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Effects of gamma radiation and electron beam on samples of the Food-green peanuts, organic peanuts, and eco-labelling green peanuts industry artificially inoculat with Aspergillus flavus

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Abstract

The purpose of this research is to assess the effects of Gamma Radiation as well as Electron Beam on samples of Brazil nuts that are contaminated with Aspergillus flavus under temperatures of 30uC and a humidity of 93%. The process takes place in fifteen days in incubation where aflatoxins and mycobation are analyzed. The samples are further grouped into three groups namely, control, group 1 and group 2 which receive radiation of 0, 5 and 10 kGy dosage of electron beam EB and gamma radiation GR. Some samples of Noninoculation were illuminated with a similar dosage to evaluate the sensors. The results indicated that 0.80 of the samples had an average water capacity. Illumination or irradiation of gamma radiation and electron beam at a dosage of 5 and 10 kGy were able to eliminate the A.flavus fungi in the samples of Brazil nuts. Analyzes of Aflatoxin indicated that electron beam doses of 5 and 10 kGy lowers aflatoxins levels by 53.32 and 65.66% correspondingly. Moreover this same dosage of gamma radiation lowered the levels of toxins by 70.61 and 84.15% respectively as compared to the control groups. Sensory assessment showed that texture and smell or the illuminated samples of Brazil nuts were acceptable.

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