Research Paper :

Effect of plant extracts on the growth and spore germination of *Alternaria porri*

M. ABDUL KAREEM, K.V.M. KRISHNA MURTHY AND HASANSAB A. NADAF

International Journal of Plant Protection, Vol. 4 No. 2 (October, 2011) : 363-365

SUMMARY

The results revealed that all the plant extracts *viz., Azadirachta indica* (Neem), *Clerodendron inerme* (Clerodendron) and *Pongamia pinnata* (Pongamia) were significantly effective in inhibiting the growth and spore germination of *A. porri* except the extract of *Sitaphal*. Irrespective of the concentrations, neem leaf extract was observed to be the most effective botanical recording the highest reduction of growth (56 %). The next best treatments were the extract of pongamia (54 %) and clerodendron (51.10%). Sitaphal was least effective in reducing the fungal growth (12 %). The plant extracts (leaf) irrespective of the species were found to be most effective at 15 per cent concentration. Maximum reduction of mycelial growth (74 %) was observed at 15 per cent concentration which was significantly superior to 41 per cent reduction in the mycelial growth at 5 per cent concentration and 53.00 % reduction in the mycelial growth at 10 per cent concentration. Similarly, all the plant extracts were significantly effective in inhibiting the spore germination of *A. porri*. Irrespective of the concentrations, neem leaf extract proved to be the most effective botanical and recorded the highest spore inhibition (56 %) followed by the extracts of pongamia (67.70%) and clerodendron (58.40%). Sitaphal was least effective in inhibiting the spore germination (14.40%). The plants extracts irrespective of the species were found to be most effective at 15 per cent concentration. Maximum inhibition of spore germination (92.30%) was observed at 15 per cent concentration which was significantly superior over 5 per cent (48.60%) and 10 per cent (71.60%).

See end of the article for authors' affiliations

Correspondence to :
M. ABDUL KAREEM
Department of Plant Pathology, Agricultural College, BAPATLA (KARNATAKA) INDIA
Email : makuasd@gmail.com

Kareem, M. Abdul, Murthy, K.V.M. Krishna and Nadaf, Hasansab A. (2011). Effect of plant extracts on the growth and spore germination of *Alternaria porri*. *Internat. J. Plant Protec.*, **4**(2): 363-365.

Key words : Plant extract, Spore germination, *Alternaria porri*

Onion (*Allium cepa* L.) is an important bulb crop of India belonging to the family Alliaceae. In India, the onion crop occupies an area of 0.4546 million hectares with a total production of 6034.25 million tonnes (Anonymous, 2005-06). Several factors contribute to the low productivity of onion. Diseases like purple blotch, downy mildew, *Stemphylium* blight, basal rot and storage rot are known to be more significant in reducing the production of the crop. Of these, purple blotch is the most destructive disease, prevalent in almost all onion growing areas of the world causing heavy losses under field conditions. In Guntur district the disease has become prevalent causing heavy losses to onion farmers in recent times.

Received : *June, 2011*
Revised : *July, 2011*
Accepted : *September, 2011*

MATERIALS AND METHODS

Plant extracts with antimicrobial property are relatively cheaper, safer and non-hazardous and can be used successfully against the plant pathogenic fungi. The present investigation was aimed to study the antifungal effects of certain plant extracts on the *Alternaria porri*. The following plant extracts were selected for the study:

Preparation of plant extract:

Fresh plant materials were collected and washed first in tap water and then in distilled water. One hundred gram of fresh sample was chopped and then crushed in a surface sterilized pestle and mortar by adding 100 ml of sterile distilled water (1:1 w/v). The extracts were filtered through two layers of muslin cloth and then through Whatman No. 2 filter paper. Finally filtrate thus obtained was used as stock solution. The stock solution of each plant species was diluted with required amount of