

## Research Article

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## Effect of inoculation of *Lactobacillus acidophilus* on the level of nitrite and nitrate in yogurt containing spinach during refrigeration in 21 days

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### ABSTRACT

**Introduction:** Yogurt is mixed with spinach in some countries. Spinach can be a probable dietary source of Nitrate and Nitrite, and further N-nitrosamine.

**Methods:** The present study aimed to investigate the effect of inoculation of *Lactobacillus acidophilus* on the level of nitrite and nitrate in “yogurt containing spinach” (YS) during refrigeration in for 21 days. 4 types of yogurts including yogurt (Y), probiotic yogurt (PY), YS, and probiotic YS (PYS) were produced and kept at 4 °C for 21 days. Their nitrite and nitrate levels were measured by HPLC on days 1, 7, 14, and 21.

**Results:** There was no significant difference between the mean concentrations of nitrate and nitrite of Y and PY and between YS and PYS. Although the effect of refrigeration at 4 °C for 21 days was not significant on the nitrate amount of Y and PY, it was close to a significant level in YS and PYS. It also caused a significant increase in the nitrite content of all

containing spinach: PYS; nitric oxide: NO; acceptable daily intake: ADI; High Performance Liquid Chromatography: HPLC; potassium nitrate:  $\text{KNO}_3$

**Competing Interests:** The authors declare that there is no conflict of interest.

**Author Contributions:** SMM: conceptualization, methodology and funding acquisition. MK, RBB & MHY: validation and writing-review and editing. MK: formal analysis, investigation, data curation and writing-original draft preparation.

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