

Research Paper :

Location and transmission of *Macrophomina phaseolina* and *Alternaria alternata* in okra



B. THIPPESWAMY, H.V. SOWMYA, RAMALINGAPPA AND M. KRISHNAPPA

International Journal of Plant Protection, Vol. 4 No. 1 (April, 2011) : 23-26

SUMMARY

A total of 115 okra seed samples collected from different sources were subjected to Standard Blotter Method (SBM) for isolation. Five samples showing higher infestation of seed borne fungi in SBM were selected for studying the location and transmission of the pathogen. *Macrophomina phaseolina* recorded 2-5% in seed coat, 0-5% in fringe layer, 0-4% in cotyledons, 0-4% in endosperm and 0-3% in embryonic axis. *Alternaria alternata* was 0-4% in seed coat, 0-3% in fringe layer, 0-2% in the cotyledons, 0-2% in endosperm and 0-2% in embryonic axis in *Kharif* (monsoon). In *Rabi* (post-monsoon), *M. phaseolina* was 0-4% in seed coat, 0-5% in fringe layer, 0-10% in cotyledons, 0-2% in endosperm and 0-1% in embryonic axis while *A. alternata* 2-3% in the seed coat, 0-3% in fringe layer, 1-3% in cotyledons, 0-2% in endosperm and 0-1% in embryonic axis. The seeds harvested during *Kharif* and *Rabi* season favoured the more number of pathogens in the seed coat than in the other components. The transmission of *M. phaseolina* and *A. alternata* was 12.2% in *Kharif*. In *Rabi*, the transmission was 18.2% in all the five seed samples. The present study revealed that the disease transmission was more during *Rabi* than *Kharif* season.

See end of the article for authors' affiliations

Correspondence to :
B. THIPPESWAMY
Department of P.G.
Studies and Research in
Microbiology,
Kuvempu University,
SHIMOGA
(KARNATAKA)
INDIA
Email:thippeswamyb205
@gmail.com

Thippeswamy, B., Sowmya, H.V., Ramalingappa and Krishnappa, M. (2011). Location and transmission of *Macrophomina phaseolina*, *Alternaria alternata* in okra. *Internat. J. Pl. Protec.*, 4(1): 23-26.

Key words :

Okra, Location,
Transmission,
Macrophomina
phaseolina,
Alternaria
alternata

Okra [*Abelmoschus esculentus* (L.) Moench.] is one of the important summer, rainy season vegetable crop. It is used in soups, stews and creole dishes together with many other vegetables. In Karnataka, the okra is cultivated in 7181 hectares with an annual production of 58057 tones (Anonymous, 2007). This crop is affected by number of fungal diseases. Important pathogenic fungi are *M. phaseolina*, *A. alternata*, *Fusarium oxysporum* and *F. solani*. These pathogen cause brown lesion spots, leaf spots, blight, wilt, rot, die-back and discoloration of seeds. Present study was undertaken on the location and transmission of *M. phaseolina* and *A. alternata* in okra seeds during *Kharif* and *Rabi* seasons in Karnataka.

MATERIALS AND METHODS

A field survey was carried out during 2007-2008 and a total 34 seed samples of okra in *Kharif* and 28 in *Rabi* were collected during 2007. During 2008, 29 seed samples in *Kharif*

and 24 in *Rabi* season were collected. The samples were collected from farmers, agro-agencies and the seeds were extracted from the fruits grown at different agro-climatic regions of Karnataka. The collected seed samples were dried in sunlight to bring down the safe seed moisture and were subjected to Standard blotter method (SBM) for isolation of fungi.

Standard blotter method (ISTA, 1976):

Three blotter discs were dipped in sterilized water and placed in 9 cm diameter Petri plates. Twenty five seeds were plated at equidistantly on moist blotter discs and were incubated at $23 \pm 2^{\circ}\text{C}$ under alternating cycles of NUV light and darkness. The seeds were examined on 7th day using stereobinocular microscope and the seed mycoflora were recorded.

Five samples showing higher incidence of *M. phaseolina* and *A. alternata* in standard blotter method were selected for studying the location and transmission studies.

Received :
August, 2010
Accepted :
October, 2010