

Tanita Tinnok 2007: The Use of Gamma Radiation on Induced Mutation in Leaf Cuttings of African Violet (*Saintpaulia ionantha*). Master of Science (Applied Radiation and Isotopes), Major Field: Applied Radiation and Isotopes, Department of Applied Radiation and Isotopes. Thesis Advisor: Associate Professor Arunee Wongpiyasatid, M.S. 60 pages.

The study on the effect of acute gamma rays on growth, development and induced mutation in African violet (*Saintpaulia ionantha*), violet white center flower was made by irradiating its detached leaves at doses 0, 10, 20, 40, 60, 80 and 100 Gy. Irradiated leaves were then planted in plastic pots containing peat-moss and placed in a shaded greenhouse. A number of leaves survived in each treatment was recorded at 60 days after irradiation. The percentages of leaf survival were 100, 87, 69, 62 and 47 for radiation treatment of 0, 10, 20, 40 and 60 Gy respectively. Radiation treatments beyond 80 Gy killed all leaves. The $LD_{50(60)}$ for irradiated leaf cuttings is 49 Gy. Plantlets (M_1V_1) were transplanted and grown to flowering according to the standard African violet culture. Characters investigated in M_1V_1 plants were the number of leaves per plant, plant canopy width, number of inflorescences per plant, number of flowers per inflorescence, flower size and all characters differed from the original variety.

The differences were found among M_1V_1 plants for number of leaves per plant, number of inflorescence per plant. A number of plants with characters differed from the control plants were recorded as mutants. Mutation percentages in treated plants were 5, 3.33, 11.67 and 18.33 for radiation treatment of 10, 20, 40 and 60 Gy respectively. Mutated M_1V_1 plants were clonally propagated to produce M_1V_2 plants and seven desirable mutants were finally obtained.

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