

Effect of common and dominant vegetable Mycoflora on protein, fat and fibre content of Methi (*Trigonella foenum-graecum* L.) Leaves

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Abstract

Fenugreek is truly multipurpose herb. Fenugreek Leaves and seeds are important for cooking used as supplement to control blood glucose, specifically especially to prevent diabetes balance cholesterol, reduce fat mass maintain liver and kidney health, reduce fever, etc. It is a common ingredient dishes and often taken as a supplement. The seed borne pathogens are one of the major causes of diseases in growing crops because of poor health and quality of seeds. The methi Leaves and seeds associated with fungi found to be enable germinate to realize this aspect, the study has been undertaken and it was observed that total six common and dominant fungal species like *Alternaria tenuis auct.*, *Aspergillus flavus link ex.Fr.*, *Aspergillus niger van Teigh.*, *Curvularia lunata*, *Drechsletra tetramera*, *Subbran. & jain.*, *Fusarium moniliforme* and *Rizoporus stolonifer chrenb* on the methi leaves. This part is also devoted for the study effect of common and dominant vegetable mycroflora on protein, fat and fiber content of methi leaves. In order to study the bio deterioration the methi leaves were surface sterilized with 0.2% HgCl₂ subsequently washed with distilled and then artificially treated with the spore suspension of the common and dominant methi mycroflora. After incubation the methi leaves were washed with sterile distilled water. Percentage of protein, fat and fiber content of the methi leaves was studied by different method and condition. The results to note that on the test fungi found to be caused reduction in protein, fat and fiber content of the methi leaves.

Keywords: Methi Leaves, dominant mycoflora, protein, fat and fiber.


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Introduction

Fenugreek has been long known as a potent herb in traditional medicine. Its seed contain protein with desirable amino acid, lipids and biogenic elements both seeds and leaves are also used in food preparation, including in stews, curries dyes, etc. [1]. In modern food technology fenugreek is used as food stabilizer, adhesives and emulsifying factor because of its gum, protein and fibre content. It is a rich source of calcium, iron and other vitamins [2]. Fenugreek has been referred to as traditional herb both in Indian Ayurvedic and traditional Chinese medicines [3]. Fenugreek (*Trigonella foenum graecum* L.) occupies prime position among seed spices grown in India which has medicinal value with aromatic, carminative tonic and galactagogue properties [4]. Fenugreek the compound help in hormonal balance to prevent various degenerative disorder especially in women [5]. Plants are very useful self-generating machines producing a variety of useful bioactive products [6]. The chemical analysis of fenugreek seed show that the content of moisture 4%, fibre 6.50 %, Ash 3.20%, protein 28.55%, fats 4% and carbohydrates 62.48% respectively. The inhibitory effect of fenugreek leaves tested against mould *Aspergillus niger* [7]. Hashmi [8] reported 20 general and 46 species of seed borne fungi on seed samples of Capsicum, Coriander and Fenugreek. A large number of studies have been carried out associated with Methi leaves. The study of this aspect observed that artificially treated with the six common and dominant fungal mycoflora on Methi leaves after incubation the Methi leaves observed

percentage of protein fat and fibre. The result note that all the test fungi found to be caused reduction in protein fat and fibre contain of the Methi leaves. Percentage of protein, fat and fibre contain of the Methi leaves was studied by different method and conditions. Similar study were carried out by Ahmed and Faiz [9], Alices [10], Abdel and Heba [7], Bhakunni et.al [11], Bhowmik and Chaudhary [12], Chary and Reddy [13] Denna [14] Dwivedi and Pathak [15], Nasri and Tinay [16], Iqbal et al. [17], Jhahria and Choudhary [2], Kamaraiah and Reddy [18], Naidu et al. [4], Singh and Singh [19].

Methodology

Collection of sample: Sample was collected from farmer of Nanded district.

Preparation of suspension: The present study Methi leaves where surface sterilized with 0.1% $HgCl_2$ and subsequently washed with sterile distilled water. The sterilized leaves were incubated for seven days at room temperature. After incubation the leaves were washed with sterile distilled water. The protein, fat and fibre content of the leaves were studied by different method and conditions. The leaves without infestation were served as control. The results are presented in table.

