

A Comparative Study of Viability of Iranian and Imported Bifidobacterium Species During Refrigerated Storage in Probiotic Doogh

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Background & Objectives: In this study, biochemical and microbiological properties of probiotic Doogh produced from Iranian and imported strains were compared.

Methods: Probiotic Doogh was produced by inoculation of traditional starter culture and approximately 6 log cfu/ml of a single probiotic culture (*Bifidobacterium lactis* HN019 supplied from Danisco, *Bifidobacterium bifidum* Bb-12 from Hansen, *Bifidobacterium lactis* PTCC-1631 or *Bifidobacterium bifidum* PTCC-1644 from probiotic research laboratory of University of Tehran) to reconstituted milk with 6% dry matter and incubation at 40°C till pH 4.4 was reached. Then Dooghs were stored at refrigerated temperature (5°C) for 21 days and Enumeration of probiotics (according to Iranian national standard No. 11325) and biochemical properties were measured during storage (per 7 days).

Results: Viability of all of 4 studied probiotic strains increased by about 1 log cfu/ml during fermentation. Viability of imported strains of *B. bifidum* and *B. lactis* continuously decreased during refrigerated storage and reached to 5.87 and 6.10 log cfu/ml at the end of storage, respectively. Meanwhile those of Iranian strains showed the viability increase to 7.37 and 7.35 log cfu/ml at 7 days of storage and then their viability decreased to 7.08 and 7.21 log cfu/ml, respectively. However these amounts were 1 log cfu/ml higher than initial inoculation concentration (6.22 and 6.20 log cfu/ml, respectively).

Conclusion: The Iranian strains of *B. bifidum* and *B. lactis* showed better viability than imported ones during fermentation as well as better survivability during storage and they can be good alternatives to imported ones.

Keywords: Viability; Bifidobacteria; Imported; Probiotic Doogh