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Retraceability and classification of some Piedmont and mountain cheeses by NIR method

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Retraceability was intended as ability of recovering a twin of the sample among a number of the others in a spectra database. Classification ability was intended to verify a label or to separate specific experimental effect studied on dairy animals. The Near Infrared Reflectance (NIR) Spectroscopy method was tested in 14 experiments comprising a wide variability in types and species (N=1373). The NIRS were very well able to recover the twin samples with average recovery rate 73% (63-100%) vs prior probability 1/1228. Regarding classification of the types in a first database, results were positive because Toma cheeses from Piedmont and mountain were 97% recovered, Fontina 88%, Fromadzo 85%, Pecorino 95%, tipo Sbrinz 96%, Murianeng 73%, Gruyere-Etivaz 98% and Goat cheeses 100%. Other types of cheeses were misclassified and intended as Toma, because of strong unbalance in categories and great variability inside Toma. Separation of experimental treatment was possible in a feeding experiment ($R^2=0.88$) and in geographic origin ($R^2=0.50$, mountain vs plain). In a further database (N=99) with chemically analysed seven DOP cheeses NIR classification averaged 77%, the types chemically nearer to Toma being misclassified.

This technique could improve promotion of mountain cheeses because ready information about cheese characteristics.

Poster CSN2.22

Antimicrobial activity of green tea extract on rabbit caecum microflora

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This research will examine the potential of using plant extracts not considered harmful for human and animal health as alternatives to antimicrobials, including antibiotics, used as prophylactic and growth promoting agents in livestock.

The inhibitory activity of green tea extract (Greenselect, Indena S.p.A.) towards the development and growth of bacteria isolated from rabbit caecum was evaluated. *Escherichia coli*, *Staphylococcus aureus*, *Clostridium* spp., *Enterococcus* spp., total coliforms, anaerobic bacteria, *Lactobacillus* spp, aerobic mesophilic bacteria, were cultured in plates added with tea polyphenols solution. Bacteriostatic effect on *E. coli* has also been tested using a broth medium. Inhibiting activity of green tea extract has been observed on total aerobic mesophilic and total anaerobical count. The colony development of *E. coli* in the medium containing 50 µg/mL green tea extract was 20-fold lower than in control medium; at 100 µg/mL the development was completely inhibited. On the other hand, green tea extract did not inhibit or promote growth of all other bacteria tested.

In conclusion, our results showed a strong activity of green tea extract against *Escherichia coli*. Tea extract is worth further investigations as a possible natural antimicrobial additive.