Application of Liquid Smoke Concentration and Spraying Intervals in Controlling Pests on Tomato Plants (*Lycopersicum esculentum* Mill.).

By: Humam Yusuf Abdussalam

Supervised by: Abdul Rizal AZ and Mofit Eko Poerwanto

ABSTRACT

One of the main obstacles in tomato production is the disturbance of Plant Pest Organisms (OPT). Long-term use of synthetic pesticides can disrupt human health because they contain many chemicals that are carcinogenic. Liquid smoke contains various compounds including phenols, carbonyls, acids, furans, alcohols, lactones, hydrocarbons and polycyclic aromatics which are anti-microbial and toxic to insect pests so they have the opportunity to be developed as natural pesticides. The research was carried out in August - October 2023 in Magelang Regency. The research used a Complete Randomized Block Design (RCBD) with 2 factors, namely 3 levels of liquid smoke concentration: 15 mL/L, 30 mL/L, and 45 mL/L and 3 levels of spraying time intervals: once every 2 days, once every 5 days, and once every 8 days. The data results was analyzed using the Analysis of Variance (ANOVA) at 5% level and further testing using the Duncan Test at 5% level, and an Orthogonal Test was carried out to determine the comparison of treated plants with control plants. The research results showed that a concentration of 45 mL/L and a spraying interval every 2 days had the best results in controlling pests that attack tomato plants. This can be seen in the parameters of the type of pest that attacks, the percentage of plants attacked (%), the percentage of leaves attacked (%), and the intensity scale of pest attack damage (%).

Key words: tomatoes, pests, liquid smoke, concentration, spray interval.