Results and Discussions

From the result present in table it is clear that the Methi leaves contain more protein (4.40 %), than fibre (1.10 %) and Fat (0.90%).

Table1: Effect of common and dominant vegetable mycoflora on protein, fat and fiber content of Methi (*Trigonella foenum-graecum* L.) Leaves .

Sr. No.	Vegetable mycoflora	Methi leaves		
		Protein Content (%)	Fat Content (%)	Fibre Content (%)
1.	<i>Alternaria tenuis</i> Auct.	2.80	0.06	0.88
2.	<i>Aspergillus flavus</i> Link ex, Fr.	1.70	0.02	0.69
3.	<i>Aspergillus niger</i> van Tiegh	2.00	0.04	0.53
4.	<i>Curularia lunata</i> (Wakker) Boedijn	3.80	0.08	0.99
5.	<i>Drechslera tetramera</i> Subram. & Jain	2.90	0.07	0.92
6.	<i>Fusarium moniliforme</i> Sheldon	3.10	0.01	0.92
7.	Control	4.40	0.90	1.10

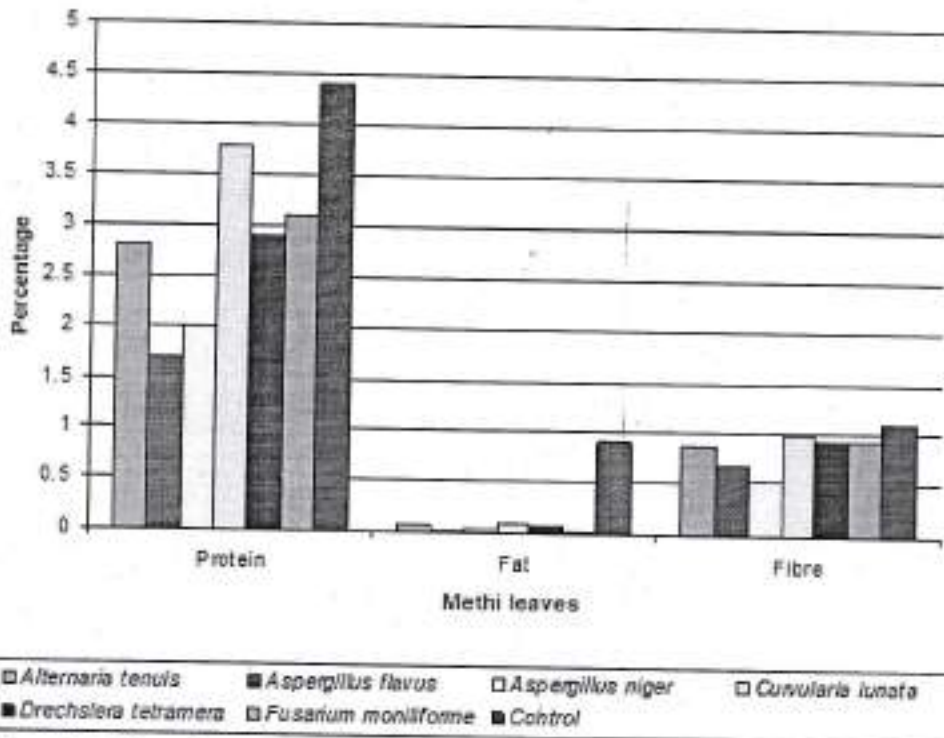


Figure 5: Graph showing Effect of common and dominant vegetable mycoflora on protein, fat and fibre content of Methi (*Trigonella foenum-graecum* L.) leaves.

It is interesting to note that all the taste fungi found to be caused reduction in protein fat and fibre content of the Methi leaves. The fungi like *Aspergillus flavus* link.ex.fr. And *Aspergillus niger* van Teigh, Were found to be caused more reduction in protein fat and Fibre content of Methi leaves. Whereas the fungus *Curvularia lunata* (wakker)Boedijn. Was found to be caused very less reduction in the protein, Fat and Fibre content of the Methi leaves.

Conclusion

The present study thus revealed that vegetable cabbage fungi associate with them, *Aspergillus* spp. *Fusarium* sp. *curvularia* sp. The aqueous extract of the WBM of the test vegetable contain had performed effect on the fungal spoilage as well as seed health.

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