

## **PENGARUH ARAH LERENG TERHADAP AKTIVITAS FISILOGIS DAN KUALITAS MINYAK DAUN CENGKIH (*Syzygium aromaticum* (L.) Merrill & Perry.) DI PEGUNUNGAN MENOREH**

### **Intisari**

Menurut kearifan lokal masyarakat Jawa di wilayah Samigaluh, tanaman cengkih yang ditanam di lereng yang menghadap timur dan utara memasuki masa panen bunga yang lebih cepat dibandingkan lereng barat dan selatan. Akan tetapi, penelitian mengenai pengaruh arah lereng terhadap kualitas minyak daun cengkih masih jarang dilakukan. Penelitian ini bertujuan untuk mengetahui pengaruh arah lereng terhadap karakter iklim mikro, aktivitas fisiologis, kuantitas dan kualitas hasil cengkih di masing-masing kelereng. Kemudian, menentukan arah lereng terbaik bagi komoditas cengkih di pegunungan Menoreh serta paket teknik budidaya untuk lereng lainnya. Penelitian dilakukan di kebun cengkih rakyat dusun Kayugedhe dan Sumbo, desa Gerbosari, kecamatan Samigaluh, kabupaten Kulon Progo pada bulan September 2016-Februari 2017. Penelitian disusun dalam rancangan acak lengkap dengan faktor utama arah lereng yang terdiri atas aras timur, utara, selatan, dan barat. Parameter yang diamati adalah anasir iklim mikro, sifat kimia tanah, hara jaringan daun, aktivitas fisiologis cengkih, dan hasil serta kualitas minyak daun cengkih. Data yang diperoleh kemudian dianalisis varians (ANOVA) pada level 5 %. Jika terdapat beda nyata kemudian diuji lanjut dengan beda nyata jujur (BNJ). Hasil penelitian memberikan informasi bahwa arah lereng berpengaruh nyata terhadap anasir iklim mikro di setiap arah lereng yang terbagi menjadi lereng hangat (timur dan utara) dan lereng dingin (barat dan selatan). Anasir iklim mikro (penyekatan cahaya, suhu udara, suhu tanah, kelembaban relatif udara, kadar lengas tanah) berperan dalam pembentukan tanah dan sifat kimia tanah (pH, KPK, N total, P tersedia, K tersedia, Ca, Mg, dan S) serta hara yang dapat diserap oleh tanaman cengkih. Selain itu, arah lereng juga berpengaruh terhadap aktivitas fisiologis yaitu kandungan klorofil a, b dan klorofil total, ANR, laju fotosintesis, laju transpirasi, konduktivitas stomata, dan suhu daun. Aktivitas fisiologis yang berbeda di tiap lereng mempengaruhi kualitas minyak terutama kadar eugenol, kariofilen, berat jenis, volume, dan rendemen. Arah lereng barat layak dijadikan arah terbaik karena menghasilkan minyak yang hampir sesuai SNI. Untuk arah lereng lainnya, paket teknologi budidaya yang dapat diterapkan adalah penyesuaian pemupukan terutama pemupukan Ca, Mg, dan S.

Kata kunci : arah lereng, iklim mikro, kesuburan tanah, minyak cengkih

## EFFECT OF SLOPE ASPECT ON PHYSIOLOGICAL ACTIVITY AND QUALITY OF CLOVE LEAF OIL (*Syzygium aromaticum* (L.) Merrill & Perry.) IN MENOREH MOUNTAIN AREA

### *Abstract*

According to local wisdom of Javanese people in the Samigaluh sub-district, clove plants grown on east and north facing slopes enter the flowering time faster than the west and south facing slopes. However, research about the effect of slope aspect on the quality of clove leaf oil is still rare. This study aims to determine the effect of slope aspect on the character of microclimate, physiological activity, quantity and quality of cloves in each slope. Then, this study aims to determine the best slope aspect for clove commodities in the Menoreh mountain area as well as cultivation techniques for other slopes. The research was conducted in the clove forest in Kayugedhe and Sumbo area, Gerbosari village, Samigaluh sub-district, Kulon Progo district in September 2016-February 2017. The study was arranged in a complete randomized design with one factor: slope aspect of east, north, south and west. The parameters observed were microclimates, soil chemical properties, leaf tissue nutrients, physiological activity of cloves, and quality of clove leaf oil. Data were analyzed with analysis of variance (ANOVA) at 5 % level. If there is a significant difference then tested further with honestly significant difference (HSD). The results showed informations that the slope aspect has a significant effect on the microclimate in each aspect, which is divided into warm slopes (east and north) and humid slopes (west and south). Microclimate elements (light interception, air temperature, soil temperature, relative humidity, and soil moisture content) play a role in soil formation and soil chemical properties (pH, CEC, total N, available P, available K, Ca, Mg, and S) also nutrients that can be absorbed by clove plants. In addition, the slope direction also affects the physiological activity as well as a, b and total chlorophyll content, Nitrate Reductase Activity, photosynthesis rate, transpiration rate, stomatal conductivity, and leaf temperature. Different physiological activity on each slope affects the quality of oil especially eugenol, kariofilen, oil density, volume, and rendement. West facing slope is the best aspect for clove trees because it can produces oil that is almost close to Indonesian National Standard. For the other slope direction, cultivation technique that can be applied is adjustment of fertilization, especially fertilization of Ca, Mg, and S.

Keywords : slope aspect, microclimate, soil fertility, clove oil