

RESEARCH NOTE

## Sensitivity of garlic on isolated pathogen of *Channa punctatus*

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**ABSTRACT :** Garlic was selected for potential sensitivity of pathogens. In evaluating sensitivity, both aqueous and organic solvents were used and tested against five strains viz., *Aeromonas hydrophilla*, *Escheichia coli*, *Salmonella typhi*, *Bacillus subtilis* and *Staphylococcus aureus*. Out of the five organisms tested, *Aeromonas hydrophilla* was found to be susceptible to all the ethyl acetate extract to varying extent. The petroleum ether extract of garlic showed the highest zone of inhibition (12mm) against *E. coli* where as ethyl acetate extract was effective against *S. typhi* (18 mm). Water extract of garlic was sensitive against *Bacillus subtilis* (6 mm), Ethyl acetate extract of garlic was sensitive against *Staphylococcus aureus*. Hence, selected medicinal plant, garlic showed sensitivity against certain pathogenic micro- organisms the garlic extract prepared in various solvents showed varying inhibitory sensitivity and thus, have therapeutic value.

**Key words :** Sensitivity, Garlic, *Channa punctatus*

**How to cite this article -** Harkal, A.B., Padewar, S.K., Jagtap, A.R. and Mali, R.P. (2011). Sensitivity of garlic on isolated pathogen of *Channa punctatus*. *Asian J. Animal Sci.*, 6(2): 208-209.

**Article chronicle - Received :** 10.4.2011; **Accepted :** 16.8.2011

Garlic's current principal medicinal uses are to prevent and treat cardiovascular diseases by lowering blood pressure and cholesterol, as an antimicrobial and as a preventive agent for cancer. Garlic contains at least 33 sulphur compounds, several enzymes, 17 amino acids and minerals such as selenium (Newall *et al.*, 1996). It contains higher concentration of sulphur compounds than any other *Allium* species. The sulphur compounds are responsible for both garlicks pungents odour and many of its medicinal effects. Garlic is thought to have diaphoretic, expectorant, antispasmodic, antiseptic, bacteriostatic, antiviral, antihelminthic, and hypotensive effects, It is commonly used to treat chronic bronchitis, recurrent upper respiratory tract infections and influenza .The sensitivity of garlic extract is the primary step in the discovery of new drugs. Several study works have been done on antibacterial screening of selected medicinal herbs (Muniruzzaman and Chowdhury, 2004; Direkbusarakom *et al.*, 1992; Harkal *et al.*, 2008; Rajendra, 1990; Rath, 1990)

The pathogens were isolated from freshwater fish, *Channa punctatus* collected from Godavari river Nanded in 2011. The different types of garlic extracts were prepared in evaluating sensitivity both aqueous and organic solvents which were used and tested against

isolated five strains, *Aeromonas hydrophilla*, *Escheichia coli*, *Salmonella typhi*, *Bacillus subtilis* and *Staphylococcus aureus* . The garlic cloves were separated and dried at room temperature for 7 days. Then cloves were powdered in mortar and pestle and then they were sealed in air tight polythene bags. Then different extracts were prepared such as water extract, alcohol extract, petroleum ether, ethyl acetate extract, in which 1g of powder in 25 ml was prepared for sensitivity and was sealed with paraffin wax paper until been used.

The cup-plate agar diffusion method was adopted according to Kavanagh (1972) to assess the antibacterial activity of the prepared extracts. Nutrient agar plates were prepared with base agar, a loop full of bacterial culture was inoculated in 15 ml of soft agar and this was immediately poured uniformly on base agar for prepared seed agar. A well in the centre of nutrient agar was filled with these herbs extracts against respective bacterial seed agar. Control was used without leaf powder. The plates were incubated for 24 to 48 hours at 37 °C and results were noted in the form of zone of inhibition.

Out of the five organisms tested, *Salmonella typhi* was found to be susceptible to ethyl acetate varying extent and the ethyl acetate extract of garlic showed the highest zone of inhibition (18 mm) against the *Salmonella typhi*