EFFECT OF CHEMICAL PRESERVATIVES ON THE NUTRITIONAL AND SENSORY QUALITIES OF YOGHURT

BY

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ABSTRACT

A study was conducted to find out effects of chemical preservatives on the nutritional and sensory qualities of yoghurt. The only chemical preservative added to milk by farmers in the Batticaloa region is Hydrogen peroxide (H_2O_2).

Five treatments used for the study were commercial yoghurt, yoghurts developed from milk: without added hydrogen peroxide, H_2O_2 added to the recommended level, higher than the recommended level (double) and lower than the recommended level (half). A nutritional analysis was carried out in which three characteristics were considered: tritrable acidity, lactose content and fat percentage. Tritrable acidity is considered because it is a better indicator than the pH resulted by the production of Lactic acid. A sensory evaluation conducted for the following organoleptic characteristics: appearance, flavour, colour, taste, mouth feel and overall acceptability.

Result of nutritional analysis showed that the tritrable acidity and fat percentage were not affected due to the addition of H_2O_2 but the lactose content was affected. Lactose is the predominant sugar in milk. It is fermented by the starter culture to form lactic acid in yoghurt. Even if lactose fermentation detected at a lower level in H_2O_2 added milk, there is a possiblity of lactose decomposition due to the heat treatment of milk. This two factors contributed to the lactose levels found in treatments.

Results of sensory evaluation show that the flavour, taste and overall acceptability parameters were affected due to the addition of H_2O_2 but the appearance, colour and mouth feel were not affected. Yoghurt's characteristic flavour and taste are two distinct features. The former is formed by heat treatment, decomposition of milk compounds, fermentation, etc. while the latter is formed only during fermentation by the production of lactic acid. As both these sensory attributes depend upon fermentation, they found at levels positively correlated to the growth of starters and fermentation. It was agreed with the results. Overall acceptability is the most complex sensory attribute. In this study, as yoghurt is mainly preferred for its flavour and taste, the overall acceptability is also liked by the panellists as taste and flavour.

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