D-70 A microbiological study of butter

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Microbiological defects in butter include flavour defects, surface taints, mould growth and increase in free fatty acid content. Microbial lipases produced by lipolytic organisms contribute to increase in free fatty acid content of butter.

A comparative study of 'Highland' and 'Anchor' butter was carried out to determine the microbial contaminants, free fatty acid content and the changes during storage with the objective of studying the microbiological quality of butter and the possible contribution to increase in free fatty acid content.

14 Samples each of 'Highland' and 'Anchor' butter were analysed using standard methods for total viable count, yeast and moulds, psychrotrophs, coliforms, lipolytic organisms and free fatty acid content at regular intervals over a 6 month period. The microbial isolates were identified and their lipolytic activities were compared.

The initial mean counts of mesophiles, psychrotrophs, lipolytic organisms and yeast in 'Highland' butter were 2140, 2385, 2100, 635 per gram respectively. Lipolytic and psychrotrophic microbial counts and yeast count exceeded the requirement for satisfactory quality butter. Predominant contaminant was a lipolytic, psychrotrophic yeast and the rest were *Bacillus* and *Aerococcus viridans*. The initial free fatty acid content was 0.41 mg KOH/g. The microbial counts and free fatty acid content increased during storage. The high numbers of lipolytic microbial contaminants contribute in a significant way to increase the free fatty acid content during storage of 'Highland' butter. The 'Anchor' butter contained only *Ervinia herbicola* which is psychrotrophic and lipolytic. Microbial counts and free fatty acid content (0.26 mg KOH/g) were much lower than 'Highland' butter and well within the requirements for good quality butter.