

**EXPLORATION AND PROXIMATE ANALYSIS OF SOME SELECTED WILD  
VEGETABLES USED BY THE TRIBES KALSUBAI-  
HARISHCHANDRAGARH WILDLIFE SANCTUARY**

**Dr.SangitaDandwate**

*SMBST College, Sangamner, Ahmednagar.422605*

**ABSTRACT**

A total of 22 plant species used as a vegetable were reported from the study area. The four major life forms were climbers, herbs, shrubs and trees. Herb makes up the highest proportion of the edible species followed by trees, shrubs and climbers. The plants investigated *Celosia argentea L.*, *Clerodendrum serratum L.*, and *Alternanthera sessalis*, The proximate parameters like protein, fat, fiber carbohydrates, moisture contents, ash, energy values were obtained using AOAC methods. Macronutrients (Ca, Mg, Na, and K) and micronutrients (Fe, Zn, Mn, Co, Cr, Pb) were analyzed by Atomic absorption spectrophotometer.

**Keywords:** - Kalsubai- Harishchandragarh wildlife sanctuary, wild vegetable,

## INTRODUCTION

Wild edible plants are those plants that are collected from uncultivated resources for human consumption<sup>1,2</sup>. These plants are bestowed with one or more parts that can be used for nutrition if gathered at the proper growth stage and prepared appropriately<sup>3</sup>. The collection of wild edible plants and their use is still practiced in many parts of the world even among agricultural societies that rely mainly on domesticated plants and animals for their diet. In fact gathering wild plants is an internal part of livelihood strategies throughout the world<sup>4</sup>. Furthermore wild edible plants are an important source of vegetables, fruits, tubers and nuts which are relevant for many people in ensuring food security and balancing the nutritional value of diets (Heywood, 2011). As an example, consumption of wild leafy vegetables as a source of micronutrients in many tropical areas is significant in small children's diet to ensure normal growth and intellectual development<sup>5</sup>.

The Western Ghats of Maharashtra covers an area of 52,000 km<sup>26</sup> Ahmednagar district is one of the ten district of Western Ghats region. This district covers an area of 17,035km<sup>2</sup> and lies between 73°9' to 75°5' E and 18°2' to 19°9' N. The area under study, hamlets/villages and the market places of Akoletahasil that run parallel to the western coast, called Sahyadris. The area is occupied by large numbers of tribe's viz. Mahadev-koli, Thakars, Bhils and Ramoshies. Their major occupation is agriculture. Rice, black sesame and Finger millet are some of the crops they cultivate. The forest resource plays an important role in the livelihood of these communities. Significant work on the field of ethnobotany has been done in past years in the study area<sup>7</sup> Although much has documented on the ethnomedicinal and floristic aspects of plants of this district, however there is not even a single concrete report about plants used as vegetables. Keeping this in view, the present study was conducted as the first ever attempt from the region to explore and identify the vegetables used by the people living in study area.

## MATERIALS AND METHODS

**Plants collection:** The studies were undertaken on seven wild edible vegetables *Chlorophytum tuberosum*, *Caralluma ascendens*, *Cassia tora*, *Arisaema murrayi*, *Celosia argentea*, *Clerodendrum serratum*, *Smithia purpurea*. Different field visits will be undertaken

in different seasons along with tribal people for collection wild vegetables. The choice of plant parts were leaves stems, flowers, and fruits which were collected from Kalsubai-Harishchandragarh wildlife sanctuary. Different field visits will be undertaken in different seasons along with tribal people for collection wild vegetables. These plants were identified and classified with expert using floras; moreover photographs of the plant will be taken

**Sample Preparation:** Out of these one wild vegetable were analyzed. The sample were washed under running water and blotted dry. The moisture content of the leaf sample was determine at 60°C (AOAC, 1990) the dried matter obtain was ground to a fine powder and store at 5°C in air tight containers prior to further analysis.

**Proximate analysis:** The proximate analyses (moisture, ash, crude fats, proteins and carbohydrates) of the sample were determined. The moisture and ash determined using weight difference method. All the proximate values were reported in % (AOAC 1990)

**Micronutrient analysis:** The micronutrients contents namely Na, K, Ca, Mg, Mn, Fe, Co and P of the selected vegetable species were done using atomic absorption photometer.

**Statistical Analysis:** Each experiment was repeated three times. The results were presented with their means, standard deviation. Table 1 shows proximate analysis of selected wild vegetables.

**Table 1: Proximate analysis of selected wild vegetables**

Sr.No	Parameter	<i>Celosia argentea L.</i>
1	Moisture (%)	66.6±0.3
2	Ash content (%)	18.16±0.66
3	Energy value (Kcal/100g)	301.66±14.50
4	Protein (%)	22.3±0.55
5	Carbohydrate (%)	54.26±3.47
6	Crude Fiber (%)	14.33±0.55
7	Fat (%)	0.11±0.01

**Table 2: Micro and macro nutrient composition in mg/100 gram**

Sr.No	Parameter (mg/100g)	<i>Celosia argentea L</i> (Kurdu)
1	Na	1040.33±34.99
2	K	1877.33±15.94
3	Ca	1617±18.52
4	Mg	2269.33±45.65
5	Mn	21.6±0.62
6	Fe	483.33±16.62
7	Co	0.43±0.058
8	P	176.33±13.65

## RESULTS AND DISCUSSION

The result of proximate analysis shows variant concentration of biochemicals and other contents. Proximate analysis showed that *Celosia argentea* is rich in the amount of protein with composition of 22.3% and mean value for carbohydrates (54.26%) in *Celosia argentea* (Table 1). Results indicated that high concentrations of calcium (Ca), Magnesium (Mg) and sodium (Na) have been found in *Celosia argentea*. (Table 2) The identified Potassium (k) in the region species i.e. 1877.33 mg/100gm (*Celosia argentea*) Highest concentration of phosphorous were found.

## CONCLUSION

Such type of work gives the data of wild vegetables used by tribes from the study area. It will be good practice for health and helpful for researchers and students. It will be documentary of traditional knowledge on diet for future generation.

## REFERENCES

1. Heywood VH. (2011). Ethnopharmacology, food production, nutrition and biodiversity conservation: Towards a sustainable future for indigenous peoples. *Journal of Ethnopharmacology*, 137(1), 1–15.
2. Ghorbani A, Langenberger G, Sauerborn J. (2012). A comparison of the wild food plant use knowledge of ethnic minorities in Naban River Watershed National Nature Reserve, Yunnan, SW China. *Journal of Ethnobiology and Ethnomedicine*, 8, 17.
3. Kallas J. (2010). *Edible wild plants: Wild foods from dirt to plate*. Gibbs Smith publication, Lyton, Utah.
4. Cunningham A. (2001). *Applied ethnobotany: People, wild plant use and conservation*. Earthscan Publication, London.

- 5.FAO.( 2010). The state of food insecurity in the world: addressing food insecurity in protracted crises. Food and Agriculture Organization of the United Nations, Rome.
- 6.Natarajan B, Paulsen BS. (2000). An Ethnopharmacological Study from Thane District, Maharashtra, India: Traditional Knowledge Compared With Modern Biological Science. *Pharmaceutical Biology*, 38, 139–151.
- 7.Petkar AS, Wabale AS, Shinde MC.(2002). Some Ethnomedicinal Plants in the tribal areas of Akole and Sangamner talukas of Ahmednagar District (M.S) *Journal of Indian Botanical Society*, 81, 213-215.
- 8.A.O.A.C. 1990-official method of analysis, association of analytical chemists.15 th ed.Washington D.C. USA.1121-1150.

