

EFFECTS OF IONIZING RADIATION ON TYROSINE PHOSPHATASE ACTIVITY  
AND LIPID PEROXIDATION IN PEAS (*Pisum sativum*).

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Ionizing radiation maintains the quality of foods, but induces damage in the plants due the generation of ROS. It's well known that phosphatases are enzymes involved in the metabolic processes during germination and soaking increases radiosensitivity of plants. The aim of this study was to analyse the effect of ionizing radiation during pea seedlings associated with tyrosine phosphatase and lipid peroxidation profile. Dried and soaked seeds were irradiated with gamma irradiation with 50Gy and 250Gy and germinated for 7 days. The radicule and caulicule growth remains in a similar profile until the third day, after just non-irradiated seeds had a significant growth, additionally soaked seeds presented the most inhibition. pNPPase activity increases until day 4, and it was higher in non-irradiated seeds. The embryos of irradiated seeds with 250Gy showed 30% lower activity compared with control. Electrophoresis by SDS-PAGE revealed that irradiation promotes an inhibition of proteolysis and this phenomenon was more pronounced when soaked seeds irradiated. Lipid peroxidation of embryos and cotyledons decreases during germination and it was greater in 250Gy soaked seeds. In conclusion these results suggest that ionizing radiation inhibits growth of seeds, promotes generation of ROS, and these mechanisms can be involved with tyrosine phosphatase activity.

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