ABSTRACT

Anthracnose, caused by the fungus *Colletotrichum* sp., is one of the most destructive diseases affecting chili plants. This study aimed to characterize the morphological characteristics of *Colletotrichum* sp. isolates obtained from different chili varieties and evaluate the effectiveness of butterfly pea flower and cogon grass extracts in suppressing the growth of the pathogen under *in vitro* conditions. The research was conducted at the Plant Pests and Diseases Laboratory, Agroecotechnology Study Program, Faculty of Agriculture, Malikussaleh University, from March to June 2026. Fungal isolates were obtained from anthracnose-infected fruits of bird's eye chili, large chili, and curly chili collected from cultivation fields and identified based on their morphological characteristics. The antifungal assay was arranged in a Completely Randomized Design (CRD) consisting of six treatments with three replications, resulting in a total of 18 experimental units. Six *Colletotrichum* sp. isolates were obtained, showing variation in colony color, growth pattern, and colony texture. The results demonstrated that both plant extracts reduced colony diameter, colony area, and spore density, while increasing fungal growth inhibition compared with the control. Butterfly pea flower extract reduced colony diameter to 1.77–3.51 cm, with a growth inhibition of 50.55% and control efficacy of 50.34%. Cogon grass extract reduced colony diameter to 1.54–4.68 cm, with a growth inhibition of 36.80% and control efficacy of 34.46%. These findings indicate that butterfly pea flower and cogon grass extracts have potential as botanical fungicides for suppressing the growth and sporulation of *Colletotrichum* sp. under *in vitro* conditions.

Keywords: anthracnose, antifungal activity, botanical fungicide, growth inhibition, plant extract.