ABSTRAK

UJI *IN SILICO* MINYAK ATSIRI BIJI KELOR (*Moringa oleifera* L.) DAN EFEKTIFITASNYA DALAM MENGHAMBAT *Colletotrichum* sp., PENYAKIT ANTRAKNOSA CABAI MERAH BESAR(*Capsicum annuum* L.)

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Produktivitas cabai merah besar di Indonesia mengalami penurunan dan lebih rendah dari potensinya, dikarenakan proses budidaya yang terserang OPT salah satunya penyakit antraknosa (*Colletotrichum* sp.). Pestisida nabati adalah pestisida berbahan aktif yang bersumber dari tumbuhan, dengan pendekatan metode *in silico* namun untuk memvalidasi lebih lanjut memakai metode *in vitro* dan *in vivo*. Penelitian bertujuan untuk mengetahui senyawa metabolit sekunder yang berikatan dengan protein cutinase dan pengaruh konsentrasi minyak atsiri biji kelor (*Moringa oleifera* L.) terhadap cendawan *Colletotrichum* sp. Penelitian menggunakan eksploratif (*in silico*) dan Rancangan Acak Lengkap (*in vitro* dan *in vivo*) dengan 6 perlakuan dan diulang sebanyak 5 kali. Media yang digunakan pada *in vitro* terdiri dari media PDA dan bahan organik sesuai perlakuan. Perlakuan terdiri P1 = Kontrol negatif, P2 = Kontrol positif (mancozeb), P3 = Minyak atsiri biji kelor (750 ppm), P4 = Minyak atsiri biji kelor (1000 ppm), P5 = Minyak atisiri biji kelor (1250 ppm), dan P6 = Minyak atsiri biji kelor (1500 ppm). Pada *in vivo* perlakuan dikalikan 2. Pengamatan dilakukan pada umur 3. 5. Dan 7 hari setelah inkubasi. Hasil penelitian menunjukkan bahwa minyak atsiri biji kelor berpengaruh terhadap daya hambat, masa inkubasi, diameter lesi dan intensitas serangan. Minyak atsiri biji kelor yang paling baik dalam menghambat perkembangan *Colletotrichum* sp. yaitu konsentrasi 1250 ppm.

Kata kunci : biji kelor, cabai merah besar, *in silico*, *in vitro*, *in vivo*

ABSTRACT

In Silico Test Of *Moringa Oleifera L.* **Seed Essential Oil And Its Effectiveness In Inhibiting** *Colletotrichum* Sp., **Anthrachnose Disease Of Large Red Chili (***Capsicum Annuum* L.**)**

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The productivity of large red chili peppers in Indonesia has decreased and is lower than its potential, due to the cultivation process being attacked by OPT, one of which is anthracnose disease (Colletotrichum sp.). Botanical pesticides are pesticides with active ingredients sourced from plants, with an in silico method approach but for further validation using in vitro and in vivo methods. The study aims to determine the secondary metabolite compounds that bind to cutinase proteins and the effect of the concentration of Moringa oleifera L. seed essential oil on Colletotrichum sp. The study used exploratory (in silico) and Completely Randomized Design (in vitro and in vivo) with 6 treatments and 5 replications. The media used in in vitro consisted of PDA media and organic materials according to the treatment. The treatments consisted of P1 = Negative control, P2 = Positive control (mancozeb), P3 = Moringa seed essential oil (750 ppm), P4 = Moringa seed essential oil (1000 ppm), P5 = Moringa seed essential oil (1250 ppm), and P6 = Moringa seed essential oil (1500 ppm). In vivo, the treatment was multiplied by 2. Observations were made at the age of 3. 5. And 7 days after incubation. The results showed that Moringa seed essential oil had an effect on the inhibitory power, incubation period, lesion diameter and attack intensity. The best Moringa seed essential oil in inhibiting the development of Colletotrichum sp. was a concentration of 1250 ppm.

Keywords: moringa seed, big red chili, in silico, in vitro, in vivo