



### الملخص الانجليزي للبحث رقم (٣)

## Enhancing the Vitality of Free Fat UF-Soft Cheese Supplemented with Some Nutritious Additives by Adding Probiotic Bacteria

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*Int. J. Food Sci. Nutrition Health Family studies*, 3(1): 124 – 144 (2022). مكان النشر:

### Abstract:

Probiotics are live microorganisms, which provide health benefits when they are presented in adequate amounts. A dairy product such as cheese is a suitable carrier for the probiotics into the human intestine. Therefore, this study aimed to use probiotic bacteria to improve the vitality and quality of free fat ultrafiltrated (UF) white soft cheese supplemented with 5% fresh mushroom (FM) or 6% bottle gourd seeds powder (BGSP). Two different starters (*Lactobacillus acidophilus* or *Bifidobacterium lactis*) were used individually. Free fat buffalo's milk retentate was divided into 7 portions: the first portion (without probiotics or additives) was considered as a control, while the next three portions were inoculated with *Lb. acidophilus* LA5 and no additives, 5% FM and 6% BGSP (L1, L2 and L3, respectively). The last three portions (B1, B2 and B3) were inoculated with *Bif. lactis* and supplemented like previous group. Samples of all resultant cheese were stored at  $5 \pm 1$  °C for 28 days and analyzed for chemical, microbiological and sensory attributes. The results showed that moisture contents of fresh probiotic treatments supplemented with FM were higher than other treatments while, total nitrogen, water soluble nitrogen/total nitrogen, fat and fat/dry matter were higher in cheese supplemented with BGSP at the end of storage. The highest probiotic viability was recorded by Bifido-cheese supplemented with BGSP (B3) at 14 days of storage. Both, *Acidophilus* and *Bifido*-free fat soft cheese supplemented with 5% FM had the best sensory properties. Therefore, it is recommended to produce *Acidophilus* and *Bifido*-free fat UF-soft cheese supplemented with 5% FM or 6% BGSP as a new vital product with healthy properties.

### Keywords:

Probiotic, *Lb. acidophilus*, *Bif. lactis*, free fat, White soft cheese, Bottle gourd seeds powder, Mushroom, Ultrafiltrated.

