

Antimicrobial activity of selected plant extracts against plant pathogens

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The frequently changing of ecological condition demands for developing ecofriendly herbal antimicrobial agents. The present study was under taken to evaluate the antimicrobial activity of ethanolic leaf extract of Neem leaf and flower extracts of Nochi against phytopathogens, *Xanthomonas* and *Fusarium*. All plant extracts showed considerable antibacterial activity against *Xanthomonas* and antifungal activity against *Fusarium*. The results showed that the leaf extract of Neem had high toxicity against tested pathogenic organisms, the antimicrobial activity of other extract increases with increasing concentration of extracts.

Key words: Antimicrobial activity, Neem, Nochi, *Xanthomonas* and *Fusarium*

INTRODUCTION

Citrus canker, caused by *Xanthomonas oxonopodis* pv. Citri, is a serious disease reducing the external quality of citrus fruits. It affects all types of citrus and severely infection on lime. Typical symptom on leaves is a raised necrotic lesions surrounding with yellow halo but on fruit and stem halo seldom occurs. Wilt of cotton caused by *Fusarium oxysporum*, the plants are affected during all stages of plant growth. Yellowing and browning of the cotyledons, a complete defoliation leaving the stem alone standing in the field. Young plants may turn them in black, the decolouration may be partial. Pathogenic microbial disease of plants cause malfunctions *ie.* reduce the yield or survival capacity resulting in death. The plant protection chemicals used for controlling the plant diseases posses a serious threat to our environment.

The problems encountered with the use of chemical microbialcides include environmental degradation, resistance problem in target organism, etc. Their frequent use change the ecological conditions which demands the need for developing ecofriendly herbal antimicrobial agents. In such a situation, natural plant products, which proved to be a correct choice, replace some of the chemicals in order to control plant diseases. Many focus on determining the antimicrobial activity of plant extracts found in folk medicine, essential oils or isolated compounds such as alkaloids, flavonoids, sesquiterpene, lactones, diterpenes, triterpenes or naphthoquinones, among others. Some of these compounds were isolated or obtained by bio-guided isolation after previously detecting antimicrobial

activity on the parts of the plant.

In recent year much interest has been developed in the antimicrobial effects of medicinal plants for plant disease control. Some plant extracts were reported as effective inhibitors of phytopathogenic bacterial growth (1998, Leksomboon *et al.*, 2000, Garelin *et al.*, 1978 and Grainage and Alvareg, 1987).

Many plants have been reported to contain antibacterial and antifungal substances (Grainage *et al.*, 1986 and Ambasta,1992). The present study has been emphasized with the objective of testing antimicrobial activity of Neem and Nochi plants against phytopathogens, *Xanthomonas* and *Fusarium*.

MATERIALS AND METHODS

Antimicrobial activity of leaf extract of Neem and leaf, flower extracts of Nochi plants were studied.

Plant materials collection :

Fresh healthy leaf of Neem and leaf, floral parts of Nochi were collected.

Extract Preparation :

10 grams of plant materials were washed in running water, surface sterilized with 0.1% mercuric chloride solution and finally washed in distilled water. The plant materials was crushed using mortar and pestle by adding 50% ethanol. The crushed extract was allowed to stand overnight for extraction. The extracts were filtered and made up to different concentrations (50% and 100%).

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