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# Growth Potential of Probiotic (*Lactobacillus* and *Bifidobacterium*) in Infant Formula

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**Abstract**

In the current investigation six species of probiotic bacteria, which belong to *Lactobacillus* (*L. reautari, L. rhamnosus, L. acidophilus*), *Bifidobacterium* (*L. casei, L. helveticus, B. bifidum*) were evaluated for their growth in infant formula. Different kinds of formula, which are used for healthy and unhealthy breast-feeding infants were used. The study indicated that all the probiotics investigated have grown in all tested kinds. Our findings also showed that the optimal time period for adequate growth of probiotics ranges from 12 to 24 hours. Furthermore, it was found that during incubation period of the tested probiotics the pH was in the range of 7.20 to 7.87 for all the infant formula tested. It was generally observed that changes in pH were meager during the first 8 hours of incubation then pH started to decrease reaching a value of 4 with the increase in growth until the end of incubation period (72 hours). The current results also showed that the optimal temperature for adequate growth of investigated probiotics was 37° C whereas the least temperature was 5° C. Variation in pH had a limiting effect on bacterial growth. Results from the current study showed that the best probiotic growth was at pH 6 and the least growth was at pH 11. Furthermore, the maximum growth levels at 55 % relative humidity, except *L. helveticus* for which the fastest growth was recorded at 75 % RH and growth of the tested probiotics was decreased at RH of 35 % and 100 %.

**Keywords:** *Bifidobacterium*, infant formula, Lactobacillus, pH, probiotic, temperature

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