

EFFECT OF ADMINISTRATION OF CHICKEN MANURE AND *Rhizobium* spp. ON THE GROWTH AND PRODUCTION OF COWLEBEANS (*Vigna unguiculata* L. Walp)

Supervised by Rudi Wardani, S.Pd., M.Si

Faradina Fitria Wardani

Studi Program of Food Crop Production Technology
Department of Agricultural Production

ABSTRACT

Cowpeas have high nutritional content so they have the potential to be developed in Indonesia. Increasing cowpea production can be done by using chicken manure and rhizobium spp bacteria. The aim of this research is to analyze the impact of application of chicken manure fertilizer and rhizobium spp bacteria on the increase and production of cowpea plants. This research was conducted in September-December 2023. This research was designed using a Randomized Complete Block Design (RCBD) consisting of 2 factors and 3 replications. The chicken manure fertilizer treatment consisted of 3 levels, namely 1.6 kg/plot, 2 kg/plot, 2.4 kg/plot, while the treatment of rhizobium spp isolates came from the root zone of soybeans, edamame and peanuts with the same number of colonies, namely 1×10^7 cfu/ml. The research results proved that chicken manure fertilizer treatment at a dose of 2.4 kg/plot had a significant effect on stover weight (132.44 g), number of pods per sample (28.00 pods), dry weight per plot (753.55 g), dry seed weight per sample (54.44 g). This is because chicken manure contains high organic C so it can increase the uptake of nutrients in the plant root zone. These nutrients will later be absorbed by plants to carry out metabolic processes, especially photosynthesis. In addition, the application of rhizobium spp originating from the root zone of soybean plants showed a significant effect on the fresh weight of pods per sample (106.27 g) compared to other treatments. It is suspected that rhizobium spp in the root zone of soybeans are more easily adapted to the root zone of cowpea plants so that they are able to trigger the growth of cowpea through biological nitrogen fixation.

Keywords: *Organic Fertilizer, Rhizobacteria, Rhizosfer.*