

## Comparative study of availability of vitamins from *Leea macrophylla* Roxb

K.D. JADHAO<sup>1</sup>, M.P. WADEKAR<sup>2</sup> and M.S. MAHALKAR<sup>1</sup>

<sup>1</sup>Department of Botany, <sup>2</sup>Department of Chemistry,  
Government Vidarbha Institute of Science and Humanities, Amravati - 444 604 (India).

(Received: July 10, 2009; Accepted: September 03, 2009)

### ABSTRACT

*Leea macrophylla* Roxb is a wild edible plant. The plant material was collected from Melghat (Maharashtra) for analysis of moisture and vitamin content. Vitamins are very essential nutrient for human life and whole plant of *Leea macrophylla* is helpful in nutritional point of view. It also fulfill our requirement of food. The dried powder of *L. macrophylla*. root with clarified butter was prescribed in morning as age sustainer. Leaves of the plant used as vegetable by tribal people. Present study deals with the study of availability of vitamin form *Leea macrophylla* Roxb. Fresh as well as shade dried material was used for estimation of vitamin B<sub>1</sub> (Thiamine), Vitamin B<sub>2</sub> (Riboflavin), vitamin C (Ascorbic acid) and vitamin-B<sub>12</sub>.

**Key words:** *Leea macrophylla* Roxb, fluorometer, spectrophotometer and vitamins.

### INTRODUCTION

Nutrition is the provision for the cells of organism to support life. Many common health problems can be prevented or alleviated with good nutrition. Some nutrients are required on a regular basis, while others are needed less frequently. Poor health can be caused by an imbalance of nutrients, whether an excess or a deficiency. Availability of vitamin nutrients in regular diet is very important. Vitamins are required to all living organisms including human and their consumption through diet fulfill the requirements of body<sup>1</sup>. Tribals and rural people know and also used number of wild edible plant. If we used these plant in daily diet may help to decrease the disorders caused by nutritional deficiencies. Deficiency of vitamins still occur in developed countries, it is due to poor nutritional diet in developing and poorly developed countries. Some of the deficiencies are induced by diseases or drugs<sup>2</sup>. To maintain health, vitamins are supplied by beans and fruits in various forms. Vegetables also supply various types of vitamins together and

are consider as an excellent natural food. This study was undertaken to estimate vitamins from *L. macrophylla*.

### MATERIALS AND METHODS

*Leea macrophylla* was collected from Melghat region during 2008-09. Particularly plant material collected from chikhaldara in Amravati district, where the temperature noted 25°C at height 822 feet. After the complete identification, description and noting of significance of each plant was taken for investigation. Fresh as well as shade dried plant material was used for estimation of vitamins by using spectrophotometer and fluorometer<sup>3</sup>.

### Moisture contents

The moisture content is the amount of water present in plant material. The moisture percentage in material was determined by simple method. 10g of material was shade dried and weighed after drying. The difference in weight of



fresh sample taken minus dry matter gives percentage of moisture as given in table I.

$$\% \text{ Moisture content} = \left[ \frac{\text{Loss in weight}}{\text{Fresh weight of sample taken}} \right] \times 100$$

## RESULTS AND DISCUSSION

Good health is a product of heredity, environment and nutrition. The human body is balance system, if it does not receive enough or if it receives too much of a nutrient, its balance can be disturbed<sup>4</sup>. Sincere efforts were made to estimate vitamins from *L. macrophylla*.

The values of vitamins obtained were converted into per 100g fresh weighed sample. A daily requirements of thiamine in infants 0.5 mg, in children 0.7 - 1.2 mg in adult male and female 1-1.1mg<sup>5</sup>.

Thiamine was noted in fresh leaves was 354mg/100 gm (Table 2) and in fresh root was 51 mg/100 gm (Table 3) while dry leaves and root contain 9.9mg/100g and 25mg/100g thiamine respectively.

The daily requirement of riboflavin is 1.6 mg for the adult male and 1.2 mg for the female. Riboflavin was found in fresh leaves 0.026 mg/100

**Table 1: Moisture Content**

Plant	Plant Material	Fresh weight	Dry weight	Moisture in percentage
<i>Leea macrophylla</i> Roxb	Leaves	10g	2.51 g	74.9%
	Root	10g	3.12g	68.8%

gm and in root 0.5 mg/ 100 gm (Table I I) . In dry leaves and root it was found to be 0.21 mg / 100 gm and 0.157 mg. / 100 gm (Table 3).

The Recommended dietary allowance of ascorbic acid is 90mg per day. Vitamin C was noted 5240 mg / 100 g in fresh leaves and 620mg/100g in root (Table 2). Also it found 1140 mg/100 g in dry leaves and 220mg/100g in dry root (Table 3).

The daily requirement of vitamin-B<sub>12</sub> is 2 μ

gm in adult<sup>6</sup>. Fresh leaves and root contain 0.0002mg/100g and 0.035/100g where as dry leaves and root contain 0.0006mg/100g and 0.0003/100g vitamin –B<sub>12</sub> respectively.

*L. macrophylla* contain highest amount of vitamin C than the other vitamins. Vitamin C is maintaining collagen protein necessary for the formation of connective tissue in skin, ligaments and bones. It protect the thiamine, riboflavin from oxidation. Thus *Leea macrophylla* plays vital role in nutrition point of view.

## REFERENCES

1. K.M. Nadkarni, *Indian material medica*. Popular prakashan pvt. Ltd., 415 (2005)
2. N.A.Boon, N.R. Colledge, B.R. Walkor, *Principles and practice of medicines*. 20<sup>th</sup> edition, Edinburg London new york on ford philadelephia st. louis Sydney toronto, 121-127 (2006).
3. S.R. Thimmaiah, *Standard methods of biochemical analysis*. kalyani publishers, 273-274; 279-280 (1990).
4. J.L. Dunne, *Nutrition alwance*. Mc GRAW HIL.L, 44-45 (1990).
5. A.C. Deb , *Fundamentals of Biochemistry*. A Sen New Central book agency Calcutta, 431, 437 (1990).
6. H.Singh and V.K.Kapoor, *Medical and Pharmaceutical Chemistry*. Vallabh Prakashan SU-211,Pitampura, Delhi 532-566 (2001).