

# FAO/IAEA International Symposium on Plant Mutation Breeding and Biotechnology



Contribution ID: 3

Type: Oral

## RADIOSENSITIVITY AND PRELIMINARY RESULTS IN MUTATION BREEDING OF 'AMASAYA' APPLE CULTIVAR

Mutation breeding technique is an efficient way to create new genotypes. Gamma-ray induced mutation breeding of apple commenced at the Egirdir Fruit Research Institute in 2011 corresponding to research project TAGEM/BBAD/16/A08/P03/03, collaborated with Turkish Atomic Energy Authority. The aim of the project was to generate variability in 'Amasya' by gamma irradiation and to evaluate performance of the mutants for different morpho-agronomic characteristics. In order to determine Effective Mutation Dose (EMD), seven doses (0, 10, 20, 30, 40, 50, 60 Gy) was applied to dormant buds in gamma irradiator, 60Co. Irradiated buds were budded onto M9 rootstock by chip budding in a day after irradiation. The dose was calculated 29,01 Gy for 'Amasya', in relation to reduced shoot length by 50% compare to control group. In 2012, approximately 2000 dormant 'Amasya' scions were irradiated at EMD. Physiological defects were observed M1V1 generation. Genetic uniformity was checked through the growth of the mutant population (M1V2-M1V4), calculated mutation frequency (%) and preliminary evaluation of the mutants was taken up. A high number of plants were presented that were lower plant height and trunk cross-sectional area compared to non-irradiated control plants.

### Country or International Organization

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**Track Classification:** Mutation breeding for ornamental and vegetatively propagated crops