

INTISARI

Abaka adalah tanaman yang dimanfaatkan bagian batangnya untuk dijadikan serat. Seng (Zn) adalah mikronutrien yang dibutuhkan tanaman untuk meningkatkan kapasitas pertukaran kation akar, meningkatkan penyerapan nutrisi penting, dan mengontrol hormon pertumbuhan tanaman. Penelitian bertujuan untuk mengetahui pengaruh kandungan Zn tersedia tanah akhir terhadap aktivitas fisiologis, pertumbuhan, dan hasil serat tanaman abaka. Penelitian lapangan dilaksanakan pada bulan September 2022 - Maret 2023 di lahan perkebunan abaka yang berlokasi di Ngemplak, Pakem, dan Cangkringan, sedangkan pengujian sampel tanaman dan tanah dilakukan di Laboratorium Manajemen Produksi Tanaman dan Laboratorium Tanah, Fakultas Pertanian, Universitas Gadjah Mada. Percobaan lapangan dilaksanakan menggunakan rancangan lingkungan tersarang (*nested design*), faktor kandungan Zn tanah tersarang pada lokasi. Variabel yang diamati yaitu karakteristik iklim mikro, sifat fisika dan kimia tanah, kandungan dan serapan Zn jaringan, aktivitas fisiologis, pertumbuhan dan hasil serat tanaman abaka. Data yang telah diperoleh selanjutnya dianalisis Kovarian (ANKOVA), jika terdapat beda nyata antar perlakuan dilanjutkan dengan uji Tukey α 5%. Hasil penelitian memberikan informasi bahwa kandungan Zn tersedia tanah akhir berbeda diantara lokasi Ngemplak, Pakem dan Cangkringan. Kandungan Zn tersedia tanah akhir di lokasi Ngemplak (0,913 mg/kg) lebih tinggi dibandingkan dengan lokasi Pakem (0,132 mg/kg) dan Cangkringan (0,016 mg/kg). Kandungan Zn tersedia tanah akhir yang lebih tinggi di lokasi Ngemplak menyebabkan tanaman abaka memiliki kapasitas fisiologis, pertumbuhan, dan hasil serat yang juga lebih tinggi jika dibandingkan dengan lokasi Pakem dan Cangkringan.

Kata kunci: abaka, Zn, fisiologi, pertumbuhan, serat

ABSTRACT

Abaca is a crop whose pseudo stems are used to make fiber. Zinc (Zn) is a micronutrient that crops need to increase root cation exchange capacity, increase the absorption of essential nutrients, and control crop growth hormones. The research aim was to determine the effect of end soil available Zn content on the physiological activities, growth, and fiber yield of abaca. Field experiment was carried out in September 2022 - March 2023 on abaca plantations located in Ngemplak, Pakem, and Cangkringan, while tissue and soil samples analysis were carried out at Plant Production Management Laboratory and Soil Laboratory, Faculty of Agriculture, Universitas Gadjah Mada. Field experiment was arranged with nested design, and end soil available Zn contents were nested to locations. Variables observed were microclimate characteristics, soil physical and chemical properties, tissue Zn content and uptake, physiological activities, growth, and fiber yield of abaca. Data were then analyzed with covariance analysis (ANCOVA), if there were significant differences among treatments then proceed with Tukey Test at a 5% levels. The research showed that end soil available Zn contents were different among Ngemplak, Pakem, and Cangkringan. The end soil available Zn content at Ngemplak (0.913 mg/kg) was higher than at Pakem (0.132 mg/kg), and Cangkringan (0.016 mg/kg). The higher end soil available Zn content at Ngemplak causes abaca to have higher physiological activities, growth, and fiber yield when compared to Pakem and Cangkringan.

Keywords: abaca, Zn, physiology, growth, fiber