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Effect of hydrogen peroxide on volatile sulphur compounds in UHT milk

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The possibility of using hydrogen peroxide to reduce or eliminate the cooked off flavour in milk heated at 145°C for 6s (UHT milk) was investigated. In addition, its effect on whey proteins in UHT milk and milk heated at 80°C for 1s to 1200s was studied. Several concentrations of hydrogen peroxide from 0.016% to 0.03% were added before and after heating. Low concentrations of H_2O_2 (0.016% or 0.005%) were sufficient to significantly reduce the level of sulphur volatiles in the UHT milk under the processing conditions used. One of the major contributors to the cooked flavour, H_2S was completely eliminated or reduced to well below its flavour threshold value. Low percentages of H_2O_2 had no effect on, or reduced β-lactoglobulin denaturation when added after or before processing, respectively. The addition of H_2O_2 could be a practical solution to the prevention or alleviation of cooked flavour development in UHT milk.

Biography

Zahir Al-Attabi has completed his PhD in food sciences and dairy technology from The University of Queensland (Australia). He is currently working as Assistant Professor in the Department of Food Science and Nutrition at Sultan Qaboos University. His main research interests are milk flavour, cheese processing, product development and recently starting some research on edible wild plant.

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