

**EVALUATION OF FENUGREEK SEED MYCOFLORA**

\*S. Rehan Ahmad

Research Scholar, Shri Venkateshwara University, India.

\*Corresponding Author: S. Rehan Ahmad

Research Scholar, Shri Venkateshwara University, India.

Article Received on 21/02/2015

Article Revised on 11/03/2015

Article Accepted on 01/04/2015

**ABSTRACT**

Six fungi species, including *Alternaria alternata*, *Aspergillus flavus*, *Aspergillus nigar*, *Fusarium solani*, *Penicillium italicum*, *Mucor*, and *Rhizopus stolonifer*, were identified in the current study of the mycoflora associated with the seeds of fenugreek (*Trigonella foenum graecum* L). Fungi found in seeds reduce yield and harm the health of the seeds.

**KEYWORDS:** Fenugreek, seed borne, mycoflora, seed health.

**INTRODUCTION**

*Trigonella foenum graecum* L., also known as fenugreek, is an annual herb that grows in desert and semi-arid regions of India during the rabi season. Its seeds and leaves are frequently used as ingredients in Indian food and have been used in cooking for a very long time [Debaggio. Thomas et al 2009]. Fenugreek is thought to have been grown in the Near East. Which wild strains of *Trigonella* gave rise to domesticated fenugreek is unknown. Rajasthan contributes to nearly 80% of India's output of fenugreek, which is produced in several different Indian states [V. A. Pathasaraty et al 2001]. Fiber, protein, vitamin B, and nutritional minerals are abundant in fenugreek seeds. Fenugreek seeds contain 1,350 kilojoules (323 kcal) of dietary energy per 100g, 9% water, 58% carbohydrate, 23% protein, and 6% fat, with calcium making up 40% of the daily intake. Fenugreek is used in traditional medicine to improve blood sugar control in diabetics, induce labour, boost breast-feeding milk production, and stimulate digestion. Amharic is the language of fenugreek, which is utilised in Ethiopian and Eritrean cuisine. The seeds are also used there as a natural herbal remedy to cure diabetes [Zerihun shenkute et al. 2009]. Crops are produced using seeds, which are carriers of certain serious seed-born diseases that result in yield losses and seed mycoflora that inhibits germination (Tamuli and Boruah 2001). This experiment sought to discover the fenugreek seeds' mycoflora.

**MATERIAL AND METHODS**

**Collection and preservation**

*Trigonella foenum-graecum* L seeds were obtained from a variety of local markets, retail stores, and godowns in the Malda district, West Bengal. During the research, they were combined and kept at room temperature.

**Isolation and Identification of Seed-Borne Fungi**

In accordance with International Seed Health Testing Association ISTA 1996 recommendations, the mycoflora of fenugreek seeds was isolated using the Blotter paper method and the Agar plate method.

**Agar Plate Method:** Glucose Nitrate Agar media was poured into pre-sterilized petriplates (GNA). After chilling, 30 study seeds were evenly spaced out on each plate. At 25+<sub>2</sub>°c, the plates were incubated. Seeds were prepared with microscope slides and evaluated seven days later.

**Method using blotter paper:** Blotting paper with an 8.5 cm diameter were placed on petri plates after being soaked in sterile distilled water. 10-15 seeds were evenly distributed across wet blotter paper. At 25+<sub>2</sub>°c, the plates were incubated. Seeds were prepared with microscope slides and evaluated seven days later.

**Table 01: Seed mycoflora of fenugreek seeds by Agar plate (A) and Blotter paper (B).**

Sl. No.	Associated seed mycoflora	Agar plate method	Standard Blotter paper
01	<i>Aspergillus flavus</i>	+	-
02	<i>Aspergillus nigar</i>	+	+
03	<i>Alternaria alternata</i>	+	-
04	<i>Fusarium solani</i>	-	+

05	<i>Penicillium italicum</i>	+	+
06	<i>Rhizopus stolonifer</i>	-	-
07	<i>Mucor spp</i>	+	+

Present +, Absent -

### RESULT AND DISCUSSION

The study shows that the fungus was isolated from fenugreek seeds that were gathered in the Malda area of West Bengal. *Alternaria alternate*, *Aspergillus flavus*, *Aspergillus niger*, *Fusarium solani*, *Penicillium italicum*, and *Rhizopus stolonifer* were among the six fungal species discovered. Fungal isolation considering several isolation techniques Comparing the two methods, the agar plate method reveals more fungus species (Table. 01). Fenugreek is an intriguing herb with a wide range of applications and potential health advantages. Six fungus species belonging to various genera were isolated and identified because of the current inquiry. To effectively protect human health and welfare, it is essential to improve the circumstances of fenugreek seeds during processing, storage, and transport as well as maintain continuous mycological and mycotoxicological control prior to food preparation.

### CONCLUSION

Fungi found in seeds reduce yield and harm the health of the seeds. So it is needed to culture to preserve the Fenugreek judiciously and scientifically.

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