

ADDITION TO SEEDBORNE MYCOFLORA OF MUSTARD (*BRASSICA CAMPESTRIS* L.)

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Mustard (*Brassica campestris* L.) is an important oil seed crop of Pakistan cultivated over 3,53,900 ha giving an yield of 2,85,600 tonnes annually (Anon., 1997). Richardson (1979, 1981, 1983) has listed 17 genera and 25 species of fungi from mustard seeds whereas a total of 9 genera and 17 species of fungi have been reported from mustard seeds in Pakistan (Iftikhar *et al.*, 1993). In the present study, 10 seed samples of mustard collected from different markets of Karachi were analyzed using Standard Blotter and Deep-Freezing methods (Anon., 1976). A total of 9 genera and 14 species of fungi viz., *Aspergillus flavus*, *A. niger*, *A. niveus*, *A. sulphureus*, *A. fumigatus*, *A. terreus*, *Chaetomium sp.*, *Cephalophora irregularis*, *Curvularia lunata*, *Bipolaris hawaiiensis*, *Fusarium oxysporum*, *Penicillium sp.*, *Rhizopus stolonifer* and *Syncephalastrum sp.*, were isolated and identified (Table 1). Of these, *A. niger* and *A. fumigatus* have been reported from mustard seeds from India (Mondal *et al.*, 1988) and

Table 1. Incidence of fungi on mustard seeds.

Fungi	Standard Blotter Method			Deep Freezing Method		
	Infection %	Mean SE \pm	SD	Infection %	Mean SE \pm	SD
<i>Aspergillus flavus</i>	33.66	134.66 \pm 37.07	90.8	12.34	160.75 \pm 11.34	22.86
<i>A. niger</i>	1.51	6.16 \pm 1.64	4.02	0.5	2 \pm 1.35	2.7
<i>A. niveus</i>	1.87	7.5 \pm 4.90	2.02	-	-	-
<i>A. sulphureus</i>	1.2	4.8 \pm 2.05	5.03	2.81	11.25 \pm 7.78	15.58
<i>A. fumigatus</i>	0.166	0.66 \pm 0.32	0.8	-	-	-
<i>A. terreus</i>	-	-	-	0.68	2.75 \pm 2.75	5.5
<i>Chaetomium sp.</i>	0.124	0.5 \pm 0.49	1.22	0.25	1 \pm 0.7	1.4
<i>Cephalophora irregularis</i>	0.04	0.16 \pm 0.166	0.408	-	-	-
<i>Curvularia lunata</i>	0.04	0.16 \pm 0.166	0.408	-	-	-
<i>Bipolaris hawaiiensis</i>	-	-	-	0.25	1 \pm 0.7	1.4
<i>Fusarium oxysporum</i>	-	-	-	0.75	3 \pm 1.29	2.58
<i>Penicillium sp.</i>	0.083	0.33 \pm 0.134	0.5	-	-	-
<i>Rhizopus stolonifer</i>	4.95	19.38 \pm 8.49	20.8	7	28 \pm 16.17	32.34
<i>Syncephalastrum sp.</i>	5.04	20.16 \pm 11.90	29.15	5.87	23.5 \pm 13	27.13

F. oxysporum from Pakistan (Richardson, 1979) whereas *A. niveus*, *A. sulphureus*, *A. terreus*, *Chaetomium* sp., *Cephalophora irregularis*, *Curvularia lunata*, *Rhizopus stolonifer* and *Syncephalastrum* sp., do not appear to have been reported from mustard seeds (Richardson, 1979, 1981, 1983; Iftikhar *et al.*, 1993).

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(Received of publication 11 March 1999)