

Suthana Ketmaro 2007: Improvement of *Dracaena* (*Dracaena godseffiana*) Varieties by Using Gamma Rays. Master of Science (Agriculture), Major Field: Horticulture, Department of Horticulture. Thesis Advisor: Associate Professor Thunya Taychasinpitak, M.S. 68 pages.

Improvement of *Dracaena godseffiana* (Florida Beauty, Friendmanii and Bangkok Beauty) by acute and chronic gamma irradiation was conducted. Complete randomized design was used. Rooted cuttings were acutely irradiated with dose of 0, 100, 200, 400, 800 and 1,000 gray(Gy). Irradiated cuttings of Friendmanii and cuttings Bangkok Beauty were died after 120 days. For acute irradiation of Florida Beauty cuttings, $LD_{50(120)}$ was 465 Gy. Their height, canopy width, number of shoot and length of internodes were decreased as radiation doses increased. Chronic irradiation of Friendmanii and Bangkok Beauty with doses of 37.09, 55.41, 73.82, 91.58, 110.26, 179.52, 182.25, 357.24, 498.76 and 992.49 Gy, it was unable to determine the LD_{50} because the radiation dose is too low. However, plant height, canopy width, number of shoot and length of internodes were noticed to be decreased as radiation dose increased. Chronic irradiation of Florida Beauty with doses of 50.91, 101.82, 155.84 and 199.56 Gy, all Florida Beauty irradiated plants were survived but the growth was decreased while radiation dose increased. Regarding mutation, the results revealed that irradiation could induce morphological changes of leaves e.g. leaf variegation pattern, leaf shape and leaf color. The dark green leaves with generously creamy white spot mutant of Friendmanii was selected. Other solid mutants of Bangkok Beauty are creamy yellow spotted leaves, narrow leaves, white margin green-gray centered narrow leaves and creamy yellow spotted narrow leaves. Creamy white centered spot dark green narrow leaf mutant of Florida Beauty was also selected. All solid mutants were consistently asexually propagated.

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Student's signature



Thesis Advisor's signature

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