JORNADAS MED

MEDITERRANEAN INSTITUTE
FOR AGRICULTURE, ENVIRONMENT
AND DEVELOPMENT

INSCRIÇÕES ONLINE até dia 14 de Junho de 2019

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BOOK OF ABSTRACTS JORNADAS MED 2019

Invited Speaker 35

ValBioTeCynara - Economic Enhancement *Cynara cardunculus*: Natural Variability and its Biotechnological Applications

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ValBioTecCynara aims to address the natural *C. cardunculus* L. genetic, molecular, morphologic, and biochemical variabilities, as a combined strategy to identify individuals with certain and specific required profiles. *C. cardunculus* L. is used as a coagulant for cheesemaking where the respective use is mandatory in certain cheeses benefiting from Protected Designation of Origin (PDO)(1). The potential of 15 different *C. cardunculus* L. natural occurring populations within Alentejo region (south of Portugal), were evaluated on flower technological properties, being three of them studied regarding chemical, rheological and sensorial characteristics within the three PDO Alentejo cheeses (Évora, Serpa and Nisa). A significance variability on flower technological properties was found, based on milk clotting activity, gel firmness, micellar aggregation rate and proteolytic activity and it was possible to identify 5 different groups of C*. cardunculus* L. populations (2). The action of coagulant populations was specific according the cheese matrix. Nevertheless, a common pattern of cheese proteolysis, rheology and sensory characteristics was verified, allowing to highlight the cheeses manufactured with two of the three *C. cardunculus* L. populations. Proteolysis was more intense in early stages of ripening, influenced by cheese moisture content and raising to caseins fractions, β-caseins were less susceptible to proteolysis than α_S-caseins with influence in cheese sensory characteristics. These results have a very stimulating uses concerning specific target, such as uncertainty in the cheese manufacture, contributing to the incentive of the cheese production systems promoting the milk production of small ruminants.

Keywords: *Cynara cardunculus* L., proteases, milk, PDO Évora, Serpa, Nisa cheeses

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This project was funded by European Regional Development Fund (FEDER), ValBioTecCynara (ALT20-03-0145-FEDER-000038)—Economic valorisation of Cardoon (*Cynara cardunculus*): study of natural variability and biotechnological applications.
The authors acknowledge FCT for PhD grant to Teresa Brás (SFRH/BD/110969/2015).