FI-46

THE ACCEPTANCE OF THE IRRADIATED FOOD BY THE BRAZILIAN CONSUMERS IS A MATTER OF EDUCATION

Leila Modanez[1], Eliana Cattaruzzi[1], Anna Villavicencio[1], Jorge Behrens[2], Valter Arthur[3]
[1]Instituto de Pesquisas Energéticas e Nucleares (IPEN/CNEN) - Centro de Tecnologia das Radiações, São Paulo, Brazil; [2]University of São Paulo, Faculty of Pharmaceutical Sciences, Food and Experimental Nutrition Department, São Paulo, Brazil; [3]Centro de Energia Nuclear na Agricultura – CENA/USP, Laboratório de Radiobiologia e Ambiente, Piracicaba, Brazil

The commercial use of food irradiation technology in Brazil is growing slowly, due to most Brazilian consumers' preconceived negative idea of nuclear energy. A research unveils that one of the reasons may be consumer's confusion about the difference between the words "irradiation" and "radioactivity" frequently associated with the health hazards. The consumers' acceptance of de new food production and processing technologies is directly connected to the credibility and reliability on information sources. When they are properly informed about what the irradiation technology is, what is it for and its benefits, most of them react positively. Therefore, the main objective of this study is to determine in which countries the food irradiation has credibility among consumers, what kind of information on irradiated foods these consumers received, from flyers to government educational campaigns and to what extent they influenced the overcoming the consumption barrier of foods subjected to this technology. The methodology of the study was supported by a hard survey of the literature. From the unveiled results, the importance of educating consumers in the process of accepting the new technology was evident, especially regarding food irradiation, a technology new which is still related to many cultural myths.

Key words: Acceptance; Consumer; Irradiated Food; Education

FI-47

APPLICATION OF GAMMA IRRADIATION TO REDUCE MICROBIAL CONTAMINATION IN HERBAL POWDER PRODUCTS

Naruemon Neramitmansook, Kanchana Chahorm, Panchalee Prakhongsil, Wannipa Phianphak, Pravait Keawchoung
Thai Irradiation Center, Thailand Institute of Nuclear Technology (Public Organization), Pathumthani, Thailand

This study addresses the decontamination of herbal powder products by gamma irradiation to reduce the total microbial colony count. The average doses were between 2.31-2.62 kGy which were applied to three herbal samples, facial herbal powder, herbal rose brush on and talcum. Pre-irradiated samples showed total colony counts of 3.03×10^4, 2.70×10^4 and 1.00×10^3 CFU/g respectively. Post- irradiation measurements (3 days after irradiation) for facial herbal powder, herbal rose brush on, and talcum showed total colony counts of 1.89×10^2, 5.98×10^2, and 1.22×10^2 CFU/g respectively as shown in Table 1. Samples were stored, and after 9 months storage time, the total colony counts of the three samples were below 100 CFU/g. The residual contamination of the three samples can be attributed largely to a group of soil microorganisms, *Bacillus* spp. (e.g., *Bacillus firmus*, *Bacillus pumilus*, and *Bacillus subtilis/amyloliquefaciens*), the normal flora microorganisms in soil which is the source of herbs. The L* a* b* color system were determined. The non uniformity of $\varnothing E^*$ were calculated and compared between a control group (non-irradiated) and irradiated group revealed that color changes were significantly different in herbal rose brush on ($P<0.05$), but not in facial herbal powder or talcum as shown in Table 2 which suggest that irradiation affects the color of dark colored cosmetics but not the lighter colored ones. In addition, the irradiation effect on color is slowly developed, and this study suggests that a 4.5 months post-irradiation interval is the suitable point to assess color effect. Paired preference tests were conducted in facial herbal powder and herbal rose brush on to determine whether there is a statistically significant preference between the non-irradiated and irradiated groups for 45 respondents who use cosmetics in regular life. The results showed no significant preferences between the two groups at ($P_{max} = 75\%$, $\alpha = 0.05$, $\beta = 0.10$). This concludes that the irradiation doesn't affect the preference of the products and it can be an alternative technology to reduce the microbial decontamination in herbal products.