

STUDY THE IMPACT OF ADDING XANTHAN GUM AS A FAT REPLACER ON THE QUALITY CHARACTERISTICS OF LOW-FAT OSHARI-LIKE CHEESE

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Abstract

The importance of studying lies in the increasing demand for the consumption of low-fat dairy products. Therefore, this study aims to determine the effect of using xanthan gum as a fat replacer on the physicochemical, sensory, and tissue properties of low-fat Oshari-like cheese using cow's milk.

The experiment was divided into five treatments represented by the manufacture of Oshari-like cheese from full-fat cow's milk positive control treatment C+, and manufacture of low-fat Oshari-like cheese from skimmed milk for negative control C-, and manufacture of low-fat Oshari-like cheese to which the fat replacer has been added xanthan gum in the proportions of: 0.015, 0.030, and 0.045% represented by the treatments T1, T2 and T3 respectively, and all cheeses ripened for a period of three months. The pH is estimated by pH meter, soluble nitrogen and non-protein nitrogen was estimated according to the method of Kjeldahl, the percentage of moisture was estimated using the drying oven, ash estimated using a burning furnace, while the total acidity was estimated by titrated with sodium hydroxide (0.1N), the percentage of fat was estimated according to the Kerber method, and finally the carbohydrates were estimated mathematically by the difference of components, the texture of cheese parameters was estimated using a texture analyzer with a carrying force of 5 kg. In addition, the sensory evaluation of the resulting cheese treatments was carried out by experts in the field of dairy.

The results showed that the Oshari-like cheese produced using xanthan gum retained a higher moisture percentage compared to the positive and negative control treatments, while with ripening, a decrease in moisture values was observed for all treatments. The percentage of ash also increased in the cheese of the treatments to which xanthan gum was added, and the pH values of the cheese produced in all the treatments under study converged immediately after manufacturing, as for during ripening, a clear decrease in its values was noted and an increase in the pH values of all treatments. The additives also improved the values of texture tests, which included hardness, springiness and cohesiveness of the produced cheeses compared to the negative control treatment, in addition to improving the sensory properties of the treatments added to xanthan gum compared to the negative control treatment.

The addition of xanthan gum as a substitute for fat in the manufacture of low-fat, oshari-like cheese improved its qualitative characteristics.

Key words: Xanthan gum, Oshari-Like cheese, Physicochemical properties.