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Short communication

A NEW NATURAL SOURCE FOR VITAMIN-C

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ABSTRACT: Vitamins are essential constituents for growth of the plant and animal body. Vitamin C plays an important role among the Vitamins. Vitamin C is needed in abundant quantity for the blood purification and the development of teeth, bones and gums. It also keeps the whole body in healthy condition. The major source of vitamin C is from plants like Orange, Lemon, Apple, Banana, Grapes, Cabbage, Potato, Lettuce and Brinjal. In this present communication the ethano botanical information obtained from the Kannikar tribes regarding the medicinal and other uses of *Begonia floccifera* and *B. malabarica* were recorded. The phytochemical analysis were carried out and found to contain Vitamin C in both the plants. As far as we are aware this is the first report regarding the presence of Vitamin C in the leaves. Antibacterial activity of the extracts of the plants was also evaluated.

Keywords: Natural source, Vitamins

INTRODUCTION

Kanikkars are one of the most primitive hill tribes of South India. They occupy the slopes of the Western Ghats in Tamil Nadu and Kerala. The word Kanikkars means hereditary proprietor of land. They were once “Lords” the forest and practiced migratory cultivation [5]. They lived by digging wild yams and tubers, fruits and resins. Deprived of modern medicinal amenities, these Kanikkars solely depend on plants for their medicine and food. They use several plants in their day today life [6,8]. Among them the medicinal and other uses of *Begonia floccifera* and *B. malabarica* were recorded from the Kannikkar’s of Kalakkadu Mundathurai Tiger Reserve Forest area of Tirunelveli district, Tamil Nadu .

***Begonia floccifera* Bedd. (BEGONIACEAE)**

“Kalthamarai” is the tribal name of this plant. It is usually found in the Western Ghats. Hills of Travancore and Tirunelveli district up to an attitude of 3000 ft [1]. The tribes mostly collect this plant from the forest area. It is a large herb with wooly leaves having many rose coloured flowered scapes. The leaves are orbicular broader than the length and distinctly dentate with white tomentose beneath [4]. Normally it is found near to the water spry area along the waterfalls in the Western Ghats region.

The Kanikkars tribes use the fresh leaves. They collect the leaves, rubbed it in a cloth to remove the tomentose hairs then chewed and swallow it for shallowness, loss of appetite, to increase the body vigour, to increase the body weight and fleeting pain in the limbs and joints. The juice of the fresh leaves is given to the young babies for proper development of teeth and bone. It also arrests the gum and teeth diseases. The juice of the leaves mixed with honey is taken in as a tonic and they believe that is having the rejuvenation capacity.

***Begonia malabarica* Lamk**

The tribal name of the plant is “Narayana Sanjeevi”. The name itself indicates that this herb is having miraculous powers. This plant is commonly found in Nilgiris, Anamalais and Pulney hills upto an attitude of 6000 ft. in the moist area [4]. They named this plant after Lord Vishnu because they believe that the consumption of the plant juice gives high disease resistance power and protect the body like the Lord protect the living being in the Universe.

It is a large herbaceous, profusely branching succulent plant with cluster of rose coloured flowers and having large capsule with wings.

The tribes use this plant juice along with honey for blood purification. It is given in for fever to reduce the body temperature and it is taken as a general health tonic. The leaf juice mixed with ginger is taken for treating anemia.

MATERIALS AND METHODS

Begonia floccifera was collected from the Muduparai waterfalls of Servallar region. *Begonia malabarica* was collected from Karaiyar region of KMTR forest. The plants were shade dried, powdered and aqueous extract was made.

In order to substantiate the ethano botanical studies the leaf extracts of *Begonia floccifera* and *B. malabarica* were subjected to simple phytochemical analysis. The Vitamin C content was estimated by Titrimetry method.

The extracts of the above two plants were also evaluated for antibacterial activity against pathogenic strains of Gram positive *Staphylococcus aureus*, *Staphylococcus epidermidis* and Gram negative *Pseudomonas aeruginosa*, *Salmonella typhimurium* bacteria using disc diffusion method. The antibacterial activity showing zone of inhibition was compared with the standard gentamycin as positive control with 100% inhibition.

RESULTS

The plant sample were analysed for Vitamin C content. The Vitamin C content of *Begonia floccifera* was 1.62 mg/g and *Begonia malabarica* was 1.42 mg/g on fresh weight basis.

The antibacterial activity of leaf aqueous extract of *Begonia floccifera* and *Begonia malabarica* was given in Table 1 & Table 2.

Table-1: Antibacterial activity of Begonia floccifera plant extract

S.No	Bacterial Strains	Inhibition Zone(mm)	Standard (Gentamycin)Antibiotic Zone(mm)	Percentage of Inhibition
I	<i>Gram positive organism</i>			
1	<i>Staphylococcus aureus</i>	17.2	21	82
2	<i>Staphylococcus epidermidis</i>	13.7	18	76
II	<i>Gram negative organism</i>			
1	<i>Pseudomonas aeruginosa</i>	20.3	27	75
2	<i>Salmonella typhimurium</i>	24.8	31	80

Table -2 : Antibacterial activity of Begonia malabarica plant extract

S.No	Bacterial Strains	Inhibition Zone(mm)	Standard (Gentamycin)Antibiotic Zone(mm)	Percentage of Inhibition
I	<i>Gram positive organism</i>			
1	<i>Staphylococcus aureus</i>	16.4	21	78
2	<i>Staphylococcus epidermidis</i>	14.4	18	80
II	<i>Gram negative organism</i>			
3	<i>Pseudomonas aeruginosa</i>	21.3	27	79
4	<i>Salmonella typhimurium</i>	23.3	31	75

DISCUSSION

The ethno botanical studies, phytochemical analysis and the antibacterial evaluation showed that the two plants contain Vitamin C which could be exploited as a potential natural source. The ethanobotanical studies coincide with the earlier reports [2, 3, 7, 9, 11, and 13]. It also revealed many new uses such as health tonic, arthritis, scurvy, teeth and bone diseases, blood purifier and improves general health.

The development of antibacterial resistance to presently available antibiotics has necessitated to the search for new antibiotic agents [10]. As these above plants showed more than 75% inhibition to the pathogenic bacteria. It also coincide with the finding of earlier report [12]. This could be used as an effective antibacterial medicine. On the basis of the above investigations the above two plants have great potential as medicine, as a natural source for Vitamin C and very good antibacterial agent.

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