

Mycoflora associated with seeds of *Cyamopsis tetragonoloba* L. (Taub.)

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During analysis of mycoflora of seeds of *Cyamopsis tetragonoloba* L. (Taub.) by agar plate and blotter methods a total number of 19 and 17 species were isolated from unsterilized and sterilized seeds respectively. The number of fungal forms was higher by agar plate method than the blotter method. *Aspergillus flavus*, *A. fumigatus* and *A. niger* were found to be dominant fungi.

Key words : Mycoflora analysis, *Cyamopsis tetragonoloba*, Seeds

INTRODUCTION

Cluster bean (*Cyamopsis tetragonoloba* L. (Taub.) commonly known as guar is a drought hardy crop of India. Guar seeds provide endosperm capable of producing industrially valuable polymer in addition to an upgraded high protein. Guar gum is one of the major components of the seeds of guar. Guar gum provides a raw material for many industrial processes such as textiles, food processing, cosmetics, oils and products for paper industries. Fruits are used as vegetable and plants as fodder. A good deal of work has been done by several workers on mycoflora of vegetable seeds (Suryanarayan and Bhombey, 1961; Suryanarayan *et al.*, 1961; Mathur and Sehgal, 1964; Khandelwal and Prasada 1970). Keeping the economic importance of guar in view an attempt has been made to study the mycoflora associated with the seeds.

MATERIALS AND METHODS

Stored seeds of clusterbean were collected from local market and divided into

two lots. Seeds of one lot were surface sterilized with 0.1% mercuric chloride for one minute and thoroughly washed with sterilized distilled water. Seeds of the other lot were not surface sterilized. Mycoflora analysis of unsterilized and sterilized seeds was done by agar plate and blotter methods (International Seed Testing Association, 1966). Seeds of both the lots were transferred separately at the rate of 10 seeds/plate using sterilized forceps to two sets of sterile Petri dishes. One containing potato dextrose agar medium and the other containing two folds of sterilized moist blotter paper. Ten replicates were kept for each set and the plates were incubated at 25°C for a week with alternating cycles of 12 hour light and darkness, and then observed for the presence of fungal population.

RESULTS AND DISCUSSION

A total number of 19 and 17 fungal spp. were isolated from unsterilized and sterilized seeds respectively (Table 1 and 2). The number of fungal forms

Table 1. Mycoflora analysis of unsterilized seeds of cluster bean

Name of fungi isolated	Agar plate method	Blotter method
<i>Alternaria alternata</i>	+	+
<i>Aspergillus candidus</i>	+	—
<i>Aspergillus clavatus</i>	+	—
<i>Aspergillus flavus</i>	+	+
<i>Aspergillus fumigatus</i>	+	—
<i>Aspergillus luchuensis</i>	+	—
<i>Aspergillus nidulans</i>	+	+
<i>Aspergillus niger</i>	+	+
<i>Aspergillus terreus</i>	+	+
<i>Cladosporium herbarum</i>	+	+
<i>Curvularia lunata</i>	—	—
<i>Curvularia pallescens</i>	+	+
<i>Drechslera sp.</i>	—	—
<i>Fusarium moniliforme</i>	+	+
<i>Macrophomina phaseolina</i>	+	—
<i>Mucor racemosus</i>	+	—
<i>Rhizopus nigricans</i>	+	+
<i>Trichoderma viride</i>	+	+
White-sterile mycelia	+	—

+ = present — = absent

was higher in agar plate than the blotter method. Amongst all, *Aspergillus flavus*, *A. fumigatus* and *A. niger* were found to be dominant fungi (Figs. 1 and 2). However, some extra fungi were isolated by blotter method and thus

Table 2. Mycoflora analysis of sterilized seeds of cluster bean

Name of fungi isolated	Agar plate method	Blotter method
<i>Alternaria</i> sp.	—	+
<i>Aspergillus candidus</i>	+	—
<i>Aspergillus flavus</i>	+	+
<i>Aspergillus fumigatus</i>	+	+
<i>Aspergillus niger</i>	+	+
<i>Aspergillus terreus</i>	+	+
<i>Aspergillus sulphureus</i>	+	—
<i>Cladosporium</i> sp.	+	+
<i>Cladosporium herbarum</i>	+	—
<i>Curvularia pallescens</i>	+	—
<i>Fusarium moniliforme</i>	+	—
<i>Macrophomina phaseolina</i>	+	—
<i>Mucor racemosus</i>	+	—
<i>Penicillium</i> sp.	+	—
<i>Rhizopus nigricans</i>	+	—
<i>Trichoderma viride</i>	+	+
White sterile mycelia	+	—

+ = present, — = absent

both the methods appear to be equally good and supplementary to each other. Further studies on the storage of seeds problem including seed deterioration due to infestation of fungi is in progress.

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