



## Antibacterial and Analgesic Activity of the Petiole of *Borassus Flabellifer*

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### Abstract

Ayurveda is the ancient system of drug which is originated in India. These are the major home remedies in traditional system of medicines. The practices continue today because of its biomedical benefits as well as place in cultural beliefs in many parts of the world and has made a great contribution towards maintaining human health. The Palmyra tree is mostly found in the state of Tamil Nādu. All of its parts also can be used for medicinal properties. This tree belongs to Arecaceae family. The plants consist of glycosides, fats, carbohydrates, gums, albuminoids, volatile oil as it shows many other Pharmacological actions like anti diabetic, anti-oxidant, diuretic, wound healing properties. The investigation work performed has dealt with both analgesic and antibacterial study of plant *Borassus Flabellifer* generally known as palm Tree. From its petiole juice and its water extract it shows activity against *staphylococcus aureus* (gram+) and *escheria coli*(gram-).

### INTRODUCTION

Pain is an unpleasant sensation no doubt, but on the whole, it is usually beneficial to man (or animal). It is mainly a protective mechanism for the body, occurs whenever any tissues are being damaged, and it causes the individual to react to remove the pain stimulus. The microorganisms are becoming resistant to the present-day using drugs due to different reasons. As the science and technology developing, isolation of pure molecules/compounds was increased from crude drugs of medicinal plants and have been using as antibiotics, but as above said present day drugs became less susceptible to microorganisms [4]. Now, there is an immediate action have to take in the isolation of new anti-microbial compounds from unnoticed medicinal plants or known medicinal plants with use of technology. In this point of view, the present study was aimed to identify the antibacterial and analgesic activity of *Borassus Flabellifer*.



### MATERIAL AND METHODS

**Plant material-** The petiole of *B. flabellifer* L. (Arecaceae) were collected from various parts of Sambalpur district near Kainsir road during November to December. The selected parts of the plant were then dried in shade at temperature between 21 - 30°C for 15 to 30 days, after which these parts were chopped and ground. Finally, the water extract was carried out by crushing it. The extract was filtered and concentrated to dryness at room temperature to avoid the decomposition of natural metabolites. The yield was found to be approximately 5.18% w/w.

#### *Antimicrobial study*

The selected plants extracts were tested for their antibacterial activity on different pathogenic bacterial strains using one strain bacterium *Escheria coli*, *Staphylococcus aureus*. The media used for bacteria culture were Agar well diffusion method. For sensitivity of bacteria towards extract were evaluated

by following the paper disc method. Each bacterial culture was placed on bacterial colonies and incubated at 37 degree for 14 to 18 hours. The inhibition zones were measured and compared by balur and kirbey chart.



STAPHYLOCOCCUS AND E.COLI BACTERIA

### Analgesic activity

Swiss albino mice of either sex (18-22g weight) was used .3 groups of animals were taken. Gr1 is treated with standard drug diclofenac and gr 2and 3 were treated with extract at a dose of 50mg/kg. And the reading were recorded in seconds at time interval of half hour,1,2 hour.



ANALGESIC EFFECT

## Results and Discussion

The tested extracts showed different zones of inhibitions of different bacterial strains, it conforms that *B. flabellifer* have antibacterial activity property. Three extracts of selected plant showed more antibacterial activity at high concentrations and compared with the standard drug ciprofloxacin; the extracts showed the less inhibition of the bacterial growth. There were some evidences about the traditional uses about the *B. flabellifer* and now the present study supports its medicinal importance. In this point of view, we carried out the present work and successfully reporting the antibacterial activity of *B. flabellifer* at more than 10mg/100µl concentration.

Treatment	Dose (mg/kg)	Reaction time (in Sec)	Inhibition (%)
Control	---	1.17±0.12	---
Standard	10	7.65±0.27 <sup>c</sup>	84.70
BFEE 150	150	2.74±0.24 <sup>c</sup>	57.27
BFEE 300	300	3.75±0.24 <sup>c</sup>	68.80

## Conclusion

The present study provides the evidence for its traditional medicinal usage and its antimicrobial and analgesic activity promote the research on phytochemical analysis and isolation of lead molecules present in it.

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