

The drying effect on survival and function of probiotics in dried fruits

Fatemeh Asghari Paskiabi*,

Background & Aims: Because of low side effects and impact on resistant pathogenic bacteria, probiotics are a new therapeutic hope that has involved many investigator's opinion. Therefore, be seen as the using widespread of them for food industry. The aim of this study was to evaluate a new method to investigate the drying effect on survival and function of probiotics in dried fruits. **Methods:** In the current study, we used of bananas, apples, cucumber, and apricots for drying of four strains of probiotics contain of *Lactobacillus acidophilus*, *Lactobacillus plantarum*, *Lactobacillus rhamnosus*, and *Lactobacillus lactis*. Antimicrobial activity of *Lactobacillus* before and after drying, was carried out by using disc diffusion method against four pathogenic bacteria, including *Staphylococcus aureus*, *Escherichia coli*, *Pseudomonas aeruginosa*, and *B. subtilis*. Data analysis was performed using Minitab software and the effect of various factors, including the type of bacteria, drying time, the drying temperature, and type of dried fruits was evaluated on survival and function of probiotics. The significance level was considered less than 0/05. **Results:** The data show that MRS medium was a better medium for growth of *Lactobacillus* compared to salt medium before and after drying. *Lactobacillus* has antimicrobial activity against pathogenic bacteria before and after drying. Also, data analysis demonstrated that the drying of probiotics doesn't threaten the survival of probiotics. Highest of the bacterial growth was observed in the 68 hours, before and after drying, which indicated that drying probiotics can be maintained them until hours later. Eventually, data analysis observed a significant association between type of bacteria and different temperatures with survival of *Lactobacillus* after drying. **Conclusion:** According to proper role of probiotics to improve gastrointestinal function and their effects on health, the use of dried fruit probiotics as a new idea of in food industry is recommended.

Keywords : probiotic, antimicrobial activity, disc diffusion, dry

