

ANTIFUNGAL AND SCABICIDAL PROPERTIES OF CISSAMPELOS OWARIENSIS (ROOT)

c

Abstract

Cissampelo Owariensis belong to the family of *menispermaceae* is climber growing in Ivory Coast, Angola, Nigeria including Cross River. The n- hexane extract of the root was subjected to phytochemical screening to ascertain steroids and terpenes as good candidates for antifungal activities. The ethanolic extract was observed to contain indole alkaloid, which showed a strong scabicial activities against scabiesmites.

Introduction

Cissampelo owariensis, known as “Kilo-mpape” among the Cross Riverans, belong to the family of *menispermaceae* (Dalziel, 1987). It is a climber commonly found in the whole of West Africa, including Ivory Coast, (Cote d’Ivoire), Angola and Nigeria. They are usually diocese twining vines of tumerous flower with floral part in whorts of three. Fruits are one sided drupes with taxonomically useful endocarp. Similarly, the seeds contain useful toxanomical characteristics related to embryo size, shape and endosperm. It has twining, spindly hairy leaves and bear small flower, with green colour. The fruits are useful at maturity.

The plant is known among the traditional healers for its medical efficacy. The powdered root when blended with pap or dispersed in tea and drunk to treat sweet breast in nursing mothers and stomach trouble with special adaptation for babies.

It is the aim of this study to verify scientifically the medicinal importance of this plant as an antifungal and antiscabies agent. This study has involved plant specimen collection, extraction and screening for bioactive component from plant, traditionally used for medicinal purposes.

Experimental

Materials and Method

The plant material (roots) were sourced from Cross River State through the assistance of traditional healer and local dealer. The material cost N2.00 per gram locally (Abuja).

The plant was authenticated by Prof. John A. Akinniyi of Department of Chemistry, University of Abuja. The samples were sun dried, pounded to powder and stored in clean sterile bottles.

Extraction

100cm³ of n-hexane was added to 30g of the powdered roots in conical flask. The mixture was agitated at room temperature for 24 hours and filtered with No.1 filter paper. The filtrate (extract) was concentrated to 10 cm³ in water bath. The extract weighing 2.5g was stored in a refrigerator. The procedure was repeated with 95% ethanol. The ethanol extract was light brown in colour while n-hexane was light yellow. The extracts were used for antifungal and scabicial properties of the plant.

Phytochemical Test

Table I: N-Hexane Extract Test for Ternenes and Steroids

Test	Observation	Inference
2ml of extract was mixed 1ml of acetic anhydride followed by the addition of 1ml of con H ₂ SO ₄ .	Formation of a reddish violet	Terpenes suspected
1 ml of extract was mixed with 2ml of con H ₂ SO ₄ .	A reddish brown colour observed	Steroid and terpenes present

Table II: Alkhaloid Test - Ethanolic Extract

Test	Observation	Inference
1m of extract + 2ml of Dragendoff reagent.	Reddish brown pp	Alkaloid suspected
1ml of extract + wager reagent	A reddish brown colour observed	Alkaloid present

Specific Test for Alkaloid

1cm¹ of concentrated sulphuric acid and crystal of potassium dichlorate were added to 2cm¹ of acidic extract. A violet colour observed indicated the presence of indole Alkaloids.

Antifungal Test

Fungi, Test extracts Agar Plate Were Used (Potato Dextrose Agar)

The method used in this study was central point inoculation method (Sampson, 1987). Inoculating needles were sterilized and wetted by dipping the point while hot, unto sterile agar media. Fungi spores were then picked up from the old culture with the aid of these needles which were held in an upward position.

The spores were transferred into freshly prepared potato dextrose Agar followed by adding a known concentration of test extract. The plate was incubated at room temperature for 4 days. Methanol was used as control.

Table III: Inhibition of Fungi Growth by the N-Hexane Extract

Fungi	50mg/ml	30mg/ml	20mg/ml	Methanol
Candida albican	-	-	-	+
Rhizoctonia	-	-	-	+

Scabicial Activities

After thorough clearing of the face, (Approximately 20mg) of ethanolic extract applied to scabietic subject for 5 consecutive days, once daily.

This was compared with the same concentration of benzyl benzoate as acting as control.

Result and Discussion

Tables 1 and 2 show the result of the phytochemical analysis. The phytochemical test confirmed the presence of Indole alkaloid in ethanolic extract and sterol in n-hexane extract of the plant.

The result of antifungal screening, fable 3 shows that n-hexane extract has antifungal activity. The antifungal activity is due to the presence of sterol and terpene (Okogun, 1990). The control shows that methanol has no antifungal effect.

Scabicial test shows that preparation of ethanolic extract applied to scabietic subjects for 5 consecutive days gave 100% cure while the same concentration of benzyl benzoate for the same time gave 87.5% cure. It is possible that indole alkaloid present is responsible for the total healing of the scabies.

Conclusion

The inhibitory properties of the plant extracts promises their potential application in the treatment of the above ailment. Based on fact, it is difficult for organism to develop resistance toward the natural component of the medicinal plant as these are more complex in the active component.

References

- Dailziel, J.M. (1987). *The Useful Plant of West Tropical Africa. Crown Agent for Oversea Government and Administration.* London; Whitefriars Press Limited.
- Isaac, O. O.; and Chinwe, J. A. (2001). The Phytochemical Analysis and Antibacterial Screening of Extract of Tetracarpidium Conophonum. *Journal of Chemical Society of Nigeria*, 26 53-54.
- Oluwatoyi, A. B.; Kayode, E. A.; and Joseph, I. O. (1996). Antibacterial and Antifungal Compound from Kigeha Pinnata. *Planta Medica*: 36 352-353.
- Aboyomi, S. (1994). *The State of Medicinal Plant Research in Nigeria*, Faculty of Pharmacy, University of Ife. Ile-Ife: Nigeria, P.162.
- Hargbone, J. B. (1998). *Phylochemical Method* {3 ed). London: Hall & Chapman.
- Ejeikwu, E.O.; and Madaki, S. (2002). Leaf Surface fungi of Teak (*Tectona grandis*) and Calathea (*Ornata Koerni*) Employed for Wrapping and Packaging Foods and Foodstuff in Nigeria. *Zuma Journal of Pure and Applied Science*, 4(2), P. 95-98.