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FRACTIONATION OF MILK PROTEINS FROM SKIM MILK USING MICROFILTRATION

A THESIS PRESENTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF TECHNOLOGY IN FOOD TECHNOLOGY AT MASSEY UNIVERSITY

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ABSTRACT

The possibility of fractionation of milk proteins from skim milk using microfiltration (MF) was investigated in this project. Pilot scale ultrafiltration/microfiltration equipment (Koch model) was used. Three available MF membranes, 600, 601 and 603, with pore sizes of 1.99µ, 0.85µ and 0.17µ, respectively, were evaluated. The most suitable membrane was found to be MF 603.

By microfiltration to concentration factor (CFc) 7, permeation of 46% non-casein nitrogen (NCN) was achieved in contrast to 1% for casein. Using diafiltration with deionised water to a CF 567, permeation of 80% NCN occurred. Therefore, it is possible to obtain a casein-enriched fraction from the MF retentate and a non-casein nitrogen enriched fraction from the permeate by the MF process using MF membrane 603.
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