

## ABSTRACT

RAHMAH AULIA AZZAHRAH. Radiosensitivity seeds of Eggplant (*Solanum melongena* L.) cv. Bruno Gamma Irradiation and Test of Variant Against Bacteria *Ralstonia solanacearum*. Under supervised by RENI INDRAYANTI, RIZA DESNURVIA.

Eggplant is one of the essential horticultural crops consumed in Indonesia. However, the production of eggplant in this country is deficient, and only 1% of the world needs it due to inadequate growth factors such as unsuitable climatic conditions, infertile soil, and disease. The disease that often attacks eggplant is bacterial wilt disease caused by *Ralstonia solanacearum*. Currently, bacterial control is still not adequate. One approach to increasing genetic variability is induced mutation by gamma irradiation. This study aims: (1) to obtain the viability and vigor of eggplant seeds of gamma irradiation; (2) to determine the radiosensitivity of eggplant on LD50 value; (3) to identify the morphological characteristics of eggplant *in vitro* and *ex vitro*; (4) to identify the resistance response of eggplant cv. Bruno variant against *Ralstonia solanacearum* bacteria *in vitro* and *ex vitro*. The study was conducted at the Plant Tissue Culture Lab., Biology, FMIPA, Universitas Negeri Jakarta. The research model used in this study is experimental with RAL one factor: gamma doses (0, 40, 80, 120, 160, dan 200 Gy). Morphology diversity of eggplant seeds cv. Bruno gamma irradiation observed height, sum, length, and wide leaf every two weeks and analyzed by SPSS 17.0. The results showed that the value of viability and vigor at a dose of 120 Gy was superior to control plants. Analysis results using *CurveExpert* 1.4 show that the lethal dose that reduces growth by 50% (LD50) is 189.384 Gy. ANOVA analysis at the greenhouse showed that plants regenerated from 120 Gy had the highest mean in plant height, leaf length, and width. The results of the resistance test against the bacteria *Ralstonia solanacearum* showed a dose of 120 Gy was more resistant to bacterial wilt disease than control plants, both *ex vitro* and *in vitro*.

**Keywords.** *Bacterial Wilt Disease, Induction Mutasi, Lethal Dose, Tissue Culture, Tolerant.*