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MICROFLORA ASSOCIATED WITH SUNFLOWER SEEDS*

Sunflower (*Helianthusannus* L.), the fourth largest source of oilseed crop, is at present cultivated on a large scale in India. With the extensive cultivation of this crop, a number of diseases have gained importance. A study was, therefore, undertaken to assess the microflora associated with the seeds of sunflower.

The seed microflora of three varieties of sunflower, viz., E. C. 68413, E, C. 68414 and Sunrise Selection was determined. The seeds were surface sterilized with 0.1 per cent mercuric chloride solution for two minutes and

Table 1

Frequency of occurrence of diffenent fungi on three different varieties of sunflower

Fungi	Sunflower variety											
	E. C. 68413				E. C. 6 414				Sunrise Selection			
	Agar medium		Blotter		Agar medium		Blotter		Agar medium		Blotter	
	S	US	S	US	S	US	S	US	S	US	S	US
Aspergillus sp.	85	99	60	84	18	99	4	38	30	91	18	73
Alternaria tennis	22	61	25	59	81	82	40	83	2	2	4	1
Alternaria helianthi		3	4	—			1			1		
Alternaria zinniae	—	—				2	—	—	—	—	—	—
Rhizopus sp.	42	100	6	15	1	100		23	23	99	1	47
Fusarium sp.	25	80	2	24	3	7			2	1	5	
Helminthosporium sp.		2	1	1		1	2	2			1	1
Curvularia sp.		2	1	4				4		—	—	2
Puccinia sp.		2										
Trichoconis sp.	—	2	—	—	—	—	—	—	—	—	—	—
Diplodia sp.	—	—					1	1	—	—	—	—
Chaetomium sp.	—	—	—	—	—	—		1	—	—	—	—
Unidentified	1		6	3	5	5	—	2	13			16

S = Sterilized seeds US = Unsterilized seeds

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repeatedly washed in sterile distilled water. One hundred surface sterilized and unsterilized seeds each were placed on sterilized moist filter paper and on potato-dextrose agar medium and incubated at room temperature. The observations were taken after three days and the fungi associated with the seeds were recorded.

The data revealed that *Rhizopus* sp., *Aspergillus* sp. *Alternaria tenuis* and *Fusarium* sp. were predominant and they were observed more frequently under the two methods adopted for the assessment of seed microflora. Different fungi were found to occur on the same seed. The seeds of sunflower variety E. C. 68413 were highly infested with species of *Fusarium*. The presence of *Alternaria helianthi* was observed only rarely eventhough it was the predominant fungus infecting the crop under field conditions.

Agarwal and Singh (1974) studied the seed microflora of fourteen varieties of sunflower and recorded *Botrytis cinerea*, *Sclerotinia sclerotiorum*, *Ulocladium* sp. and *Verticillium* sp. also; but they have not reported the association of A. *helianthi*, *Aspergillus* sp. *Rhizopus* sp. *Helminthosporium* sp. *Trichoderma* sp., *Diplodia* sp. and *Puccinia* sp. This indicated that the types of seed-borne fungi may vary depending on the conditions under which the crop was grown and environmental conditions.

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സംഗ്രഹം

മൂന്നിനം സൂര്യകാന്തി വിത്തു് സൂക്ഷ്മമായി പരിശോധിച്ചതിൽ, അവയിൽ രോഗകാരികളും ഉൾപ്പെടെ അനേകം ഫംഗസ്സുകളും ഉള്ളതായി തെളിയുകയുണ്ടായി. റൈസോപ്പസ്, ആസ്പേർജിലസ്, ആൾടർനേറിയ റെനയ്സ്, ഫ്യൂസേറിയം എന്നിവയാണു് ഏറ്റവും സർവസാധാരണമായി കാണുന്ന ഫംഗസ്സുകളും.

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