

PhD Thesis Defenses

On **Friday July 19th 2024 at 9.30am** at the classroom **Giuseppe Perrotta**, Via Santa Sofia 100

Guido Mangione (XXXVI cycle)

Will defend his PhD theses titled

European
Doctor
Candidate

Characterization of traditional Ricotta cheese produced in Sicily: focus on different varieties produced, quality traits and production technologies

Thesis Abstract

Ricotta cheese is among the best-selling dairy products in Sicily, still produced at the artisanal level, whose main varieties are represented by sheep and cow Ricotta cheese. Each territory of the Island has its traditions, so although using the same technological principles, such as the use of whey from cheesemaking and heat, other ingredients can be integrated according to local customs and traditions, describing a large variability that typifies these productions. This research thesis aims to characterize some of the Sicilian artisanal Ricotta cheese varieties, analyzing the chemical, sensory, and microbiological profile and the production technologies involved in the making system. For this work, various dairy companies located in the Sicilian territory dedicated to the production of the artisanal Ricotta cheese were involved. Within this context information on technological parameters during the manufacturing process, how some ingredients as well as the animal feeding system affect the organoleptic proprieties of the product (microbial, sensory, antioxidant activity), and how the presence or absence of some common ingredient (salt, milk) can determine differences in the microstructure of the Ricotta cheese were investigated. In particular, the main research activities focused to: (i) Review the classification of the different Ricotta cheese produced, the raw materials used, the parameters that affect the final quality, the methods of production (artisanal vs. industrial), and the new trends in the production technologies, to improve the quality and extend the shelflife of the product; (ii) Determine the effects of different homogenization methods applied for the Ricotta cheese sample collection and preparation on total solids content determination; (iii) Characterize the artisanal saffron Ricotta cheese produced in Sicily, including the technological parameters during the production process, the assessment of the physicochemical, microbial, and sensory characteristics, and the antioxidant activity of the product; (iv) Evaluate the chemical and sensory characteristics of the Hyblean Ricotta cheese manufactured within two different seasons linked with the feeding system (pasture vs indoor); (v) Development of a system to study in situ the whey protein aggregation during Ricotta cheese making using different ingredients (salt, milk, etc.), corresponding to the critical points that lead to differences in appeal, namely the texture, moisture holding, and visual microstructure appearance. This work has contributed scientific data to the fields of nutrition and dairy chemistry and technology providing useful information to dairy producers, marketers, and consumers. Nevertheless, further studies are necessary to better characterize several quality parameters in Sicilian Ricotta cheese.

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