Effect of Various Doses of Gamma Rays on Growth and Yield of Tomato Varieties Mawar and Tora IPB (*Lycopersicum esculentum* Mill.)

By : Muhammad Atha Arkan Satriawan
Supervised by : Endah Wahyurini

ABSTRACT

Gamma irradiation improves plant traits such as greater fruit weight to accelerate harvest age. The purpose of the study was to determine the interaction between the dose of gamma rays and varieties on the growth and yield of tomato plants, get the dose of gamma rays and get tomato varieties that produce the best growth and yield. The research method used a completely randomized design with 2 factors, namely tomato plant varieties and gamma irradiation doses. Translated with DeepL.com (free version)Observation data were analyzed with variance analysis, DMRT at 5% level, and Polynomial Contrast. The results showed that doses of gamma radiation of 72.25-163.5 gy on Mawar varieties could increase plant height at 14 - 56 HST, and accelerate flowering age. Doses of gamma rays 75.91-313 gy on Tora IPB varieties can increase plant height at 14, 28, and 56 HST, fruit weight per plot, and accelerate flowering age. Gamma ray dose of 100 gy (G1) can increase the number of leaves at 28, 42 HST, stem diameter at 28 - 56 HST, fruit diameter, and number of fruits per plant. Tomato variety Tora IPB (V2) was significantly better than the Mawar variety (V1) in the parameters of the number of leaves at 14 - 42 HST, stem diameter at 14, 28, and 56 HST, fruit diameter, and number of fruits per plant. The LD50 value for the Tora IPB variety was 571.807 gy and the Mawar variety was 451.481 gy.

Key word : *tomato, varieties, gamma ray*