

Research Paper :

## Effect of extracts of various plant parts on seed mycoflora and seed germination of chilli

S.M. TELANG

Accepted : February, 2010

### ABSTRACT

Total eighteen fungi were found to be associated with the seeds of Chilli varieties during the present study. The seeds of Chilli var. Local showed maximum seed mycoflora with maximum per cent incidence. *Aspergillus flavus*, *Aspergillus niger*, *Rhizopus nigricans*, *Alternaria tenuis*, *Rhizopus stolonifer* and *Curvularia lunata* were the common and dominant seed borne fungi of Brinjal varieties. The common and dominant seed borne fungi were found to be inhibitory for seed germination and caused great loss in seedling vigor, seed and seedling rots of the chilli var. Local. The root stems, leaf and bark extracts of some common and easily available plants were screened for the Bio-control of the seed mycoflora of the Chilli. Root, stem and leaf extracts of all the test plants were found to be inhibitory in more or less degree for the incidence of seed mycoflora while with a few exceptions, they were found to be stimulatory for seed germination

Correspondence to :

**S.M. TELANG**

Department of Botany,  
Yeshwant Mahavidyala,  
NANDED (M.S.) INDIA

**Key words :** *Capsicum annum*, Seed mycoflora, Seed germination, Seedling vigor, Seedling emergence, Leaf extract

**S**olanaceae family includes a large number of annual or perennial herbs, shrubs, small trees and climbers. More than seventy species belonging to twenty-one genera are found in India. Economically the family is fairly important, as it comprises several crops of food value, medicinal value, vegetables and ornamentals. Several plants of this family are cultivated all over the world for their economic importance.

Chilli (*Capsicum annum*) is grown throughout the Marathwada region. It is consumed by every Indian. There is hardly a vegetable where chilli is not used as a condiment while cooking. Chillies are used in green as well as dry powdered form. It is rich source of Vitamin A and vitamin C among the vegetables. The Chillies are pungent due to the presence of the chemical capsaicin and the bright red colour at the ripening stage is due to the pigment capsanthin.

It has been found that due to hot and humid conditions in the region the fruits and their seeds of these crop plants may be covered with fungal mycelial mats, which are black orange or white in colour depending upon the specific fungus present. These fungal infections are known to cause heavy damages and impair the quality of fruits and seeds.

In the present studies ten local and easily available plants in the near by area were selected for their root, stem, leaf and bark extracts and the effects of these extracts on seed mycoflora and seed germination was studied.

### MATERIALS AND METHODS

#### Collection of seed samples:

The methods described by Neergaard (1973) have been adopted for the collection of seed samples. Accordingly, seed samples of different var. of Brinjal (50 g each) were collected from ripe dried fruits from field, storehouses, market places and research centers. A composite seed sample for each of the var. was prepared by mixing the individual seed samples together and preserved in gunny bags at room temperature during the studies.

#### Detection of seed mycoflora:

The seed-borne fungi of different varieties of seeds of Brinjal were detected by moist blotter (B) and agar (A) plate methods as recommended by ISTA (1966), De Tempe (1970), Neergaard (1973) and Agarwal *et al.* (1976). The procedure of moist blotter (B) and agar (A) plate methods are described as below.

#### Identification of seed-borne fungi:

The seed-borne fungi were preliminary identified on the basis of sporulation characters like asexual or sexual spores or fruiting structures. Detailed examination of fungal characters was done under compound microscope and their identification was confirmed with the help of latest manuals (Subramanian, 1971; Neergaard and Mathur, 1980; Jha, 1993 and Mukadam *et al.*, 2006). Pure cultures of the identified fungi were prepared and maintained on PDA (Potato Dextrose Agar) slants for