

**FNCA's MULTILATERAL RESEARCH PROGRAM:
INSECT RESISTANCE IN ORCHID**

**THE GROWTH OF *Dendrobium Jayakarta* AND
Dendrobium Sonia 'Bom 17 Red' IN THE GREENHOUSE AND
DIFFERENT MODIFIED MEDIA FOR INSECT TOLERANCE**

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Abstract

An effort to obtain tolerant orchids was carried out by exposing the protocorm like bodies (PLBs), plantlets and shoots of clone *Dendrobium Jayakarta* to acute gamma rays at the doses 0, 40, 80, 160, 320, 640 and 1280 Gy. Besides, PLBs of *Dendrobium Sonia* 'Bom 17 Red' was irradiated by gamma rays both acute at the doses 10, 20, 30, 70, 80 and 90 Gy; and chronic at the doses 30 + 70 and 50 + 50 Gy. This work was aimed to determine optimum dose of gamma rays and carried out at Center for Application of Isotope and Radiation Technology (CAIRT). The use of different modified Vacin and Went (VW) media enriched with coconut water, active charcoal and Benzyl Amino Purine (BAP) was also conducted at tissue culture laboratories and lath houses of CAIRT and Indonesian Ornamental Crop Research Institute (IOCRI) in order to improve the growth and propagation of irradiated plantlets of *Dendrobium Sonia* 'Bom 17 Red'. Mass rearing Thrips was done in order to multiply Thrips population for inoculating the flowers. The results indicated that PLBs and young shoots of *D. Jayakarta* were very sensitive to gamma rays. The optimum dose for PLBs and plantlets of *D. Jayakarta* was 40 Gy since there was no PLBs and young shoots could grow at the doses more than 40 Gy after 12 months of irradiation. Mass rearing Thrips can be done by using pumpkin as artificial feeding. The most plantlets and clusters of PLBs formed were obtained from irradiated plantlets of *D. Sonia* Bom 17 Red at the dose 70 Gy. PLBs was not found from those at the dose 30 Gy and untreated plantlets. Irradiated plantlets of *D. Sonia* Bom 17 Red at the dose of 90 Gy grown in the lath house of IOCRI for acclimatization showed better performance compared to those at the dose 80 Gy

Key words: PLBs, plantlets, shoots, *Dendrobium*, *Sonia* 'Bom 17 Red', *Dendrobium Jayakarta*, gamma rays, Thrips, insect tolerant.

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