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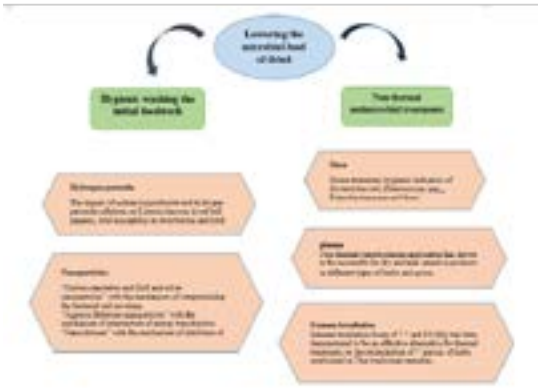
Efficient control of microbial load in dried herbs

Bita Beyzaie
Mashhad Rousta (Tiar) Factory, Iran

Herbs are valued for their distinctive aroma, color and flavor. Drying of herbs after harvest, especially by traditional methods exposes them to the risk of contamination. Therefore, dried herbs may contain high levels of different groups of microorganisms including pathogenic bacteria and toxigenic fungi. Financial loss arose from the rapid spoilage of the foods along with health risk caused by pathogenic bacteria like *Salmonella* and *Bacillus cereus* are serious challenges in the dried herbs industry. In order to control the microbial load of dried herbs, two critical points should be harnessed. The first stage is hygienic washing the initial feedstock, and the second step is efficient drying the product as a decontamination treatment. Sanitizer agents, such as chlorinated water and hydrogen peroxide solutions together with some other disinfectants like salt and vinegar solutions are needed to reduce the initial load of microorganisms in fresh produce. On the other hand, among the frequently used processes applied with the purpose of reducing pathogens from food, thermal treatments are the most efficient ones. However, in terms of herbs, particularly scented ones, temperature would have some negative impacts on sensorial and nutritional characteristics of the final product. Therefore, thermal methods also need to be replaced/supplemented with some non-thermal alternatives such as ozone treatments, ultrasounds and different radiations. The aim of this paper is to summarize the characterization of commonly used disinfectants in the first critical point as well as non-thermal methods in the second one in order to minimize the microbial load of dried herbs.



Biography

Bita Beyzaie graduated from Islamic Azad University of Sabzevar in Food Science and Technology. The year after she was recruited at Mashhad Rousta (Tiar) Factory and has been working there as the Control Quality Manager. Tiar factory's activities lay in manufacturing dried herbs and fruits for onshore and offshore markets. Through her activities at Tiar, Bita had an opportunity to contribute in compiling national standards of dried fenugreek (no. 16067) and dried spinach (no. 16068). She also published a paper entitled "Understanding food habits and correcting nutritional patterns" in in 2012. Aligned with Tiar factory's policy of expanding international activities and services, Bita has initiated appearing in relevant conferences and journals.

beyzaie.bita@gmail.com