

Effects of *Calotropis Procera* on Microbial Inhibition Before and After Rain

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ABSTRACT

Introduction: *Calotropis procera* generates a latex that is utilized in traditional medicine. Numerous benefits, including pain relief and antibacterial properties, are provided by *C. procera* latex. The antibacterial enzyme properties of *C. procera* are still useful in a variety of fields, including the pharmaceutical and biotechnology industries. *Calotropis procera* is a medicinal herb that has therapeutic uses. Leaf extracts from *C. procera* have been analyzed for differences in microbial activity, fiber measures, moisture content, and carbohydrates before and after rain. The current study was out to identify the fibers, moisture content, and carbohydrate contents in the *C. procera* leaf extract and evaluate its antibacterial qualities. The ethanolic extract of *C. procera* leaves showed the highest inhibition (18 ± 0.5 mm) against *Escherichia coli*, although it also inhibited *Klebsiella* (12 ± 0.3 mm) and *S. aureus* (5 ± 0.3 mm) prior to rain. After rain, *S. aureus* exhibited the greatest inhibition (20 ± 0.2 mm), followed by *Klebsiella* sp. (10 ± 0.4 mm) and *E. coli* (8 ± 0.3 mm).

Materials and Method: Carbohydrates can be measured through chemical titration such as Fehling's test, which calculates the concentration of reducing sugars by observing how they react with Fehling's solution (Pant *et al.*, 2017), While fiber and moisture content was measured by the method of Song *et al.*, 2018.

Disc diffusion method to measure antibiotic efficacy in order to assess microbial activity. Agar plates that have been infected with microorganisms are covered with sterile discs that have been impregnated with test substances. The zone of inhibition, or the clear area surrounding the disc is evaluated after incubation to show how well the drug works against the microbe by (Bauer *et al.*, 1966 ; Rizwan *et al.*, 2024).

Result: This study demonstrated that plants develop faster after rain when their rates of carbohydrates, fiber, and moisture content increase. It also found that there is a difference between the microbial activity before and after rain. *C. procera* displayed the largest zone of inhibition in *S. aureus* (20 mm) after rain (Table 1). Before rain moisture content of *C. tropis* 4.4 % , fiber content 52 % and carbohydrate 5.5 gm were obtained, While after rain moisture content 5.1 % , Ffiber content 58 % and carbohydrate 6.1 gm measured.

Table 1. Displayed Table Determined Zone of Inhibition of Micro Organisms Against *C. Procera* Before and After Rain.

S.NO.	Microorganism	Before Rain Zone of Inhibition	After Rain Zone of Inhibition
1	<i>E. coli</i>	18 ± 0.5	8 ± 0.3
2	<i>Klebsiella</i> sp.	12 ± 0.3	10 ± 0.4
3	<i>S. aureus</i>	5 ± 0.3	20 ± 0.2

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