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Enzyme-treated milk yoghurt – Process development and biochemical characteristics

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Yoghurt has been prepared by series of biochemical processes, such as de-watering of fat-free milk, hydrolysis of milk proteins by papain, fermentation with yoghurt starter culture. Furthermore, texture of developed yoghurt has been modified by sucrose and transglutaminase. For de-watering of fat-free milk, a cross-flow membrane filtration with transmembrane pressure 3 bar and retention flow rate 100 L h⁻¹ have been considered. Concentrated milk has been subjected for treatment with papain at different concentrations, ranging from 0.007-0.032 g L⁻¹. Subsequently, enzyme treated milk has been fermented with starter culture for 6 h and considered for ageing for 24 h. Texture, antioxidant activity and antimicrobial activity have been investigated. Superiority of the mentioned method has been proven than conventional method for yoghurt preparation.

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Decontamination of Sprouted Seeds by High Power Ultrasound and Irradiation

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Novel technologies are investigated for replacing the chlorine to decontaminate fresh produce because of public health concerns and negative effect of chlorine to the environment. The objective of this study was assess the decontamination efficacy of two state of the art technologies high power ultrasound (US) and irradiation on mung bean and fenugreek sprouts. Mung bean and fenugreek sprouts were exposed to ultrasound treatments (40 kHz, 240 W, 25 °C) for 10 min to investigate microbial reduction in total viable counts (TVC) and Enterobacteriaceae counts. Then same products were treated with irradiation with doses of 1 and 2 kGy. There was no significant reduction on ultrasound treated fenugreek sprouts, while the same treatment resulted in significant reductions on mung bean sprouts. In contrast, irradiation treatment caused significant reductions in both products ($p < 0.05$). The microbial reductions on fenugreek sprouts were less than mung bean sprouts, but they were still significant. The reductions with a dose of 2 kGy were higher than with a dose of 1 kGy. Irradiation treatment is promising for reducing the population of pathogens on sprouted seeds. On the other hand, ultrasound treatment proved to be not as effective as irradiation treatment.
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