

PHYSIOCHEMICAL PROPERTY OF SOME SPICES CORIANDER AND FENUGREEK

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ABSTRACT

The present study was to investigate to Physiochemical and protein estimation of Coriander and fenugreek. The Plant Materials were observed to analyse various physiochemical parameters like LOD, Total ash and extractive value and protein estimation were analysed by lowery method. All spices showed significant results of physiochemical and protein estimation. It was concluded that very useful in daily spices of health benefits and other biochemical and therapeutic activity.

KEYWORDS: Physiochemical, Coriander, Fenugreek, LOD, Total ash, Extractive Value.

INTRODUCTION

I have chosen some spices to work on. In this I will be doing physiological activity of various inorganic compounds present in the spices, as spices have valued for their medicinal, flavouring and aromatic qualities for centuries, the synthetic products of the modern age suppressed their importance, In the present time herbal products are considered as safe alternatives of synthetic drugs that are regarded unsafe to human as well environment. Some spices are-

Coriander

Coriander is an annual herb of Apiaceae or umbelliferae family. Seeds of coriander are pale brown in colour, medium in size and oval in shape.^[18,19] Its commercial value is based on its aroma, physical properties and chemical composition. The aroma and essence of coriander are important characteristic of essential oil contains by oil glands in the mericarp.

Fenugreek

Fenugreek is from Fabaceae family and its plant is around 2–3 feet (60–90 cm) tall. It has green leaves, small white flowers, and pods that contain small, golden-brown seeds.

MATERIALS AND METHOD

Loss on drying- LOD value was used to determined to the amount of water and volatile matters present in a sample when the sample is dried under specified conditions. 2gm of sample powder was transferred to weighed thin porcelain dish and Kept in oven at 105°C for 5 hours. Dish was cooled in desiccators and weighed. The dish again kept in oven for 30 min. Dish again cooled in desiccators and take weight. The loss in weight is calculated as percentage.

Formula,

Average = Differences of sample /Total no. of sample

% of LOD = Average x 100/ Weight of sample taken

Extractive value

Extractive values gives the idea about nature of active constituents present in the given plant material.

Alcohol Soluble Extractive (ASE) Value

Alcohol solvent was used for determination of extractive values. Weighed accurate 5g powder sample and transfer in 250 ml iodine flask. Add 100ml alcohol solvent. Provide continuous shaking for 6 hrs and leave for 18 hrs (maceration). After this extract was filtered by using What man filter paper no. 1 and weighted in thin porcelain dish, solvent was evaporated on water bath and residue was weighed. Percentage of extractive value (w/w) was determined.

Average = Differences of sample /Total no. of sample

% of ASE = Average x 500

Water Soluble Extractive (WSE) Value

Water soluble extractive value was determined using the procedure described for alcohol soluble extractive, except that water used for maceration or extraction procedure.

Ash value- The ash value is useful to determine the quality and purity of the drug. Ash contains inorganic radicals like phosphate, carbonates and silicates of sodium, potassium,

magnesium, calcium, etc. Different ash values such as total ash value and acid insoluble ash value was determined.

Total ash- 2 gm of powder leaf were taken in silica crucible (previously weighed). Material was incinerated with the help of the muffle furnace at 450°C, until vapors almost cease to evolve. Dish was heated until all carbon was burnt off. Dish was cooled, and percentage of total ash was calculated.

$$\text{Average} = \text{Differences of sample} / \text{Total no. of sample}$$

$$\% \text{ of total ash} = \text{Average} \times 100 / \text{Weight of sample taken}$$

Acid insoluble ash: Ash was boiled with 25 ml 5% hydrochloric acid for 5 minutes. Insoluble matter was collected in the ash less filter paper no. 42. It was washed with the hot water until neutral, ignited, cooled in a desiccators and weighted. Percentage of acid insoluble ash was calculated.

$$\text{Average} = \text{Differences of sample} / \text{Total no. of sample}$$

$$\% \text{ of acid insoluble ash} = \text{Average} \times 100 / \text{Weight of sample taken}$$

RESULTS AND DISCUSSION

After drying the collected samples physic-chemical identification has been done with following parameters:

Test	LOD	Total Ash		Extractive Value	
Sample		Water Soluble	Acid Insoluble	Water	methanol
Coriander	2.5	6.5	6.2	47.33	35.83
Fenugreek	5.05	1.9	7.15	90.83	61.33

Loss on Drying- LOD value of coriander and fenugreek are 8.8 and 5.05 respectively. LOD value of sample is very less which is good for samples. If moisture contents are less in samples it controls the various infections such as fungal, yeast growth and bacterial infection.

Total Ash Value: Total ash value tells about impurities present in samples other than phytochemicals. Total ash value is an important parameter to check the purity of samples. Total ash can be acid soluble or acid insoluble. Total ash contains calcium, potassium, carbonates, silicates and phosphates are acid soluble impurities which can be removed by using acids but some part of ash remains insoluble in acid which is called insoluble ash.

Extractive value

We have determined solubility or extractive value of selected samples by water and methanol. This physicochemical phenomenon plays important role in determining the presence and absence of phytochemical in extracts of selected samples. respectively. Water extracts has more extractive value comparatively methanolic extracts except cardamom extracts.

CONCLUSION

Coriandrum sativum L. seeds, we have decided their physicochemical qualities which are to a great extent of a similar request as those found in the writing.

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