

OBSERVATION OF FOLIAR FERTILIZER APPLICATION ON ARABICA COFFEE SEEDLINGS UNDER HIGH AMBIENT AIR TEMPERATURE

ANGGI HIKMATUL HIJJA



**TECHNOLOGY AND MANAGEMENT OF PLANTATION PRODUCTION
VOCATIONAL SCHOOL
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J0416221002

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ABSTRAK

ANGGI HIKMATUL HIJJA. Pengamatan Aplikasi Pupuk Foliar pada Bibit Kopi Arabika di Bawah Suhu Udara Ambien Tinggi. Dibimbing oleh AIDIL AZHAR.

Coffea arabica L. sangat rentan terhadap cekaman suhu tinggi, terutama pada fase pembibitan ketika sistem perakaran dan jaringan fotosintetik belum berkembang sempurna. Penelitian ini bertujuan mengevaluasi respons kandungan nitrogen, kinerja fotosintesis, dan morfologi bibit kopi Arabika terhadap berbagai frekuensi aplikasi pupuk foliar organik di bawah suhu udara ambien tinggi. Penelitian dilaksanakan di rumah kaca Vietnam National University of Agriculture (VNUA), Hanoi, pada September–November 2025 (suhu harian 29–36°C), menggunakan rancangan satu faktor dengan tujuh taraf frekuensi aplikasi (T0–T6) dan 126 unit percobaan. Bibit yang diberi pupuk foliar menunjukkan performa lebih baik dibandingkan kontrol pada seluruh parameter yang diamati. Frekuensi aplikasi setiap dua hari memberikan performa fisiologis tertinggi, sedangkan frekuensi setiap empat hari memberikan perkembangan akar terbaik. Interval aplikasi dua hingga empat hari merupakan rentang paling efektif dalam mendukung pertumbuhan bibit kopi Arabika di bawah suhu tinggi, sehingga dapat menjadi strategi mitigasi cekaman suhu pada fase pembibitan.

Kata kunci: cekaman suhu tinggi, *Coffea arabica* L., pupuk organik cair

ABSTRACT

ANGGI HIKMATUL HIJJA. Observation of Foliar Fertilizer Application on Arabica Coffee Seedlings Under High Ambient Air Temperature. Supervised by AIDIL AZHAR.

Coffea arabica L. is highly susceptible to heat stress, particularly during the nursery stage when the root system and photosynthetic tissues are not yet fully developed. This study evaluated the responses of nitrogen content, photosynthetic performance, and morphological traits of Arabica coffee seedlings to different application frequencies of organic foliar fertilizer under high ambient air temperature. The research was conducted in a greenhouse at Vietnam National University of Agriculture (VNUA), Hanoi, from September to November 2025 (daily temperatures of 29–36°C), using a single-factor design with seven application-frequency levels (T0–T6) and 126 experimental units. Seedlings receiving foliar fertilizer outperformed the control across all observed parameters. An application frequency of every two days produced the highest physiological performance, while every four days resulted in the best root development. An application interval of two to four days was identified as the most effective in supporting seedling growth under high ambient air temperature, making it a viable heat-stress mitigation strategy during the nursery stage.

Keywords: *Coffea arabica* L., heat stress, liquid organic fertilizer



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OBSERVATION OF FOLIAR FERTILIZER APPLICATION ON ARABICA COFFEE SEEDLINGS UNDER HIGH AMBIENT AIR TEMPERATURE

ANGGI HIKMATUL HIJJA

Undergraduate Thesis
As one of the requirements for obtaining an
Applied Bachelor degree on
Technology and Management of Plantation Production Study Program

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Examiner for the Undergraduate Thesis Examination: Arif Tirtana, S.P., M.Si.



Title : Observation of Foliar Fertilizer Application on Arabica Coffee
Seedlings Under High Ambient Air Temperature
Name : Anggi Hikmatul Hijja
Student ID : J0416221002

Approved by

Supervisor:
Dr. Aidil Azhar, S.P., M.Sc.

Acknowledged by

Head of Study Program:
Merry Gloria Meliala, S.P., M.Si.
NIP 198810122019032020

Dean of Vocational School:
Dr. Ir. Aceng Hidayat, M.T.
NIP 196607171992031003



Examination Date: August 4th, 2026

Graduate Date:



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FOREWARD

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