Piyatida Raethong 2013: Gamma Irradiation on Induced Mutation of Gomphrena interspecific hybrids. Master of Science (Horticulture), Major Field: Horticulture, Department of Horticulture. Thesis Advisor: Associate Professor Thunya Taychasinpitak, M.S. 58 pages.

Induced mutation of vegetative propagation Gomphrena interspecific hybrids between Gomphrenaglobosa and Gomphrenacelosiodes were irradiation carried out by gamma ray. Experiment were conducted such as to study optimum dose rate on growth and survival of Gomphrena interspecific hybrids after gamma irradiated. To study of gamma ray on mutation of Gomphrena interspecific hybrids and study of stoma guard cell. Completely Randomized Design was used. The treatments were applied at the radiation dose of 0, 10, 20, 30, 40 and 50 Gy.

Fifty percentage of lethal dose of Gomphrena interspecific hybrids were estimated at 48 gray. Their height, carnopy width and length of nodes were decreased as radiation dose increase.In M_1V_1 generation, gamma rays caused abnormalities on leaf characters and bract color. The Gomphrena interspecific hybrids mutations were induced at 30, 40 and 50 gray. The dose of 30 gray cause the highest morphological changes. Regrading mutation, the results revealed that irradiation could induce morphological changes such as leaf shape, bract color and bract size.The cutting back method was used on selection of solid mutants.Solid mutant having consistently asexually propagation were selected. There were dwarf small leaf and small bract .

The study of stoma guard cellwhen increased concentration of gamma radiation, the number of guard cells was increased.At 50 grays of gamma ray concentration could induce the biggest size of guard cells.

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