

Seed borne fungi of seed spices

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ABSTRACT

Thirty two fungal species were isolated from four seed spice crops and among them, *Alternaria alternata* was the common, dominant species, ecto and endophytic seed borne in nature in seeds of cumin (*Cuminum cyminum*), fenugreek (*Trigonella foenum graecum*), fennel (*Foeniculum vulgare*) and coriander (*Coriandrum sativum*)

Key words : coriander, cumin, fennel, fenugreek, seed borne fungi

The presence of seed borne pathogens either on the surface (ecotophytic) or inside the seed (endophytic) deteriorate seed quality and also act as primary source of the disease. An attempt was made to isolate and identify the fungi associated with seeds of four seed spices, namely, cumin (*Cuminum cyminum* L.), fenugreek (*Trigonella foenum graecum* L.), fennel (*Foeniculum vulgare* Mill.) and coriander (*Coriandrum sativum*). Seed samples of these spices were collected from major growing areas of Rajasthan and stored at 10°C. Isolations were made by Blotter and Agar plate methods (ISTA 1976).

The isolates were purified by single spore or hyphal tip method and identified on the basis of their morphological characters. Their identity was further confirmed by the Division of Mycology

and Plant Pathology, Indian Agricultural Research Institute, New Delhi.

Cumin

Ten fungal species, namely, *Alternaria alternata*, *Aspergillus flavus*, *A. niger*, *A. ochraceus*, *Bipolaris hawaiiensis*, *B. spicifer*, *Curvularia prasadii*, *Chaetomium* sp., *Fusarium moniliforme* and *Rhizopus oryzae* were associated with seeds of cumin. Among the fungi isolated all were ecto and endophytic in origin except *Bipolaris* sp. and *Chaetomium* sp. which were ecto and endophytic in origin, respectively.

Fenugreek

Eleven fungal species, namely, *Alternaria* sp., *Aspergillus flavus*, *A. niger*, *A. sydowii*, *Chaetomium* sp., *Cladosporium cladosporoides*, *Drechslera*

spicifer, *Emericella nidulans* var. *acristata*, *Penicillium amantogriseum*, *Rhizopus stolonifer* and *Trichothecium roseum* were isolated among which *A. alternata*, *A. flavus*, *A. niger* and *P. amantogriseum* were ecto and endophytic in nature and rest of them were endophytic.

Coriander

Seeds of coriander were contaminated with 13 fungal species, namely, *Alternaria alternata*, *Aspergillus flavus*, *A. niger*, *A. fumigatus*, *A. nidulans*, *Curvularia* sp., *C. lunata*, *Fusarium chlamydosporum*, *F. moniliformae*, *F. pallidoroseum*, *F. solani*, *Phoma sorghina*, *Rhizopus stolonifer*,

Suncephalastrum racemosum and *Trichothecium roseum*. Among them *A. alternata*, *A. flavus* and *A. niger* were ecto and endophytic in nature.

Fennel

Seven fungal genera, namely, *Alternaria*, *Aspergillus*, *Cercospora*, *Cladosporii*, *Curvularia*, *Drechslera*, *Memnoniella*, and *Penicillium* were isolated from fennel seeds. All the fungi except *Penicillium* were ecto and endophytic in origin whereas *Penicillium* was ectophytic.

Reference

ISTA 1976 International rules for seed testing. Annexures, 1976. Seed Sci. Tech. 4 : 51-177.