THE USE OF APPLE POMACE IN THE MANUFACTURE OF YOGURT

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Apple pomace is an excellent source of phytochemicals and contains significant amounts of insoluble sugars, including cellulose 127.9 g/kg DW, hemicellulose 7.2 to 43.6 g/kg DW, lignin 15.3 to 23.5 g/kg DW [1] and can therefore be used as a functional ingredient in the manufacture of dairy products with high rheological characteristics. In the present study apple pomace powder (0.2%, 0.4%, 0.6% and 0.8% w/w) was added to skim milk. Subsequently, the milk was seeded with yogurt starter cultures, packaged and fermented at a temperature of 39-42 °C. Yogurt samples were evaluated during different storage periods (0, 3, 7 and 14 days) to determine the evolution of sensory, physico-chemical and rheological characteristics. The results showed that the addition of 0.6 - 0.8% apple pomace led to an increase in the rate of change in the pH value during fermentation and a reduction in the fermentation time, respectively. The viscosity value of the yogurt samples is directly proportional to the apple pomace concentration, ranging from 2115 MPa·s in the case of the control sample to 2695 MPa·s in the case of the yogurt sample with the addition of 0.8% pomace. All yoghurt samples with added apple pomace showed a low syneresis index. In addition, the fortified yogurt samples showed improved structural characteristics (in terms of texture, consistency etc.) over 14 days of storage at 2-6 ºC. The same trend was observed by Wang X. et al. [2] in stirred yoghurt with freeze-dried apple pomace powder, by Jovanovic M. et al. [3] in fortified yogurt with apple pomace flour and by Ferreira P. et al. [4] in yogurt with the addition of apple pomace extract. Therefore, apple pomace added to the composition of skim yogurt has a high potential to stabilize the lactic gel formed by the aggregation of proteins and can be used as a natural stabilizer in the production of yogurt.

Keywords: *apple pomace, natural stabilizer, rheological characteristics, viscosity.*

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