 1.5 cm (width) x 1.5 mm (thickness), previously melted at 90°C.

NIR spectra were collected at room temperature, and data were processed by Sesame Software (Bran+Luebbe) to evaluate qualitative differences among samples by cluster analysis.

Waxes were gathered on the basis of their origin (petrochemical or microbial).

To better understand the significance of the NIRS bands discriminating among waxes, a two-dimensional correlation with FT-IR spectra, collected by a FT-IR/ATR 420 (JASCO) instrument, was made using 2DCORR program (Galactic Industries).

On the basis of its classification power, NIRS appears to be a promising tool when used in routine analysis for a qualitative control of raw materials.