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SEED BORNE MYCOFLORA OF SESAME *(SESAMUM INDICUM* L.)

An attempt was made to isolate and identify the various seed borne fungi in sesame *(Sesamum indicum* L.). Sesame is mainly cultivated for its oil. Among the different fungal diseases affecting the crop, some are known to he caused by seed borne fungi which cause reduction in the nutritive value and other qualities of seeds as well. Seed borne nature of the fungi also causes rancidity of the oil. Leppik and Sowell (1964) recorded *Alternaria sesami* as a seed borne pathogen of sesamum distributed all over the world. The dormant mycelium of the fungus usually occurs in sub-epidermal layers of the seed coat. The seed borne nature of *Macrophomina phaseolina* associated with sesame has been observed and reported by Kushi and Khare (1978).

The seed borne fungi were isolated from the varieties viz., Kayamkulam 1, TC 30, No. 42, Assam Local, B 64, Si 866, Kayamkulam 2, T 13, Timbi 9 and Trivandrum Local. The seeds were supplied by the Department of Agronomy, College of Agriculture, Vellayani, Trivandrum. Standard blotter method and agar plate method with potato dextrose agar (PDA) were used for the isolation of seed borne fungi (ISTA, 1976). Surface sterilized and unsterilized seeds were placed on sterilized moist blotter paper and on PDA. One hundred seeds of each variety were used for each method of isolation. Seed sterilization was done by using 0.1 per cent mercuric chloride. Observations were recorded after five days and the fungi associated with the seeds were isolated and identified.

Among the two methods used viz., standard blotter method and agar plate method, the latter was found to be better than the former since more species of fungi were isolated by this method. In general, the **predominant** fungi were *Rhizopus nigricans, Aspergillus flavus, Mucor haemalis, A. niger, Penicillium chrysogenum* and *Alternaria sesami.* Among the ten varieties of sesame seeds tested, Kayamkulam 1, TC 30, No. 42 and Assam Local were in general, found to harbour more number of fungal propagules (Tables 1 and 2). Many of the fungi obtained from the seeds of sesamum during the present study were also reported by Mathur and Kabeere (1975) and Kumar *et al.* (1984) as seed borne fungi of sesamum. Singh *et al.* (1972) observed the seed borne nature of *Macrophomina phaseolina* in sesame seeds and reported the role of seed borne pathogens in reducing the nutritive value of sesame.

Table 1. Per cent incidence of fungi associated with seeds of ten varieties of sesamum by blotter method

		Fungi isolated*								
		Sterilized								
	Varieties	1	2	3	4	5	6	7	8	9
1	Kayamkulam 1	16	9	4	3	-	-	41	29	21
2	TC 30	4	16	-	10	–	-	21	16	18
3	No. 42	10	4	-	-	-	-	8	7	9
4	Assam Local	16	10	12	4	-	-	18	17	21
5	B64	7	2	-	-	1	-	5	4	6
6	Si 866	-	7	8	11	2	-	26	-	19
7	Kayamkulam2	7	-	-	32	16	2	-	-	-
8	T 13	5	-	14	-	-	-	11	-	8
9	Timbi 9	-	-	7	-	21	-	-	-	-
10	Trivandrum Local	14	21	7	-	4	2	14	-	35
		79	69	52	60	44	4	144	73	137

Table 1 (contd.)

	Varieties	Fungi isolated								
		Unsterilized								
		1	2	3	4	5	6	7	8	9
1	Kayamkulam 1	21	18	g	5	-	8	54	32	38
2	TC 30	19	23	6	18	-	27	32	11	33
3	No. 42	16	19	-	-	-	-	14	7	19
4	Assam Local	24	35	21	2	9	-	24	35	43
5	B64	12	11	2	-	4	-	11	7	21
6	Si 866	2	15	4	-	7	-	11	-	29
7	Kayamkulam 2	11	4	-	26	-	-	26	-	-
g	T 13	5	1	21	-	5	-	7	-	21
9	Timbi 9	-	-	11	-	44	-	-	2	6
10	Trivandrum Local	20	32	-	-	1	2	-	-	2
		130	157	73	51	70	37	189	94	212

*1. *Aspergillus niger*
2. *Aspergillus flavus*
3. *Alternaria sesami*
4. *Curvularia lunata*
5. *Botrydiplodia theobormae*
6. *Fusarium oxysporum f.* sp. *sesami*
7. *Mucor hiemalis*
8. *Penicillium chrysogenum*
9. *Rhizopus nigricans*

Table 2. Per cent incidence of fungi associated with the seeds of ten varieties of sesamum by agar plate method

	Varieties	Fungi isolated								
		Sterilized								
		1	2	3	4	5	6	7	g	9
1	Kayamkulam 1	28	14	8	6	-	*4*	22	29	*44*
2	TC 30	13	24	*7*	9	-	-	28	30	52
3	No. 42	24	*16*	-	-	-	-	*16*	21	19
4	Assam Local	21	24	*32*	15	-	-	*2*	23	11
5	B64	*14*	7	*5*	-	-	-	-	7	9
6	Si 866	*2*	7	-	*14*	-	-	-	2	4
7	Kayamkulam 2	12	*21*	*4*	4	-	4	-	12	*4*
8	T 13	5	-	14	2	3	2	19	7	g
9	Timbi 9	2	*1*	10	-	6	-	-	21	*30*
10	Trivandrum Local	21	*30*	4	-	2	4	6	2	4

Table 2 (contd.)

	Varieties	Fungi isolated								
		Unsterilized*								
		1	2	3	4	5	6	7	8	9
1	Kayamkulam 1	34	28	10	7	5	7	29	32	50
2	TC 30	22	34	11	18	3	-	35	44	61
3	No. 42	32	28	-	-	-	11	20	12	32
4	Assam Local	36	34	2	16	-	1	24	36	28
5	B64	21	9	16	-	2	-	12	16	19
6	Si 866	2	10	18	-	14	19	29	-	-
7	Kayamkulam 2	19	41	-	4	6	-	12	-	7
8	T 13	9	14	21	-	4	-	24	16	10
9	Timbi 9	6	4	16	3	6	3	2	-	19
10	Trivandrum Local	30	31	2	2	-	-	10	12	29

*1. *Aspergillus niger*
2. *Aspergillus flavus*
3. *Alternaria sesami*
4. *Curvularia lunata*
5. *Botrydiplodia theobormae*
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8. *Penicillium chrysogenum*
9. *Rhizopus nigricans*

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