

## Morphological and cultural characteristics of some storage fungi

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Storage fungi inhabiting the seeds, were studied on the basis of their morphological and cultural characteristics. Apart from different parameters tested, conidia production was luxuriant in *Aspergillus flavus*.

**Key Words :** Storage fungi, morphology, cultural characters

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Storage fungi play important role in deterioration of seeds in storage (Mukherjee and Nandi, 2002). Several investigators (Mukherjee *et al.* 1992 ; Mukherjee and Nandi, 2001) studied the fungi associated with seed in natural storage as well as those under different storage conditions (Mukherjee *et al.* 2002).

Fungi exhibit characteristic differences in growth patterns in culture, which include morphology, colour, growth rate, texture of the mycelial mat, conidia production and interactions with medium (Christensen and Kaufman, 1969). In the present investigation the morphological and cultural characteristics of some storage fungi are studied.

The test fungi isolated from three economically important seeds [starchy maize (*Zea mays* CV. Ganga), fatty groundnut (*Arachis hypogaea* cv. Nizam) and proteinaceous soybean (*Glycine max* cv. Bragg)], were taken into consideration.

The morphological and cultural characteristics of the test fungi were studied following the method of Nandi and Fries (1976). Macroscopic and microscopic observations were made and the salient features were noted for identification of the fungi.

Storage fungi isolated from the test seeds were mostly belong to the species of *Aspergillus*, which were earlier reported to be the dominant storage fungi in other seeds (cf. Mukherjee *et al.*, 1988).

Among the test fungi studied, highest growth was exhibited by *A. flavus*, followed in decreasing order by *A. niger* and *A. candidus*. Production of conidia was luxuriant in *A. flavus* followed by *A. niger*, *A. versicolor* and *A. terreus*. Other species showed moderate to scanty growth and conidia production. The *in-vitro* mode of growth of the test fungi also supported their role, in causing qualitative and quantitative deterioration of the affected seeds.

**Table 1 :** Growth characteristics of the storage fungi isolated from test seeds after seven days incubation on Difco-malt-agar medium (\*)

Fungi	Character of colony					Conidia	
	Texture	Colour	Reverse colour	Diameter (mm)	Dry wt. (mg)	Colour	Number/Petridish
<i>Aspergillus candidus</i>	Adpressed-thick	White cream	Pale yellow to buff	80	84	Hyaline	150 × 10 <sup>6</sup>
<i>A. chevalieri</i>	Thin, felty, and patchy	Blueish grey	Light brown at centre	80	46	Pale green	115 × 10 <sup>6</sup>
<i>A. flavus</i>	Adpressed, subfelty, widely spreading	Greenish yellow	Nil	90	96	Green	189 × 10 <sup>6</sup>
<i>A. fumigatus</i>	Tufted floccose	Dark Green	Yellowish at centre, diffusing towards periphery	65	30	Dark Green	60 × 10 <sup>6</sup>
<i>A. funiculosus</i>	Thin adpressed	Greenish yellow	Dull olive green	75	52	Greenish yellow	95 × 10 <sup>6</sup>
<i>A. niger</i>	Adpressed, floccose	Black	Hyaline to light yellow	86	86	Brownish black	178 × 10 <sup>6</sup>
<i>A. panamensis</i>	Thin, submerged scattered	Light brown	Dull brown with zonations	52	46	Light brown	65 × 10 <sup>6</sup>
<i>A. repens</i>	Adpressed to sodden	Dark green	Light yellow, to lemon	58	54	Dull green	86 × 10 <sup>6</sup>
<i>A. ruber</i>	Thin, adpressed to subfelty	Green to olive green	Light brown	60	65	Dull green	86 × 10 <sup>6</sup>
<i>A. sulphureus</i>	Adpressed, powdery	Yellowish green	Light brown	50	62	Yellowish green	95 × 10 <sup>6</sup>
<i>A. terreus</i>	Velvety, adpressed floccose	Pinkish brown to deep brown	Bright yellow to light brown	45	56	Pinkish brown	145 × 10 <sup>6</sup>
<i>A. versicolor</i>	Velvety, supressed floccose	Pea green with shade of yellow	Yellow to light brown	52	46	Pea green	166 × 10 <sup>6</sup>

\* Mean of three replicates.

## ACKNOWLEDGEMENT

The authors sincerely thank the authority of the B. U. for the permission to carry out this work. The authors are also indebted to Prof. B Nandi for identifying the test fungi. Thanks are also due to Prof. N. Chatterjee for his help.

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(Accepted for publication December 14 2005)