

**THE EFFECT OF GAMMA RAY IRRADIATION ON THE GROWTH AND  
YIELD OF SOME VARIETIES OF CHERRY TOMATOES (*Solanum  
lycopersicum* L. var *Cerasiforme*)**

By : Anissa Renna Fitriyanti  
Supervised by : Bambang Supriyanta

**ABSTRACT**

Cherry tomato are plants that grow a lot in highland areas, so cultivating cherry tomato plants in the lowland has more problems, including high temperatures, therefore, to meet the increasing demand for tomatoes, research needs to be directed at increasing the adaptability of cherry tomato plants. in the lowlands and increasing the yield and quality of tomatoes by planting superior varieties through mutation breeding. Research aims to determine the effect of gamma ray irradiation, LD50, and the optimum dose of gamma ray irradiation on the growth and yield of several cherry tomato plant varieties. The research used a factorial Completely Randomized Design (RAL) method with two factors and three replications. Factor I varieties with two levels, namely Ruby and Rojita. Factor II is the gamma irradiation dose with five levels, namely doses of 0 Gy (without irradiation), 100 Gy, 200 Gy, 300 Gy, and 400 Gy so that there are 30 experimental units. Each experimental unit consists of 10 plants with 3 sample plants. The observation data were analyzed using *Analysis of Variance* (ANOVA) at the 5% level followed by the *Duncan's Multiple Range Test* (DMRT) with testing using Trend Comparison. The results showed that gamma irradiation treatment of 389.03 Gy caused the death of 50% of the population (LD50) of the Ruby variety and a dose of 374.84 Gy caused the death of 50% of the population (LD50) of the Rojita variety. A dose of 100 Gy is the optimum dose for the parameters of plant height, stem diameter and number of fruit per plant in the Rojita variety. A dose of 100 Gy is the optimum dose for the parameters of flowering age, harvest age, and fruit weight per plant in the Ruby variety.

**Keyword:** Cherry tomato, Iradiasi Gamma ray irradiation, *Lethal Dose*