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ANTIMICROBIAL ACTIVITY OF NEEM LEAF (*AZADIRACHTA INDICA*)

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ABSTRACT

Neem is a medicinal tree which every part are useful. In present study we studied about neem leaf antibacterial activity. In this study we studied antibacterial activity against yeast and mould, ecoli, pseudomonas species, salmonella species, staphylococcus species. And this shows that aqueous neem leaf extract shows maximum antibacterial activity against ecoli and methanolic neem leaf extract also shows maximum antibacterial activity against ecoli.

KEYWORDS: Staphylococcus, Salmonella, E.coli., Pseudomonas, antibacterial.

General description of Neem

The first selected tree for study is neem (*azadirachta indica)* it's belongs to family meliaceae it's commonly known as Indian neem. All parts of this meditional tree are very useful. Neem contains many bioactive compound but the most important compound is azadirachtin.[1] Neem is bitter medicinal herb which is used in inflammation, clear toxin and it's has property of antibacterial and anti parasitic. *azadirachta indica* belongs to family meliaceae. Its contain azadiractin B, nimbolinin A, limbolinin B etc. Its show antibacterial and antioxidant activity and it is also used as insecticide.[2] Neem oil causes diarrhea, vomiting, blood disorder, coma, brain disorder and death of children after taking huge amount. Neem bark is also very dangerous. Its causes miscarriage after taking high amount of this. Neem has power to low blood suger and harm sperm which causes infertility.[3]

Method[4]

- **Preparation of Hot Water Extract**

Hot water extract of the drug sample was prepared by dissolving 75g of powdered drug in 200ml of distil water for 4 hours. It was than further extracted using the Soxhlet apparatus for further 2 hours. The resulting infusion was filtered using Whatman Filter paper no.1. The filtrate was then subjected to evaporation till dryness. The dried powder of extract was scratched off the dish and dissolved in small amount of distil water. This solution was used as antimicrobial agent in the test.

- **Working Procedure**

Preparation of Inoculum: An inoculum of Salmonella, Staphylococcus, Pseudomonas, E.Coli, and Total Coliform was prepared from contaminated water by culturing them in Nutrient broth, Lactose broth etc. 10ml of inoculums was diluted with 10ml of sterilized distil water just before inoculation. Similarly, mixed fungal culture was used to prepare fungal inoculums.

- **Inoculation**

1ml of diluted inoculums was poured in a sterilized Petridis. Then about 15ml of autoclaved liquefied media was poured and mixed well. Then the plate was allowed to solidify in refrigerator for about 2 hours. After that wells were bored on the solidified agar plates with the help of sterile cork borer. 50µl of drug extract was poured into the well and disk of known antibiotics (Amoxyclave, Chloroabphenicol) were kept on the agar surface. Then all the plates were allowed to stand at room temperature for 1 hours so that the drug diffuse in the agar. Than all the plates were incubated at 37^0C for 24 hours. In case of fungal culture, Clotrimazole was used as known antibiotics. The fungal culture plates were incubated at 25^0C for 72 hours. After completion of incubation period the plates were observed for antimicrobial activity and the diameter of zone of inhibition of growth of microorganisms was measured.

RESULT

Antibacterial study of neem leaf shows that neem leaf shows maxiinst mum inhibition zone against e. coli amd minimum against salmonella. And zone inbition absent against yeast and mould and TBC.

Table No 1:

S.no.	Name of anti biotics	Name of pathogen	Zone of inhibition (mm)		
			Antibiotics	Methanolic extract	Aqueous Extract
1	Chlotrimyzole	Yeast and mould	Zone absent	Zone absent	Zone absent
2	Amoxicillin	E.coli	Zone absent	23	27
3	Streptomycin	T.B.C	Zone absent	Zone absent	Zone absent
4	Chloramphenical	Salmonella	34	10	11
5	Azithromycin	Staphyllococcus	30	30	13
6	Cabencilline	Pseudomonas	34	16	11

RN1e.coli RN1TBC RN1salmonella RN1staphyllococcus RN1pseudomonas RN1 y and m: Rn1 shows neem leaf and y and m shows yeast and mould.

CONCLUSION

Present study shows that neem leaf is good antibacterial which work good against staphylococcus, e. coli, pseudomonas so we can use this in future for preparing antibacterial medicine.

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