

**SENSORY ANALYSIS AND ECONOMIC REWARD FOR PDO CHEESES:  
THE CASE OF TRENTINGRANA**

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For typical products a proper and constant Quality Control (QC) based on sensory parameters is fundamental for preserving market position and profitability, and for maintaining consumer confidence and loyalty toward the product (Delhaunty and Drake, 2004). Despite constantly growing application of sensory techniques as an integral part of product QC, sensory analysis has not yet been fully exploited or widely used by companies, especially in small and medium enterprises such as artisan dairies or other Protected Designation of Origin (PDO) producers both because of economic issues and, in some cases, lack of expertise.

With the case study of Trentingrana cheese, a variety of the PDO Grana Padano, we want to present an example of an efficient strategy for PDO product valorization that foresees a different payment system of product depending on sensory quality level. Although not included in its official PDO control plan, the sensory quality of cheese produced by the Trentingrana consortium has been evaluated for more than 10 years by an expert panel. Depending on this evaluation, the associated dairies receive price premiums or penalties (Bittante *et al.*, 2011). This quality payment method based on sensory judgment is the only example in Italy.

The main steps of this talk are as follows: i) a brief description of the originally applied QC (over first 8 years) based on naïve sensory methods ii) the identification of the

critical points and the possible amendments that should be in accordance with the good sensory practice and compatible with both practical and economic constraints iii) the performance evaluation of the revised QC (applied over last 3 years) and finally iv) a discussion on the possible solutions for the unsolved criticisms.

The originally implemented QC system did not guarantee the application of the basic criteria of good sensory practice largely due to the lack of sensory competence and dedicated equipment and to the practical constraints to implementing sensory testing procedures in a productive context. After collaborating with our sensory group, the QC system has been improved by revising the sampling procedures, introducing a balanced experimental design, monitoring experts performance and controlling the sample presentation and evaluation protocol. The results indicate that the introduction of basic sensory analysis principles has reduced systematic effects and limited psychological errors.

Other suggestions, that were not yet implemented because they required further investments, are also reported and discussed. At the moment, for example, we are working with the experts to improve panel consensus and reliability by defining each sensory attribute and choosing related reference standards. The use of mental standards, as performed by expert until today, is in fact problematic because judges often operate under different criteria (Costell, 2002). Our next proposal is to support the expert evaluations by quantitative descriptive analysis performed by a trained panel to have an objective descriptions of sensory profile and to better describe standard references. Furthermore, we are studying rapid innovative instrumental analysis to predict sensory characteristics, that could extend the quality control to a higher number of cheeses (Endrizzi *et al.* 2012).

The problems and the solutions highlighted in this presentation for Trentingrana cheese can probably be generalized to other traditional products. Through the critical review of this relevant case study, we hope to encourage the use of appropriate sensory analytical

techniques within the food industry as an integral part of  
valorization for typical products.

product

## References

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