RICOTTA ROMANA: MANUFACTURING TECHNIQUE, CHEMICAL AND MICROBIOLOGICAL COMPOSITION

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Introduction. Ricotta is a typical Italian dairy product largely appreciated by consumers. The term Ricotta comes from the Latin *recoctus*, a word which recalls the manufacturing technique of this product which, according to Italian legislation, is not properly a cheese because it is produced from whey (as a by product of cheese making) and not from milk. Greeks and Romans already made ricotta; in fact Columella, in his *De Re Rustica*, describes the various phases of its production. In the last few years consumption of Ricotta has increased, because most Italian consumers prefer eating fresh and low fat cheese. Ricotta Romana is produced using raw milk sheep from Sarda, Comisana, Sopravvissana, Massese and their interbreed in Lazio region area. The whey is heated to 50-60 ° C; during this process a maximum of 15% raw milk sheep is added. The whey, with the possible addition of sodium chloride (max 4 g/l), is heated to 85-90° C and maintained in slight agitation. The heating promotes the precipitation and coagulation of serum proteins and their emerging like small flakes. Subsequently ricotta is put in typical packaging (*fuscella*) for about 24 hours to facilitate the purging of whey. The product is drained in rooms at 4-6°C. The ricotta has a delicate texture, a colour more pronounced than vaccine one and a sweet flavour. Ricotta Romana has been recognized as a PDO (Protected Designation of Origin) in the European Union. In this study we describe chemical and microbiological characteristics of the Ricotta Romana.

Methodology. From 2006 to 2007 we collect 70 samples of Ricotta Romana, from 4 dairies from the provinces of Rome, Rieti, Viterbo and Latina. We analysed the ricotta cheese for the following parameters: fat (F), fat in the dry matter (FDM), protein (P), total solids (TS) and moisture (M) with Near Infrared Trasmittance technology (FoodScanTM – www.fossitalia.it); the following groups of microorganisms were examined: Enumeration of microorganisms-Colony-count technique at 30°C (ISO 4833:2003) (TMC), *Salmonella spp*. (ISO 6579:2002; AMD:1 2007), *Listeria monocytogenes* (UNI EN ISO 11290-1:2005), β-glucoronidase-positive *E. coli* (ISO16649-2:2001), Coliforms (ISO 4832:2006) and Coagulase-positive staphylococci (ISO 6888-2: 1999; AMD:1 2003) (CPS).

Results and discussion. The average of the fat was 15,45%±3,36, FDM 53%±7 with minimum and maximum values respectively 39% and 66%, protein 8,87%±1,09, total solids 28,92%±3,24 and moisture 71,07%±3,24 (Tab.1). The average of fat/protein ratio is 1,76±0,40 with a minimum of 1,05 and a maximum of 2,68. Microbiological tests showed a good sanitary condition of product with an average of TMC 5,4 log cfu/g, *E. coli* 1 log cfu/g, *Coliforms* 2,4 log cfu/g, CPS 3,05 log cfu/g, *Salmonella spp* and *L. monocytogenes* have never been isolated. This study showed a good sanitary condition of product; indeed, all samples are suit with laws in force (Reg. CE 2073/2005). Similar results have been reported by other authors in their research about ovine ricotta cheese produced in Sardinia region (2).

Table I – Chemical parameters (%)

	F	FDM	P	TS	M
Average± s.d.	15,45 ±3,36	53±7	8,87 ±1,09	28,92 ±3,24	71,07 ±3,24
Median	15,06	54	8,88	28,15	71,66
Min.	10,31	39	6,79	23,31	60,91
Max.	24,51	66	11,46	39,09	76,69
Coeff. var.	21,72	13	12,25	11,21	4,55

Conclusions. This paper describes the characteristics of a "cheese" that is in privileged position among the light products for its taste, freshness and high hygiene quality. The ricotta is a good method for whey valorization and utilization considering the difficulty of disposal.

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