RESPONSE OF GROWTH AND YIELD OF CUCUMBER (*Cucumis sativus* L.) LOCAL MADURA VARIETY AGAINST MUTATION INDUCTION THROUGH GAMMA RAY IRRADIATION

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ABSTRACT

The local Madurese variety of cucumber (*Cucumis sativus* L.) tends to experience a decrease in productivity. One effort to increase cucumber productivity can be done by developing superior varieties through gamma ray irradiation mutation breeding. This research aims to determine the effect of induced gamma ray irradiation on the growth and yield of local Madurese cucumbers. The research was carried out in the Babarsari Nuclear Technology Polytechnic laboratory and land in Gunungkidul. The research used the Completely Randomized Design and Completely Randomized Block Design methods with a single factor and three replications. The treatments used were gamma ray doses of 0 Gy, 100 Gy, 200 Gy, 300 Gy. 400 Gy, 500 Gy, 600 Gy, 700 Gy, 800 Gy, 900 Gy and 1000 Gy. Data were analyzed using Analysis of Variance (ANOVA) at 5% level, followed by the Least Significant Difference Test at 5% level. The results showed that the 0 Gy treatment had the highest germination capacity, the fastest flowering age and the largest fruit diameter, the 100 Gy dose produced the largest number of leaves, the highest plant height and the highest sweetness level, the 200 Gy dose produced the largest fruit size. the longest fruit, the largest fruit weight per plant and the greatest crunch, a dose of 300 Gy produces the largest fruit weight per fruit. A dose of 803,380 causes death in 50% of the population (LD50).

Keyword : Madura Local Cucumber, Mutation, Gamma Rays