

INTISARI

Penelitian ini bertujuan untuk menemukan hubungan antara ketersediaan kalsium, aktivitas fisiologis, dan produksi serat abaka. Penelitian ini dilakukan dengan metode survei. Variabel yang diamati dalam penelitian ini yaitu iklim mikro; sifat fisika tanah; sifat kimiawi tanah; aktivitas nitrat reduktase (ANR), kadar klorofil, bukaan stomata, kerapatan stomata, jumlah daun, bobot segar daun, luas daun, bobot segar *pseudostem*, dan bobot kering serat abaka. Berdasarkan data yang telah terkumpul, ditemukan bahwa ketersediaan kalsium ditanggapi oleh abaka secara signifikan. Abaka menanggapi ketersediaan kalsium pada variabel ANR, kadar klorofil, kerapatan stomata, jumlah daun, bobot segar daun, luas daun, bobot segar *pseudostem*, dan bobot kering serat abaka. Berdasarkan pembahasan yang telah dilakukan, dapat disimpulkan bahwa ketersediaan kalsium ditanggapi oleh tanaman abaka dalam aktivitas fisiologis dan produksi seratnya. Selain itu, ditemukan kecenderungan bahwa dengan adanya peningkatan ketersediaan kalsium maka semakin aktif aspek fisiologis dan produksi serat abaka dalam penelitian ini. Adapun mekanisme yang diduga dapat menjelaskan fenomena ini adalah hadirnya *calmodulin*.

Kata kunci: fisiologi, kalsium, serat, abaka

ABSTRACT

This study aims to find the relationship between calcium availability, physiological activity, and abaca fiber production. This research was conducted using a survey method. The variables observed in this study were microclimate; physical properties of soil; chemical properties of soil; nitrate reductase activity (ANR), chlorophyll content, stomatal opening, stomatal density, leaf number, fresh leaf weight, leaf area, fresh pseudostem weight, and dry abaca fiber weight. Based on the collected data, it was found that the availability of calcium was responded by abaca significantly. Abaca responded to calcium availability in the variables ANR, chlorophyll content, stomatal density, leaf number, fresh leaf weight, leaf area, fresh pseudostem weight, and dry abaca fiber weight. Based on the discussion, it can be concluded that the availability of calcium was responded to by the abaca plant in its physiological activity and fiber production. Furthermore, it was found that with increasing calcium availability, the physiological aspects and fiber production of abaca became heightened in this study. The mechanism that is suspected to explain this phenomenon is the presence of calmodulin.

Keyword: physiology, calcium, fiber, abaca