ANTIFUNGAL EFFICACY EVALUATION OF LEAF EXTRACT OF AZADIRACHTA INDICA JUSS. AGAINST TAPHRINA MACULANS CAUSING LEAF BLOTCH OF TURMERIC.

Manisha K. Gurme Department Of Botany, Dayanand Science College, Latur. 413512

ABSTRACT An attempt has to be made to know the antifungal efficacy evaluation of leaf extract of Azadirachta indica against T.maculans in Vitro using different concentrations by poisoned food technique. Plant extracts are having potential to control pathogens due to presence of certain alkaloids, tannins, quinines, phenolic compounds and phytoalexins (Datar, 1999). Variable concentrations of Azadirachta indica leaf extract show variable effect on the linear growth of T. maculans. As the concentration of leaf extract of Azadirachta indica increases, the linear growth of T. maculans decreases.

INTRODUCTION: Turmeric (Curcuma longa L.), commonly known as ‘Indian saffron’ is an important commercial spice crop belonging to family Zingiberaceae. It is a rhizomatous plant and distributed throughout tropical and subtropical regions of the world. It is used in diversified forms as a condiment, flavouring and colouring agent and as a principal ingredient in Indian culinary as curry powder. It is commonly grown in the states of Andhra Pradesh, Tamilnadu, Kerala, Karnataka, Bihar, Orissa and Maharashtra. The different varieties of turmeric cultivated in India are Erode, Tekurpeta, Rajapuri, Salem, Lokhandi, Waigaon, Chinamani, Duggirala, Allepy, Armour etc. (Indiresh et al., 1990). There is variation in morphology, rhizome and quality in different varieties of turmeric (Philip, 1978).

Apart from its uses as a spice, it is used in a traditional medicine in Asian countries such as India, Bangladesh and Pakistan. It is having antitumor, antiinflammatory, anti- ulcer, anti-diabetic and antioxidant properties (Hamid et al., 2014). The turmeric rhizome contains tumeric, Zingiberene and oleoresin. The yellow-orange colour of turmeric is due to presence of Curcumin which is a part of Oleoresin and it is having anti-oxidant properties (Ghosh et al., 1982).

Such a commercially valuable crop gets affected by Taphrina maculans fungi causing leaf blotch of turmeric reducing its productivity and quality.

The leaf extract of Azadirachta indica is having antifungal effect due to presence of certain phytochemicals. Taking in consideration the medicinal importance of Azadirachta indica leaf extract, the present work has been planned to control the fungus.

MATERIALS AND METHODS: The effect of Azadirachta indica Juss. on Taphrina maculans was studied by using poisoned food technique (Biswas et al., 1995) in Vitro. The fresh and healthy leaves free from pathogen of Azadirachta indica were collected from nearby fields of Latur region of Marathwada and washed with tap water repeatedly 2-3 times. Then the leaves are dried in shed and crushed with the help of molar and pestle by using 10% alcohol. The leaf extract was filtered by using muslin cloth. The leaf extract was added in 100ml of 10% alcohol. The required concentration of leaf extract was obtained by adding 1.0, 1.5, 2.0, 2.5 and 3.0 in 100ml of warm media. The media was poured in sterilized petriplates. Then these plates were inoculated by 5mm disc of Taphrina maculans in the centre of Czapek-dox-agar medium and the linear growth of fungus was measured in mm (Biswas et al., 1995).

RESULTS AND DISCUSSIONS: The antifungal efficacy of Azadirachta indica Juss. on linear growth of Taphrina maculans was observed. Studies showed that with the increasing concentration of Azadirachta indica Juss. leaf extract, there is decrease in linear growth of Taphrina maculans. In control plate, the growth was 75mm on 8th day of incubation. The linear growth of fungus was 42.01mm at 1.0 concentration, 39.00mm at 1.5%, 30.00mm at 2.0%, 0.09 mm at 2.5% and at 3.00% concentration the linear growth of fungus was inhibited completely. This observation also concluded that the leaf extract of Azadirachta indica is a alternative to chemical fungicide and it controls disease severity caused by the fungus T. maculans.

REFERENCES