

ABSTRACT

Farah Arhusy Nurbayani, 24020121130069, **The Effectiveness of Noni Leaf Extract (*Morinda citrifolia*) on *Cercospora capsici* the Cause of Curly Red Chili Leaf Spot Disease (*Capsicum annuum* L.) in Vitro.** Under the guidance of Susiana Purwantisari and Siti Nur Jannah.

Noni leaves (*M. citrifolia*) are widely known to contain effective antimicrobial compounds that inhibit the growth of pathogenic microbes, including pathogenic fungi such as *Cercospora capsici* which causes *Cercospora* Leaf Spot disease in *Capsicum annuum* L. This study aims to determine the characteristics of symptoms caused by *Cercospora capsici*, identify the antifungal compounds in noni leaf extract, and determine the ability of noni leaf extract to suppress the growth of *Cercospora capsici* in vitro. The research methods included sampling noni leaves and pathogenic fungi, isolating and identifying pathogenic fungi, creating a growth curve for pathogenic fungi, testing Koch's postulates for pathogenicity, extracting and screening the phytochemistry of noni leaf extract, and testing antifungal activity using the parameters of colony inhibition, conidia production, and conidia germination. This study was conducted using a completely randomized design (CRD) with one factor and analyzed statistically using a one-way ANOVA test at a 5% level and a Post Hoc Games-Howell follow-up test at a 5% significance level. The results of the Koch's postulate pathogenicity test showed symptoms after 4 days of applying the fungal suspension to the leaves of 45-day-old curly red chili plants. The results of the phytochemical screening test of noni leaf extract showed the presence of antifungal compounds in the form of phenols, flavonoids, alkaloids, terpenoids, and saponins. The results of the antifungal activity test with the parameters of colony inhibition, conidia production, and conidia germination showed consistent results with 5 categories of inhibition ability, namely “inactive” in the negative control, “weak” at a concentration of 20%, “moderate” in the positive control, ‘strong’ at a concentration of 40%, and “very strong” at concentrations of 60% to 100%.

Keywords: Antifungal, *Cercospora capsici*, Koch's Postulates, Noni leaves, Phytochemical Screening