

ANTIBACTERIAL ACITIVITY OF SOME FRUIT EXTRACT AGAINST *Xanthomonas tagetes*

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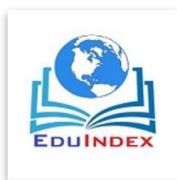
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ABSTRACT: The bacterial leaf spot was caused by pathogen *Xanthomonas tagetes* Rangaswami and Sanne Gowda It is one of the disease of *Tagetes erecta* L. The pathogen mainly attacks on leaves of the plant and yellow brownish spots appear on leaf. In present investigation the antibacterial activity of some fruit extracts were tested against this pathogen. Fruits also have different antimicrobial activities. Five Fruit crude extract namely *Acacia nilotica* L., *Capsicum annum* L., *Coriandrum sativum* L. *Foeniculum vulgare* Mill. and *Trachysperm amni*, (L) Spargue were used for the experiment. *Coriandrum sativum* L. has given excellent result during experiments. The experiments has been done by using cup-plate method to examine the antibacterial activity. This study will be helpful for effective biological control of bacterial leaf spot disease of *Tagetes erecta* L.

Keywords : Antibacterial activity, fruit extract, *Xanthomonas tagetes* etc.

INTRODUCTION

Tagetes erecta is one of the most important ornamental plants in all over India. It is most commercial flowering plants. Plants has antioxidant properties which is useful for human. Now a days, it is found that plants suffering from many disease the bacterial leaf spot is the one of the disease caused by *Xanthomonas tagetes* Rangaswami and Sanne Gowda which is mostly affect on leaf, flower and buds. The various biological and chemical methods are used for the management of these diseases. The fruit extracts has most of antioxidant properties and antimicrobial properties (Islary *et al* 2018). In the present experiments different fruit extract used for antibacterial activity. The fruit extract of plants namely *Acacia nilotica* L., *Capsicum annum* L., *Coriandrum sativum*, *Foeniculum vulgare* Mill, *Trachysperm amni*, (L) Spargue. Out of these plants *Coriandrum sativum* L. has given promising results.



Materials and methods:

Collection and isolation of disease samples:

The disease sample leaves of *Tagetes erecta* L. were collected from different areas of Aurangabad district Maharashtra state. The collected diseased plant part samples were kept separately in pre-sterilised polythene bags and brought to the laboratory for identification. The bacterial pathogen were isolated on nutrient agar medium. Pure culture slants were prepared. These slants were used for the further experiments.

Preparation of fruit extracts:

The fruits of the plants were collected from different areas. fruits were thoroughly washed under tap water and then rinsed with sterile distilled water. 20gms of fruits was weigh and crushed it in mixture and grinder by adding 50 ml sterile distilled water. Then it was centrifused to ultracentrifuge for 20 min at -4°c at the 11000 rpm and extract was prepared.

Cup plate method: It is a method used for studying antibacterial activity. For the experiments bacterial suspension was prepared by adding 10 ml sterile distilled water to 2 days old NA slope culture. Five to six drops of bacterial cell suspension were poured in sterilized petriplates (9 cm diameter) on to which 20 ml of Nutrient agar was already pour. Thoroughly mixed it and allowed to solidify.

In the centre of the medium , a cup cavity of 8mm diameter was made with help of sterilized no. 4 cork borer. This cup was filled with 0.1 ml of the fruit extract by using micropipette. The petri dishes were incubated for 24hrs at $25\pm 2^{\circ}\text{c}$. And the observations were recorded as diameter of inhibitory zone measured in 3-4 angles and mean was considered for accuracy. Cup cavity filled with sterile distilled water was used as control in experiments.

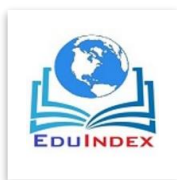
RESULTS AND DISCUSSION

As per the observations on cultured nutrient agar plates, antibacterial activity of fruit extract evaluated against *Xanthomonas tagetes* Rangaswami and Sanne Gowda The highest zone of inhibition observed in *Coriandrum sativum* L. (Mean =17 mm) as compare to other plant fruit extracts.

Table 1. Antibacterial activity of fruit extract. Showing Zone of inhibition.(in mm)

Sr no	Name of plants	Exp A	Exp B	Exp C	Exp D	Mean
1	<i>Acacia nilotica</i> L.	-	-	-	-	-
2	<i>Capsicum annum</i> L.	17	12	11	10	12.5
3	<i>Coriandrum sativum</i> L.	18	16	16	18	17
4	<i>Foeniculum vulgare</i> Mill.	-	-	-	-	
5	<i>Trachysperm amni</i> ,(L) Spargue	14	11	10	10	11.25

Antibacterial activity of fruit extract of bacterial pathogens examined by Koffi -Nevryet *al* Vats and Tripathi tested antibacterial activity of *Coriandrumsativum*L.against gram negative urinary bacteria . Ali *et al* ere studied by antibacterial acitivity of *Coriandrumsativum* by using methanolic extract.Bacon *et al* were also recorded antibacterial acitivity of *Capsicum annum var. annum* against foodborne pathogen. Manzoor *et al* also observed antibacterial activity of fruit extract against *E.coli* The antifungal activity of fruit extract also studied by Pawar.



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