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MORPHO-ANATOMICAL EFFECTS OF GAMMA RADIATION  
ON THE VEGETATIVE GROWTH AND YIELD OF TOMATO  
(Lycopersicon esculentum Miller)

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## ABSTRACT

Seeds and one-month old seedlings of tomato (Lycopersicon esculentum Mill.) were exposed to .05, .10 and .45 kGy gamma radiation and morpho-anatomical effects were examined. The seed-irradiated plants completed its development up to maturity. However, the height of .10 and .45 kGy seed-irradiated plants were significantly reduced. They also showed profuse branching. The number of flowers that these plants produced were significantly increased but percentage of fruit production was decreased. They also exhibited longer duration of flowering and fruiting stages. With .05 kGy seed-irradiated tomatoes, plants were taller, fruit production was greater and duration of the vegetative and fruiting stages were shorter. The vascular bundles of the seed-irradiated plants showed a ring-like arrangement similar to that of the control. However, the vascular bundles were lesser and diameter size of the xylem vessels were smaller in plants receiving higher doses. The seedling-irradiated tomatoes were significantly affected morpho-anatomically. These were characterized by stunted growth, small stem diameter, leaf deformities, irregularly-shaped xylem vessels with few phloem and eventually died without completing the vegetative stage.



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