

Application of *Azolla pinnata* Fertilizer and Urea Fertilizer to Increase Production of Mung Beans (*Vigna radiata* L.)

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ABSTRACT

In Indonesia, mung bean is one of the legume crop commodity that contributing as second largest export number after corn. According to the Central Statistics Agency of Indonesia (BPS), the export volume of mung bean increased from 2016-2019. Therefore, greater efforts needed to meet the growing export demand. Decreased soil fertility negatively affects green beans production. By giving the proper rate of *Azolla pinnata* combined with Urea fertilizer, it can hopefully improve soil fertility, thus may help to reduce synthetic fertilizers use while increasing the mung bean production. This study aimed to determine the effect of *Azolla pinnata* and Urea application to increase mung bean production. This field research conducted from December 2020 to April 2021 at Jember State Polytechnic. This study used a randomized block design (RBD) with 2 factors, namely *Azolla pinnata* rate and Urea dose within 12 treatment combinations and 3 replications. The *Azolla pinnata* factor consisted of 3 levels, namely control (0 ton/ha), 3 tons/ha, and 6 tons/ha while the Urea factor consisted of 4 levels, namely 0 ton/ha, 25 kg/ha, 35 kg/ha, and 45 kg/ha. The results showed that the application of *Azolla pinnata* and Urea fertilizer both were significantly different in term of fresh pod weight per plot and dry seed weight of green beans per plot. Similarly, the both treatments showed a very significant difference on plant height and dry seed weight of green beans per sample. In contrast, the number of pods per sample, the fresh pod weight, and the weight of 100 green bean seeds per plot showed no significant difference. Moreover, the interaction of *Azolla pinnata* and Urea showed no significantly different (NS) on all observation parameters.

Keywords: Azolla pinnata, Mung bean, and Urea