



Research Article

Estimation of Proximate Composition of seed of *Trigonella Foenum-Graecum* Plant from the Region Karmad in Aurangabad City, Maharashtra

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ABSTRACT

Methi in Maharashtra also called as *Trigonella Foenum-Graecum* have created its own important in the food items and other dishes as well as in food curry. In Indian as well as all countries through the world. *Methi* contain very significant and beneficial component which are useful for the growth and development of human being and metabolic activities. Up till now *Trigonella Foenum-Graecum* from Karmad region of Aurangabad district is untouched for proximate analysis. Considering all these things the proximate analysis of *Trigonella Foenum-Graecum* that is *Methi* from Karmad region were investigated and in proximate analysis solubility in hot water, total ash value, and presence of moisture and ash content. Cold water, 1% NaOH (aq.), 1% HCl(aq.), and 1% CH₃COOH (aq.) were found quantitatively.

Keywords: *Trigonella Foenum Graecum*, seeds, proximate analysis,

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INTRODUCTION

In proximate analysis it developed vital to examine the moisture content, ash content, cold water solubility, hot water solubility, 1 % aqueous NaOH, HCl and CH₃COOH solubilities respectively. Moisture content offers us evidence about total amount of water present in the part of plant or plant which crucial for preserving and stability of those ingredient so it is essential to determine before starting the other work. Second is ash contain which provides the information regarding useful and non-useful ingredients while water solubility's are essential to determine the water soluble acidic, basic, neutral content in the plant sample. This information provides us the techniques for separation, isolation and identification of soluble content in the plant sample. 1 % aqueous NaOH solubility provides us the % of acidic and some neutral components present in the plant sample and hence for isolation and separation of acidic and phenolic components of plant sample. 1 % aqueous NaOH solubility became essential, 1 % aqueous HCl and CH₃COOH essential for isolation and separation of basic

components of plant samples hence proximate analysis of Brassica oleracea var. capitata become essential hence proximate analysis of *Trigonella Foenum-Graecum* from Karmad region of Aurangabad district was carried out.

Most of the chemist throughout the world now change their research attitude in herbal drugs, natural products and proximate analysis of plants parts are considering all these facts of *Trigonella Foenum-Graecum* from Karmad area of Aurangabad district of Maharashtra state of India as this work still lacking from this region.

MATERIALS AND METHODOLOGY

All chemicals used during the research work were of A.R. grade. Freshly prepared solutions were used throughout the research work. The solvents were purified by known literature methods¹⁴.

Sample Preparation

On July 20–21, 2022, the plants were select from Mr. Shaikh Zuber's farm in Karmad, Aurangabad, Maharashtra State,

India. To get rid of dirt and dust from the plants, they were first cleaned with tap water and then twice-distilled water. After being cut off the seeds and dried. To create a fine powder, dried seed was crushed in a mortar and pestle. Known literature methods are employed to use this fine powder in proximate studies¹⁵⁻¹⁷.

Proximate Analysis

The examination of physicochemical parameters such as moisture content, total ash value, acid-insoluble ash value, and solubility of the sample was carried out by the known literature methods¹⁸⁻²⁰. Solubility of the sample was checked in cold water, hot water and 1% NaOH(aq), HCl(aq), CH₃COOH (aq) solution. Percentage of moisture and ash contents and acid insoluble ash are determined by using following formula,

Moisture Content = Weight of sample taken – Weight of sample after treatment,

$$\% \text{ of moisture} = \frac{\text{Loss of weight of sample}}{\text{Weight of sample taken}} \times 100$$

while, Percentage of solubility is determined by using following formula,

$$\% \text{ of Solubility} = (\text{loss of weight of sample})/(\text{weight of sample taken}) \times 100$$

The results obtained are given in **Table No-1**

Table 1: Proximate Parameters

Sr. No	Proximate Parameters	Loss of weight of sample	Amount of sample taken (in grams)	%
1	Moisture content	0.801	1	80.1
2	Total ash content	0.075	1	7.50
3	Acid insoluble ash value	0.31	1	31.00
4	Coldwater solubility	0.42	1	42.44
5	Hot water solubility	0.32	1	32.00
6	NaOH(aq) solubility	0.36	1	36.00
7	HCl(aq) solubility	0.39	1	39.00
8	CH ₃ COOH(aq) solubility	0.118	1	18.1

RESULT AND DISCUSSION

The moisture content in any part of plant gives evidence for an activity of water-soluble enzymes and coenzymes essential for the metabolic activities of that plant and it is detected from Table No.-1 that, total moisture content in leaves of was found to be 80.1% which is good for metabolic activities in the plant growth and progress of the plant. It was found that the total ash content found from dry stem pieces is 7.5 % and acid insoluble ash value is 31 % which are good and these proximate parameters of plant organs are useful for the determination of the mineral contents. Coldwater solubility and hot water solubility were found to be 42.44 % and 32% respectively; these proximate parameters will give information regarding water soluble neutral, acidic, basic and hydrocarbons present in the samples in herbal chemistry. HCl solubility and CH₃COOH solubility were found to be 39.00% and 18.2% respectively, these proximate parameters gave information regarding basic organic components present in the sample and NaOH solubility was found to be 36.00% which gave information regarding acidic organic components present in the sample.

CONCLUSION

The root of *Trigonella Foenum-Graecum* from Karmad (PIN Code 431007) in the District Aurangabad of Maharashtra showed good proximate parameters according to the good results of the proximate analysis. Additionally, *Trigonella Foenum-Graecum* seed at Karmad (PIN Code 431007) in District Aurangabad, Maharashtra have natural physicochemical, physiological, and anatomical activities that make them useful for medicinal purposes.

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