Antimicrobial and antioxidant effect of pomegranate on bio yoghurt Fortified with its piths and juice

Nanis H Gomah1, Mohamed T H2 and Dina M O1
1Faculty of Agriculture, Assiut University, Egypt
2Agricultural Research Center (A.R.C), Egypt

The interest of eating healthy food has become obsession of the world. Bio yoghurt is a very favorite food which can be healthier by fortifying it with a natural source of vitamins, antioxidant and phenolic compounds. The aim of this study was to investigate the effect of bioactive compounds such as phenolic compounds, antioxidant, organic acids, carotenoids, and vitamins of pomegranate (Punica granatum L.) juice, piths and depth at different concentrations on activity and vitality of probiotics and lactic acid bacteria during fermentation as well as, yeasts and molds count affecting the prolong of the yoghurt shelf life from the first day till two weeks of storage. Samples had shown that phenolic compounds such as Oleuropein, Coumarin, Ellagic, Hydroxy Tyrosol, Benzoic, Salicylic, Ferulic, Caffeine, Vanillic, Caffeic, Chlorogenic, Catecol, Catechein, Protocatechuic and antioxidant compounds including Vitamins A, E, C, D concentration was changeable with different treatment within the range of (Oleuropein 9.5-18.4 ppm, Coumarin 4797.9-11219.3 ppm, Ellagic 2.1 - 8.4 ppm, Hydroxy Tyrosol 17.6 - 56.8 ppm, Benzoic 5.5 - 9.9 ppm, Salicylic 0.8 - 5.8 ppm, Ferulic 3885 - 8668.8 ppm, Caffeine 5704.9 - 10457.9 ppm, Chlorogenic 29029 - 122708.2 ppm, Catecol 2301.1 - 71847.3 ppm, Catechein 3 - 19 ppm, Protocatechuic 16899.4 - 40515.4 ppm) and Vitamins (Vitamin A 0.067 - 1.17, vitamin E 0.073 - 1.96, vitamin C 75.95 - 171.27, vitamin D 0.33 - 2.63 ppm). The effect of pomegranate juice on molds and yeasts was also studied in agar plats showing a clear zone of fungi surrounding the injected juice but there was no effect on the yeasts growth.

Key Words: antioxidant, phenolic compounds, antimicrobial activity, pomegranate juice and pith, shelf life extension

Biography

Nanis H. Gomah is the head of the Department of Dairy Science, Faculty of Agriculture, Assiut University, Egypt. She completed her PhD In Dairy, Agriculture, Assiut, 2005. Before taking the position of Head of the department she served various position in the university. She served as Lecturer, Dairy Science Department, Faculty of Agriculture, Assiut University, 2005, Assistant Lecturer, Dairy Science Department, Faculty of Agriculture, Assiut University, 1999 and Demonstrator, Dairy Science Department, Faculty of Agriculture, Assiut University, 1992.

nanis2000eg@yahoo.com