

(ID 056)

Determination on the Impact of *Azolla pinnata* Liquid Fertilizer on Growth and Yield of Tomato (Var-*Thilina*)

Laksikaa, V.¹, Vijitha, V.^{1*}, Somarathna, W.G.R.S.²

¹*Department of Biosystems Technology, University of Jaffna, Jaffna, Sri Lanka*

²*Rice Research Station, Department of Agriculture, Ampara, Sri Lanka*

*vijitha@univ.jfn.ac.lk

Abstract

The tomato plant is one of the most popular and widely grown vegetables in Sri Lanka. Even though usage of inorganic fertilizers improves the yield, these chemicals could cause several detrimental impacts on environment and human health. Therefore, the current study was conducted to investigate the effects of *Azolla* liquid fertilizer (ALF) on growth and yield of tomato, variety *Thilina*. The field experiment was designed with four treatments namely T1-100% of ALF, T2-50% of Department of Agriculture (DOA) recommended fertilizer+50% of ALF, T3-100% of DOA recommended fertilizer and T4-Control, each with three replicates and laid out in a randomized complete block design. The fertilizers were applied as foliar and ground application from one week after transplanting and continued until pod formation. Then the growth parameters such as mean plant height, number of leaves, number of branches, number of flowers, number of pods, and individual pod weight per plant were recorded for analysis. According to the results, T2 performed well in terms of mean plant height (68.83 cm), number of leaves (30), number of branches (4), number of flowers (13), number of pods (11), individual pod weight per plant (43.33 g) and total yield (490 g) while poor performance was recorded in control for all parameters with the values of 53.33 g, 23 g, 3 g, 6 g, 3 g, 30 g, and 100 g respectively. As significant differences were noticed in the statistical analysis for all parameters excluding the individual pod weight per plant only, it can be concluded that applying the combination of 50% ALF with 50% DOA recommended fertilizer improves the growth and yield of tomato significantly. Further, it would reduce the cost of production by minimizing the money spent on inorganic fertilizers and mitigates the environmental damages.

Keywords: Foliar application, Ground application, Inorganic fertilizers, Liquid fertilizer