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Milk clotting enzymes: a transcendental decision in goat´s milk cheese quality

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Cheese quality depend on many factors some of them linked to milk composition (genetic aspects: spices, breed and individual considerations, lactating stage and lactating number, type of kidding, animal feeding and health, offspring season, etc.) and other due to cheese making aspects and storage processing (refrigeration, raw or pasteurized milk, coagulation enzymes and coagulation parameters, addition of different products, moulding, drainage, salting, ripening, smoking, etc.). All these factors interact and only under experimental conditions it is possible to analyse the effect of any particular feature by itself. Between all these factors milk coagulation process is one of the most important step in cheese final characteristics. The differences in protein matrix degradation due the origin of coagulant agents affects cheese texture, odour, flavour and taste and consequently consumer's preference, this last affirmation is really important for the economy of the cheesemaker. In the past, cheese-makers have used animal rennet preparations for curdling milk that were produced by macerating the stomachs from suckling ruminants according to the local uses, although plant coagulant is used in some typical specific cheesemaking. Cheese production has increased more than 3,5 fold since 1960 while animal rennet production has declined, thus other proteolytic enzymes have been developed. Nowadays, different types of products are available with different origin and variability in proteases for milk coagulation: animal origin rennet and vegetable coagulants than can be artisan or commercial, microbial proteases and recombinant from genetically modified microorganism with cDNA for chymosin. In this paper is presented the state of arts of these enzymes used in goat´s cheese industry, mainly focused to hand made cheeses. Coagulant effect in physic-chemical and sensory profile of cheeses is analysed and also ethical and religious considerations are explained.