

SURVIVAL OF PROBIOTICS IN GROWING-UP
FORMULA TO TEMPERATURE,
LOW pH AND BILE

KOH JESSIE

B.Sc.(Hons.) Food Science & Nutrition
Faculty of Applied Sciences
UCSI University

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ABSTRACT

This study was conducted to enumerate the total viable cells count of probiotics in three selected milk powders (AB, NE and DU) to investigate the effect of different rehydration temperatures on the viability of the probiotics cells, and finally the tolerance of probiotics toward low acid and different bile concentrations. All the tested samples met the minimum recommended value of at least 1×10^6 viable cells of *Lactobacillus* and/ or *Bifidobacterium* g^{-1} , with initial counts ranging from 6.172-6.771 log CFU/mL. It was found that there was no significant difference of viable cells count for rehydration temperature at 40°C for all three selected milk powders when compared to the control (25°C). However, there was significant loss of viable cells count when 65°C was applied to rehydrate the milk powders. The viable cells count decreased from 6.000 log unit to 3.000 log unit for samples AB and NE while for sample DU the viable cells count decreased from 6.000 log unit to 2.000 log unit. The probiotics strains in all the samples were able to retain their viability towards pH 3.0 with viable cells count of 6.000 log unit. All the probiotics strains tested were susceptible to pH 1.5 where no colony was detected after 3 hours of exposure. In terms of bile tolerance, all the probiotics strains exhibited similar degree of adaptation to bile at different concentrations (0.3%, 1.0% & 2.0%) where the number of colony increased 3.000-4.000 log unit after 24 hours of incubation in MRS broth containing bile salts. Results have shown that milk powder AB, NE and DU were in fact potentially to be a source of probiotics for children diet.

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