

# Zinc and Iron Content of Wild Nutritive Plants of Poladpur

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**Abstract:** Wild plants are abundant in minerals vitamins and essential oils. *Blumea lacera* and *Cassia obtusifolia* both the plants are well known and used commonly in food preparation and as vegetable respectively by all local people. This experiment was carried out to estimate Zinc and Iron content from leaves and roots of these plants by Atomic Absorption Spectroscopy (AAS). Proximate analysis revealed that in *C. obtusifolia* leaves and roots Zn concentration is appreciable while Fe concentration is optimum in leaves and root of *B.lacera*.

**Keywords:** *Blumea lacera*, *Cassia obtusifolia*, Zinc, Iron.

## I. INTRODUCTION

Diversity is observed in Konkan region of Maharashtra. Some of the wild plants play very important role in their daily, seasonal and traditional food intake. *Blumea Lacera* and *Cassia obtusifolia* are wild plants. *B. lacera* found throughout year. While, *C. obtusifolia* occurs during rainy season and used as wild vegetable by most of the local people. It is consumed and liked by people in Konkan because of its particular taste and nutritional value value [1]. Both these plants grow on waste land and have nutritional component. These are earning sources of tribal people in specific seasons.

*Blumea lacera* belongs to family Asteraceae commonly known Bhamuruda. Though it is not a part of daily food consumption, it is used in 'Popati'. Popati is ancient traditional food preparation technique in this area [2]. *B. lacera* has specific unique aroma and also contains essential oils [3]. As it adds wonderful taste to Popati it is used as essential component in preparation of the same.

*Cassia obtusifolia* is member of family Leguminosae and sub family Caesalpinoideae and locally known as Takala. These two plants are important part of konkan food culture. So, present study gives emphasis on some of their nutritional value. Zn and Fe are required for healthy body functioning [4]. Zn and Fe are essential nutrient minerals. Zn plays important role in immune system [5,6,7]. Fe essential for oxygen transport, DNA synthesis. In presents investigation Zn and Fe contents from leaves and roots of both *B. lacera* and *C. obtusifolia* is estimated.

## II. MATERIALS AND METHODS

The plants *Blumea lacera* and *Cassia obtusifolia* grown naturally along roadsides were collected. The plants were brought into the laboratory and washed thoroughly first with tap water and blotted to surface drying. Leaves and roots were separated from fresh plant. Then material was kept in oven for drying. The dried samples were kept dry airtight container and used for analysis.

Mineral constituents Zn and Fe from leaves and root were estimated from oven dried plant material. 0.5 g oven dried plant material was acid digested following the standard method [8]. Plant material was taken in a 150 ml clean borosil beaker and to that 10 ml concentrated HNO<sub>3</sub> were added. It was covered with watch glass and kept for an hour till the primary reactions subsided. It was then heated on hot plate till all the material was completely dissolved. It was allowed to cool to room temperature and then 10 ml of Perchloric acid (60%) were added to it and mixed thoroughly. It was then heated strongly on the hot plate until the solution became colorless and reduced to about 2-3 ml. While heating, the solution was not allowed to dry. After cooling, it was transferred quantitatively to 100 ml capacity volumetric flask, diluted to 100 ml with distilled water and kept overnight. Next day it was filtered through Whatman No. 44 filter paper. The filtrate was stored properly and used for analysis of inorganic constituents.

### III. RESULTS AND DISCUSSIONS

Minerals are necessary for healthy body functioning. They have role in various metabolic processes. Zn and Fe are one of important minerals required by body.

**Table 1:** Minerals constituents (mg 1000<sup>-1</sup> g dry wt.) in leaves and roots of *Blumea lacera* and *Cassia obtusifolia*

Plant Name	Plant part	Zn	Fe
<i>Blumea lacera</i>	Leaves	5.24	19.29
	Roots	0.75	8.96
<i>Cassia obtusifolia</i>	Leaves	45.2	10.2
	Roots	18.8	5.6

#### 3.1 Zinc (Zn)

Zn is also essential mineral in more than 300 metallo enzymes [9]. It is useful for wound healing [10] anti-aging property [11,12,13,14] also help in fighting against various diseases like cancer [15] liver disorder etc. [16,17,18].

Table 1 represents concentration of Zn in leaves and roots of *B. lacera* and *C. obtusifolia*. Result shows that concentration of zinc is greater in leaves and roots *C. obtusifolia* than that of *B.lacera*. Spinach leaves contains 1338.79 µg/100 g i.e.,13.3879 mg/Kg of Zn [19]. *C. obtusifolia* shows much higher Zn content as compare to spinach and *B. lacera* has lower Zn content than spinach.

#### 3.2 Iron (Fe)

Fe is essential for all living organisms [20, 21]. It is required by body for oxygen transport proteins particularly in hemoglobin and some part in muscle tissue called as myoglobin. It participates in DNA synthesis and electron transport metabolism [22, 23].

Table 1 represents concentration of Fe in leaves and roots of *B. lacera* and *C. obtusifolia*. Result shows that Iron content is higher in leaves and roots of *B. lacera* than that of *C. obtusifolia*. But comparing with other vegetables like amaranth (*Amaranthus flavus*), fenugreek (*Trigonella foenumgraecum*) colocasia (*Colocasia esculenta*) concentration of Fe is observed much less in *B. lacera* and *C. obtusifolia* [24]

### IV. CONCLUSION

*B. lacera* and *C. obtusifolia* contains Zn and Fe which are essential constituents for human beings. Defeciciency of these minerals may cause adverse effects on our body. Present research tells that *C. obtusifolia* contain appreciable amount of Zn which is much higher than the vegetables which we consume commonly. So, this wild vegetable is a part of healthy diet. Fe content of *B. lacera* is optimum and it may add iron into food during Popati preparation.

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