

Investigation of Proximate Screening on Leaves of *Heteropogon contortus* (L.) by Green Method

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ABSTRACT

Heteropogon contortus (L.), a perennial tussock grass belonging to the Poaceae family, has a somewhat erratic growth habit. It has a 1.5 meter vertical reach. The leaves and stems are usually hairless or have a few stray hairs, and they have a green to blue-green colour.

It is likely that a variety of cooperative mechanisms mediate the antibacterial activity. There is a good chance that *Heteropogon contortus* (L.) will be used to create a safe and efficient antibacterial agent. The present investigation aims to explore the existence of proximate parameters and measure the amounts of moisture and ash content as well as total ash value and solubilities in hot water, cold water, 1% NaOH (aq), 1% HCl (aq) and 1% CH₃COOH (aq) were found quantitatively.

KEY WORDS: Proximate analysis, Leaves, *Heteropogon contortus* (L.)

Date of Submission: 24-07-2024

Date of acceptance: 07-08-2024

I. INTRODUCTION

Natural products derived from medicinal plants represent a novel source of antimicrobial agents [1]. When used to treat infectious diseases they have the power to significantly modify many of the side effects that are commonly connected to synthetic antimicrobial agents [2–3]. Raw drugs with a range of medicinal properties are taken from different parts of plants, such as the fruit, stem, root, twigs, flower and modified plant organs.

[4]. While hundreds of species have been screened for antimicrobial activity, only a small percentage of plant species have been subjected to phytochemical testing. In light of those gaps in the body of existing literature, this study investigated the phytochemical profile and antibacterial activity of the medicinal plant *Heteropogon contortus* (L.) [5]. Perennial grass *H. contortus* (L.) belongs to the Poaceae family. Its thin stems are densely tufted and compressed toward the base [6]. Stems branched above ground during flowering. With linear blades that are 3-30 cm long and 2-8 mm wide, a sharp tip narrowing and laterally compressed basal sheaths, this plant has green to grey-green leaves [7]. Also known as bellary grass, black spear grass, and spear grass, this grass is native to Southern Asia, Southern Africa and Northern Australia [8-10]. Numerous ailments, such as asthma, bronchial infections, jaundice, toothaches, fever, dysentery, muscular aches and scorpion stings have been treated with the plant [11-13]. The roots of the plant have stimulant and diuretic qualities. Thus, as we have already discussed, this plant has many advantages. Examining the phytochemical composition of the leaves of *Heteropogon contortus* (L.) is highly interesting in light of all these facts.

II. MATERIALS AND EXPERIMENTAL METHODS

COLLECTION OF SAMPLES

Through current work, freshly prepared solutions are used. All chemicals of AR grade are employed in the current analysis. Prior to use, the solvents underwent standard method purification. The plant *Heteropogon contortus* (L.) sample was collected from Wazzar village; 08 km away from sub district headquarter of Achalpur of Maharashtra state of India. The plant leaves were chopped, dried in the shade, and then the dried leaves were put in a mortar and pestle to be ground into a fine powder [14]. Several phytochemical analyses are conducted using this fine powder.

PROXIMATE ANALYSIS

The determination 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 methods [15]. Solubility of the sample was checked in cold water, hot water and 1 percent NaOH(aq), HCl(aq), CH₃COOH(aq) solution. Percentage of moisture and ash contents and acid insoluble ash are determined by using following formula,

$$\text{Moisture Content} = \frac{\text{Weight of sample taken} - \text{Weight of sample after treatment}}{\text{Weight of sample taken}} \times 100$$

Loss of weight of sample

while, Percentage of solubility is determined by using following formula,
% of Solubility = (loss of weight of sample) / (weight of sample taken) × 100

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

Table No. 1

Sr.No	Proximate Parameters	Amount of sample taken (in grams)	%
1	Moisture content	1	27.78
2	Total ash content	1	13.48
3	Acid insoluble ash value	1	10.12
4	Coldwater solubility	1	64.4
5	Hot water solubility	1	50.4
6	NaOH(aq) solubility	1	51.76
7	HCl(aq) solubility	1	54.57
8	CH ₃ COOH (aq) solubility	1	14.21

III. RESULT AND DISCUSSION

The moisture content in any part of plant gives information for an activity of water-soluble enzymes and coenzymes required for the metabolic activities of that plant and it is observed from **Table No.1** that, total moisture content in leaves of was found to be 27.78% which is good for metabolic activities in the plant growth and development of the plant. It was found that the total ash content obtained from dry leaves is 13.48% and acid insoluble ash value is 10.12 % which are good and these proximate parameters of plant organs are useful for the determination of the mineral contents. Cold water solubility and hot water solubility were found to be 64.4% and 50.4% respectively. These proximate parameters will gave 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 51.76% and 14.21% respectively, these proximate parameters gave information regarding basic organic components present in the sample and NaOH solubility was found to be 54.57% which gave information regarding acidic organic components present in the sample.

IV. CONCLUSION

Results attained throughout the proximate composition were good and it can be accomplished that, in leaves of *Heteropogon contortus* (L.) contain good proximate parameters. Also, the physicochemical as well as physiological and anatomical activities of are in natural form *Heteropogon contortus* (L.) and can be used for medicinal purpose.

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