8044 SHELF LIFE EXTESION OF FRESH AND DEHYDRATED PERSIMMONS USING IONIZING RADIATION

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Persimmon fruits have an excellent flavor, attractive appearance, and highly relevant nutritional quality, being a good source of fiber, sugar (14 to 18%), vitamins A, B, and C, and minerals. In addition, the persimmon tree is a rustic, productive, vigorous, and highly resistant plant that favors interest in its cultivation throughout the Brazilian territory. The aim of this work was to evaluate the effects of different doses of ionizing radiation on fresh and dried persimmon fruits (Diospyros kaki) to increase shelf life. Fresh (FP) and dehydrated (DP) persimmons were submitted to 1kGy and 3kGy and evaluated in a period of 7, 10, 14, and 20 days after irradiation through the following analyses: maturation, color, mass, pH, and firmness. For the analysis of dehydrated persimmons, the food matrices used were packages of 80 grams kept at room temperature and submitted to three doses (3kGy, 5kGy, and 10kGy) and evaluated at 30, 60, and 90 after radiation processing. Treatments with 3kGy did not modify persimmon firmness. Fresh persimmon fruits irradiated with a dose of 1kGy remained in favorable conditions for consumption after 20 days of treatment, while the non-irradiated sample showed deterioration after 14 days of storage. For colorimetry analyses, the results were more satisfactory for dehydrated fruits irradiated at 3kGy and fresh fruits irradiated at 1kGy on the 30th day. The texture of the DP had averages of 5.57 ± 1.18 (10kGy - 60 days) to 7.68±1.50 (5kGy - 30 days) and showed no significant difference concerning doses and storage. The FP water activity remained stable during the experiment at averages above 0.900. The data show a significant difference in the treatments to the brix since there was an increase in the concentration of total soluble solids in the FC submitted to irradiation with 3kGy (33.4). It is concluded that exposure to ionizing radiation at doses from 3kGy was suitable, reinforcing the effectiveness of using gamma rays in the food irradiation conservative technology.