

RINGKASAN

Kopi liberika (*C. liberica*) merupakan kelompok kopi liberoid yang memiliki toleransi tinggi dalam beradaptasi dengan lingkungan. Kopi ini memiliki ciri khas tidak sepahit kopi Robusta (*C. canephora*), memiliki aroma khas mirip nangka dan rasa asam menyerupai kopi Arabika (*C. arabica*). Salah-satu keunggulan kopi liberika yaitu mampu tumbuh di dataran rendah, beradaptasi dengan baik di tanah gambut dan lebih toleran terhadap serangan penyakit. Walaupun demikian, tidak menutup kemungkinan tanaman ini dapat terinfeksi suatu jenis penyakit. Salah-satu penyakit yang sering menginfeksi tanaman kopi adalah penyakit bercak daun akibat infeksi *Cercospora coffeicola* dengan gejala munculnya bercak daun warna kuning kecoklatan melingkar di sekeliling bagian daun dengan ukuran tak beraturan dan muncul secara acak. Infeksi jamur ini menjadi penyebab menurunnya hasil panen mencapai 30% karena dapat menginfeksi mulai masa pembibitan hingga usia produktif. Tujuan penelitian ini untuk mengetahui kandungan senyawa metabolit sekunder yang terkandung dalam kulit dan daging buah kopi liberika, kemudian melihat pengaruh pemberian ekstrak etanol kulit dan daging buah kopi liberika sebagai antifungi dan mengetahui konsentrasi optimal ekstrak etanol kulit dan daging buah kopi liberika dalam menghambat pertumbuhan *C. coffeicola*. Penelitian ini merupakan penelitian eksperimental menggunakan metode Rancangan Acak Lengkap yang dilakukan dengan beberapa tahapan, yaitu: pengambilan dan preparasi sampel, maserasi, ekstraksi, skrining fitokimia, isolasi jamur patogen, pemurnian dan identifikasi isolat jamur patogen serta uji aktivitas antifungi ekstrak etanol kulit dan daging buah kopi liberika dengan konsentrasi 10%, 20% dan 30% terhadap *C. coffeicola*. Berdasarkan hasil penelitian didapatkan bahwa kandungan senyawa metabolit sekunder ekstrak etanol kulit dan daging buah kopi liberika terdiri dari senyawa flavonoid, alkaloid, steroid atau terpenoid, tanin, polifenol dan saponin. Ekstrak etanol kulit dan daging buah kopi liberika memiliki aktivitas antifungi terhadap *C. coffeicola* yang ditunjukkan dengan adanya daya hambat pada perlakuan. Berdasarkan analisis statistik ANOVA dan uji lanjut DMRT pada taraf kepercayaan 95% didapatkan bahwa konsentrasi optimal ekstrak etanol kulit dan daging buah kopi liberika dalam menghambat *C. coffeicola* adalah konsentrasi 30% dengan diameter daya hambat 86,78% dengan kategori daya hambat sangat kuat.

Kata kunci: Aktivitas antifungi, *C. coffeicola*, *C. liberica* L., Kulit dan daging buah

SUMMARY

Liberica coffee (*C. liberica*) is a group of liberoid coffee that has high tolerance in adapting to the environment. This coffee has the characteristic of not being as bitter as Robusta coffee (*C. canephora*), has a distinctive aroma similar to jackfruit and a sour taste similar to Arabica coffee (*C. arabica*). One of the advantages of liberica coffee is that it can grow in lowlands, adapts well to peat soil and is more tolerant to disease attacks. However, it is possible that this plant can be infected with a type of disease. One of the diseases that often infects coffee plants is leaf spot disease due to *Cercospora coffeicola* infection with symptoms of the appearance of yellow-brown leaf spots in a circle around the leaf with irregular sizes and appearing randomly. This fungal infection causes a decrease in harvest yields of up to 30% because it can infect from the nursery period to productive age. The purpose of this study was to determine the content of secondary metabolite compounds contained in the skin and flesh of liberica coffee fruit, then to see the effect of giving ethanol extract of skin and flesh of liberica coffee fruit as an antifungal and to determine the optimal concentration of ethanol extract of skin and flesh of liberica coffee fruit in inhibiting the growth of *C. coffeicola*. This study is an experimental study using a Completely Randomized Design method which was carried out in several stages, namely: sample collection and preparation, maceration, extraction, phytochemical screening, isolation of pathogenic fungi, purification and identification of pathogenic fungal isolates and antifungal activity test of ethanol extract of skin and flesh of liberica coffee fruit with concentrations of 10%, 20% and 30% against *C. coffeicola*. Based on the results of the study, it was found that the content of secondary metabolite compounds of ethanol extract of skin and flesh of liberica coffee fruit consists of flavonoids, alkaloids, steroids or terpenoids, tannins, polyphenols and saponins. Ethanol extract of skin and flesh of liberica coffee fruit has antifungal activity against *C. coffeicola* which is indicated by the presence of inhibitory power in the treatment. Based on statistical analysis of ANOVA and further DMRT test at a confidence level of 95%, it was found that the optimal concentration of ethanol extract of skin and flesh of liberica coffee fruit in inhibiting *C. coffeicola* is a concentration of 30% with an inhibitory power diameter of 86.78% with a very strong inhibitory power category.

Key glass: Antifungal activity, *C. coffeicola*, *C. liberica* L., Skin and flesh of fruit