

**Methods and issues in cheese
authenticity studies:
a workshop.**



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approcci analitici alle politiche per la
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Atti

Application of Artificial neural networks for the traceability of mountain cheeses

Applicazione delle Rete Neurali Artificiali per la rintracciabilità delle produzioni casearie di alpeggio

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Artificial Neural Networks (ANN) are particular mathematical structures that process information by means of a parallel approach and are used in many scientific fields to obtain results when mathematical models do not exist or these models, if any, are so complex that makes them unusable. The aim of this study was to evaluate the application of ANNs to trace mountain cheeses. In particular ANNs were applied to the terpenic compounds, evaluated by SPME-GC/MS, of cheeses from different alpine pastures. Using specific software different architectures (MLP, GRNN, LN) of ANNs were defined to highlight the differences among samples and select those with the greatest capacity of sample re-classification. Also a variable selection among those identified by SPME-GC was performed to optimize the ANN structure. The obtained results showed that it is possible through terpenic component, despite its variability, and a "dynamic" system for calculating as the ANNs, discriminate against products and build an exportable model useful for control of origin.