4

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Irradiation and Post-Irradiation Storage of Chicken: Effects on Fat and Proteins

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CHICKEN were subjected to gamma irradiation doses of 2.5, 5.0,7.5 and 10.0 kGy and post-irradiation storage of 21 days at 4± 2°. The effects on fat and protein of chicken were studied. Rate of formation of total volatile basic-nitrogen was less in irradiated samples particularly in samples treated with 5.0 kGy during the entire storage. Fatty acid profiles of chicken lipids were not significantly ($P \leq 0.05$) affected by irradiation especially at doses of 5.0 kGy. However, irradiation caused a large increase in thiobarbituric acid (TBA) values which continued gradually during storage. Changes in amino acids were minimal. Irradiated and unirradiated samples showed the appearance of protein subunits with molecular weights in the range of 10.0 to 88.0 and 10.0 to 67.0 KD, respectively. No changes were observed in the sarcoplasmic protein but the intensity of bands in all irradiated samples decreased after 21 days of storage.

Key words : Chicken, Irradiation, Protein, Fat.

Local production of poultry, in Saudi Arabia was 339,887 and 347, 144 tons in the year 1993 and 1994, respectively (Ministry of Agriculture and Water 1994,1996) and is expected to increase in the coming years. Food irradiation offers a means of extending shelf-life of chicken . The need for this technology is obvious because poultry is usually contaminated by several pathogenic microorganisms such as *Salmonella, Campylobacter* and *Yersinia.*

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