

**C. ORALES2-22:**

**EFFECT OF EXTRACTION pH ON PHYSICO-CHEMICAL, ENZYMATIC AND TECHNOLOGICAL PROPERTIES OF CRUDE EXTRACTS FROM WILD CARDOON (CYNARA CARDUNCULUS L.) FLOWERS**

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**Keywords:** Cardoon

**Abstract:** Milk coagulation is the important step in cheese making process, since it determines the properties of the final cheese. The selection of a suitable plant coagulant, able to replace successfully calf rennet, is a critical parameter which influences greatly the characteristics of the dairy product. In this context, the physico-chemical, enzymatic and technological properties of *Cynara cardunculus* rennets, prepared at different pH (from 3 to 6), were investigated. Results. It has shown that the extract prepared at pH 3 had the best color parameters and milk-clotting properties. This latter displayed the highest ratio (Milk clotting activity (MCA)/ Proteolytic activity (PA)), which exceeds that of chymosin. The densitometry analysis on 1D and 2D gels electrophoresis showed that, the extracts made from flowers of wild cardoon have significantly different levels of enzyme fraction, depending on pH buffer employed. The highest enzyme percentage was attributed to the extract at pH 3. With respect to gelation properties, gels formation was monitored using dynamic rheology and turbiscan instrument. On the basis of rheological results, it can be assumed that by lowering the pH of rennet, milk pH decreased, causing a significant variation of the  $G'$  and  $G''$  parameters. The extract prepared at pH 3 showed the highest values of  $G'$  and curd firmness, exceeding those of chymosin. In fact, the lowest values produced by coagulants at high pH, are probably the result of high non specific proteolytic action, leading to some hydrolysis in existing network. Results obtained by turbiscan showed similar values of delta backscattering ( $\Delta BS$ ) of gels produced, after 2h, by chymosin and crude extract at pH 3. Conclusion. *C. cardunculus* extract prepared at low pH (pH 3) has the potential to be employed as an efficient milk-clotting agent in the production of dairy products. Through its enzymatic and technological properties related to MCA/PA ratio and curd firmness, this coagulant is more able to form a good curd with less bitterness during cheese making.