

INTISARI

Perkebunan teh rakyat memiliki keterbatasan pemeliharaan yang tidak optimal berupa pupuk anorganik dan fungisida sintetik. Pasokan tersebut hampir tidak pernah diberikan. Maka diperlukan metode lain yaitu pemberian bakteri bermanfaat berupa *Azotobacter sp.* dan *Bacillus sp.*. Hal tersebut dilakukan supaya pekebun tetap dapat memberikan masukan nutrisi dan proteksi secara optimal dan berkelanjutan. Penelitian ini bertujuan untuk mengetahui 1) peran *Azotobacter sp.* dan *Bacillus sp.* terhadap produktivitas dan mutu hasil pertanaman teh di elevasi sedang pada periode musim hujan serta 2) efektivitas *Azotobacter sp.* dan *Bacillus sp.* yang dapat mengurangi masukan anorganik dalam meningkatkan produktivitas dan mutu hasil pertanaman teh di elevasi sedang pada periode musim hujan. Percobaan disusun menggunakan rancangan acak kelompok lengkap (RAKL) faktor tunggal dengan tiga blok sebagai ulangan. Terdapat tujuh perlakuan yang diuji, terdiri dari lima perdu per plot perlakuan dengan tiga kali ulangan, sehingga jumlah total perdu yang digunakan sebanyak 105 perdu. Pengamatan utama mencakup variabel komponen produktivitas dan mutu hasil pucuk teh yaitu jumlah pucuk (peko dan burung), rasio jumlah pucuk peko per pucuk burung, bobot per pucuk (peko dan burung), panjang internodia, analisis petik (pucuk muda dan pucuk tua), analisis pucuk (peko dan burung) dan bobot kering pucuk. Data yang diperoleh selanjutnya diuji varians (ANOVA), *Least Significant Difference* (LSD) $\alpha = 5\%$ dan *Principal Component Analysis* (PCA). Hasil penelitian menunjukkan bahwa pemberian *Azotobacter sp.* dan *Bacillus sp.* secara foliar dapat meningkatkan produktivitas dan mutu hasil pertanaman teh di elevasi sedang pada periode musim hujan, berupa bobot kering pucuk sebesar 26,05%. *Azotobacter sp.* dan *Bacillus sp.* efektif dapat mengurangi 50% masukan anorganik dalam meningkatkan produktivitas dan mutu hasil pertanaman teh di elevasi sedang pada periode musim hujan.

Kata kunci: *Azotobacter sp.*, *Bacillus sp.*, elevasi sedang, musim hujan, mutu hasil, produktivitas, teh

ABSTRACT

Civil tea plantations have limited maintenance that are not optimal in form of inorganic fertilizers and synthetic fungicides. Both inputs are rarely given. Another method is needed forming of beneficial microbia by giving Azotobacter sp. and Bacillus sp. It has to be done so farmers can still provide optimal and sustainable inputs of nutrition and protection. The objectives of study were to determine 1) the role of Azotobacter sp. and Bacillus sp. in increasing yield and quality of tea in medium altitude during rainy season, and 2) the effectiveness of Azotobacter sp. and Bacillus sp. on decreasing inorganic inputs in increasing yield and quality of tea in medium altitude during rainy season. This experiment plot was designed using a randomized completely block design (RCBD) consisting of one factor with three blocks as replication. There were seven treatments contain five bushes with three replications resulting in 105 experimental bushes. The main data were observed including yield and quality of tea characteristics consisting of the number of buds (pecco and banjhi), bud ratio, fresh weight per bud (pecco and banjhi), picking analysis, bud analysis, and dry weight of bud. The data obtained were analyzed by using Variance Analysis (ANOVA) of RCBD followed by Least Significant Difference (LSD) $\alpha = 5\%$ if there were significant differences, and Principal Component Analysis (PCA) was performed. The result showed that foliar application of Azotobacter sp. and Bacillus sp. could able to increase yield and quality of tea in medium altitude during rainy season, in form of dry weight of bud was 26,05%. Azotobacter sp. and Bacillus sp. are effective for decreasing 50% inorganic inputs in increasing yield and quality of tea in medium altitude during rainy season.

Keywords: *Azotobacter sp., Bacillus sp., medium altitude, rainy season, tea, yield, quality*