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EFFECT OF SOME PLANT POWDER ON MYCOFLORA OF KUJRI SEEDS DURING STORAGE

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Dry seeds of Kujri are stored, traditionally by the tribes of Chotanagpur. They store the seeds in earthen pot, gunny bag, metal container and poora. These seeds are contaminated with a number of storage fungi. To minimise the mycoflora storage seeds were stored supplemented with some plant powders.

Keywords : Chotanagpur; Poora; Sindwar; Storage fungi.

The name Kujri is common in all tribes of Chotanagpur of Jharkhand state i.e. Oroan, Munda, Ho and Kharia. Kujri, *Celastrus paniculata* of family Celastraceae is an oil yielding plant. The oil is medicinally very useful for villagers. They use Kujri oil specially to cure Ulcer, Asthma, Tuberculosis and in many skin diseases. The plant is a perennial climber, wildly growing in the forest, having beautiful yellow flowers and orange fruits in the month of September. Villagers collect the ripe fruits, dry it, take out the seeds and store the seeds in gunny bags, earthen pot and in poora (made up of Husk). Where humid condition prevails in the atmosphere, deterioration of seeds due to mycoflora takes place. The present study was conducted to explore the usefulness of some plant powder in reducing the incidence of mycoflora on Kujri seeds during storage.

Kujri seeds were collected from villages of west Singhbhum of Jharkhand state. The seeds were sun dried and stored in gunny bags for one year. Before storing these, seeds were supplemented separately w ith 5% w/w dried neem, *Azadirachta indica* leaf and stem powder, sindwar, *Vitex negundo* leaf and stem powder and dried paddy husk powder. Seed samples were taken out periodically at an interval of three months for one year. The seed mycoflora were studied by standard Blotter and Agar plate methods. The percentage frequency of fungi was calculated. The results are tabulated.

Perused of table indicates that 14 species of fungi were isolated from control Kujri seeds. Only 10, 10 and 11 species were identified on seeds stored supplemented with Neem, Sindwar and paddy husk powder respectively after three months of storage. The number of species gradually decreased in the successive six and nine months and finally the number of species were decreased to 6,7 and 7 after 12 months of storage on seeds supplemented with Neem, Sindwar and paddy husk powder respectively. The percent frequency of fungi was comparatively more on seeds supplemented with paddy husk powder and low in seeds supplemented with Neem and Sindwar leaf and stem powder.

Krishna Rao and Ratna Sudhakar[1] reported the effect of rhizome powder of *Acorus calamus* and leaf powder of *Azadirachta indica* with paddy during storage reducing the fungus. Khaire *et. al.*[2] used the mixture of vegetable oil to protect pigeon pea during storage. Ramadevi[3], reported effect of some dried leaf powder on grain mycoflora. Singh and Saha[4] reported seeds of Mahua stored with husk, lowered the fungal incidence. Savitari *et. al.*[9] reported sorghum seeds treated with Neem leaf powder and Karanj oil lowered the fungal mycoflora.

There are some report on the chemical control of microorganisms of storage food grains[6,7]. These chemicals are of high cost and toxic to human being.

Therefore it is concluded that for the poor villagers it is best and cheapest to use the Neem and Sindwar leaf and stem powder and paddy husk powder to minimize the mycoflora during storage.

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Table 1. Percent incidence of fungal organisms associated with seed samples of Kujri (*Celastrus paniculata* L.) stored in Gunny bag supplimented with Neem, Sindwar leaf and stem powder and Paddy Husk Powder.

Percent incidence of fungi in storage system for one year (1995-1996)

Sl. No.	Fungal Species	Control				Neem leaf+stem Powder				Sindwar leaf+stem Powder				Paddy Husk powder			
		Period of storage in months				Period of storage in months				Period of storage in months				Period of storage in months			
		3	6	9	12	3	6	9	12	3	6	9	12	3	6	9	12
1.	*Aspergillus glaucus*	34	40	42	34	14	20	22	26	16	22	22	28	20	22	24	28
2.	*Aspergillus niger*	44	58	72	84	4	-	-	-	12	14	14	16	24	26	28	28
3.	*Aspergillus flavus*	36	42	50	56	6	4	-	-	16	20	26	30	20	24	26	26
4.	*Aspergillus species*	16	14	8	8	-	-	-	-	4	4	-	-	8	6	-	-
5.	*Mucor species*	26	14	4	4	6	4	-	-	16	6	-	-	14	4	-	-
6.	*Rhizopus stolonifer*	20	14	6	4	4	-	-	-	-	-	-	-	8	6	4	-
7.	*Helminthosporium sps.*	4	4	-	-	14	16	22	28	8	6	4	4	-	-	-	-
8.	*Paecilomyces sps.*	26	26	22	20	8	6	4	4	16	20	24	30	22	8	6	4
9.	*Penicillium expansum*	34	42	56	56	14	16	22	28	18	24	30	36	18	24	28	32
10.	*Penicillium species*	34	42	50	50	14	22	28	30	14	18	16	12	22	28	32	38
11.	*Fusarium solani*	28	34	34	32	12	16	14	6	22	8	-	-	24	28	22	16
12.	*Curvularia lunata*	36	28	-	-	-	-	-	-	-	-	-	-	20	14	6	-
13.	*Alternaria alternata*	14	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.	*Cercospora species*	8	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total Nos. of species	14	14	9	9	10	8	6	6	10	10	7	7	11	11	9	7

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