

Effect pH on Chemical and Physical Properties of Iranian Fetta Cheese

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Abstract : The objectives of this study were to determine the effect of pH on chemical, structural, and functional properties of Fetta cheese, and to relate changes in structure to changes in cheese unctuality. Fetta cheese was obtained from a cheese-production facility and stored at 4°C. Ten days after manufacture, the cheese was cut into blocks that were vacuum-packaged and stored for 4 d at 4°C. Cheese blocks were then high-pressure injected one, three, or five times with a 20% (wt/wt) glucono- δ -lactone solution. Successive injections were performed 24 h apart. Cheese blocks were then analyzed after 40 d of storage at 4°C. Acidulant injection decreased cheese pH from 5.3 in the uninjected cheese to 4.7 after five injections. Decreased pH increased the content of soluble calcium and slightly decreased the total calcium content of cheese. At the highest level, injection of acidulant promoted syneresis. Thus, after five injections, the moisture content of cheese decreased from 34 to 31%, which esulted in decreased cheese weight. Lowered cheese pH, 4.7 compared with 5.3, also resulted in contraction of the protein matrix. Acidulant injection decreased cheese hardness and cohesiveness, and the cheese became more crumbly.

Keywords : calcium, high-pressure injection, protein matrix, syneresis

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