

ABSTRAK
EFIKASI ASAP CAIR TONGKOL JAGUNG TERHADAP PATOGEN
ANTRAKNOSA (*Colletotrichum* sp.) PADA BUAH CABAI MERAH
SECARA *IN VITRO* DAN *IN VIVO*

Oleh

Muhamad Fathin Muflih
215001051

Dosen Pembimbing :
Budy Rahmat
Yogi Nirwanto

Penyakit antraknosa yang disebabkan oleh *Colletotrichum* sp. merupakan salah satu masalah utama dalam budidaya cabai merah (*Capsicum annuum* L.) karena dapat menurunkan kualitas dan kuantitas hasil panen. Tujuan penelitian untuk mengetahui efektivitas asap cair tongkol jagung sebagai agen antifungi dalam menghambat perkembangan penyakit antraknosa pada cabai merah secara *in vitro* dan *in vivo*, serta untuk menentukan konsentrasi asap cair yang paling efektif dalam menekan perkembangan penyakit tersebut. Penelitian dilaksanakan pada bulan Maret sampai Juli 2025, metode Rancangan Acak Lengkap (RAL) melalui uji *in vitro* dan *in vivo*. Uji *in vitro* menggunakan konsentrasi 0,3%, 0,4%, 0,5%, dan 0,6%, menunjukkan bahwa asap cair tongkol jagung mampu menghambat pertumbuhan *Colletotrichum* sp. secara nyata, dengan hasil terbaik pada konsentrasi 0,6%. Selanjutnya, uji *in vivo* pada konsentrasi 15%, 20%, dan 25% menunjukkan bahwa konsentrasi 15% paling efektif dalam menekan intensitas serangan, memperpanjang masa inkubasi, serta memperkecil diameter lesi pada buah cabai merah. Hasil penelitian ini mengindikasikan bahwa asap cair tongkol jagung berpotensi sebagai pengendali nabati yang ramah lingkungan terhadap penyakit antraknosa pada cabai merah dalam penyimpanan. Asap cair tongkol jagung efektif menghambat pertumbuhan *Colletotrichum* sp., penyebab antraknosa pada cabai merah besar. Pengujian menunjukkan efektivitas terbaik pada konsentrasi 0,6% secara *in vitro* dan 15% secara *in vivo*.

Kata kunci: asap cair, cabai merah, *Colletotrichum* sp., tongkol jagung

ABSTRACT

**EFFICACY OF LIQUID SMOKE FROM CORN KERNELS AGAINST
ANTHRACNOSE PATHOGENS (*Colletotrichum* sp.) ON RED CHILLI
FRUITS IN VITRO AND IN VIVO**

By
Muhamad Fathin Muflih
215001051

Supervisors :
Budy Rahmat
Yogi Nirwanto

Anthracnose disease caused by *Colletotrichum* sp. is one of the main problems in red chili (*Capsicum annuum* L.) cultivation, as it can reduce both the quality and quantity of yields. This study aimed to determine the effectiveness of corn cob liquid smoke as an antifungal agent in inhibiting the development of anthracnose disease on red chili, both in vitro and in vivo, as well as to identify the most effective concentration of liquid smoke in suppressing disease development. The research was conducted from March to July 2025, using a Completely Randomized Design (CRD) method through in vitro and in vivo tests. The in vitro test, using concentrations of 0.3%, 0.4%, 0.5%, and 0.6%, showed that corn cob liquid smoke significantly inhibited the growth of *Colletotrichum* sp., with the best result observed at a concentration of 0.6%. Furthermore, the in vivo test, using concentrations of 15%, 20%, and 25%, revealed that a concentration of 15% was the most effective in reducing disease intensity, prolonging the incubation period, and decreasing lesion diameter on red chili fruits. The results of this study indicate that corn cob liquid smoke has potential as an environmentally friendly botanical control agent against anthracnose disease in stored red chili. Corn cob liquid smoke was effective in inhibiting the growth of *Colletotrichum* sp., the causal agent of anthracnose in large red chili, with the best effectiveness observed at concentrations of 0.6% in vitro and 15% in vivo.

Keywords: *Colletotrichum* sp., corn cob, liquid smoke, red chilli