



ROLE OF BOTANIC GARDENS IN CONSERVING EDIBLE PLANTS

¹Jaya Vijayan, ¹Ramachandran VS and ²Binu Thomas*

¹Department of Botany, School of Life Sciences, Bharathiar University, Coimbatore - 641 046, Tamil Nadu, India.

²PG Department of Botany, Deva Matha College, Kuravilangad, Kottayam - 686 633, Kerala, India.

Corresponding Author

Article Info

Binu Thomas

Email :-binuthomasct@gmail.com

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ABSTRACT

The present paper highlights the role of Botanic Gardens for conserving such valuable edible potential plants like *Berberis tinctoria* Leschen., *Elaeagnus conferta* Roxb., *Mahonia leschenaultia* (Wall. ex Wight & Arn.) Takeda ex Gamble, *Morus alba* L., *Syzygium cumini* (L.) Skeels, *Syzygium densiflorum* Wall. ex Wight & Arn. Prodr., *Syzygium tamilnadensis* Rathkr. & Chithra and *Vaccinium leschenaultia* Wight.

Keywords: Botanic Gardens, Conservation, Edible plants, Kerala.

INTRODUCTION

The fruits are nature's gift to mankind. These wild fruits are chief source of vitamins, minerals and proteins. These constituents are essential for normal physiological well-being and help in maintaining healthy state through development of resistance against pathogens [1,2]. Wild edible plants (WEP) provide staple food for indigenous people, serve as complementary food for non-indigenous people and offer an alternative source of income [3,4]. These wild edible plants not only provide food but also make significant contribution to the population's nutrition throughout the year [5-8].

Sometimes the nutritional value of traditional wild plants is higher than several known common vegetables and fruits [9,10]. In addition to providing food directly, it also provides an opportunity for cash generation. Many plants used in industrialized countries today were originally identified and developed through indigenous knowledge [11]. Botanic gardens have traditionally focused on *ex-situ* conservation, but one ultimate objective

of *ex-situ* conservation is to support species survival in the wild by providing genetic material to repair and recreate damaged natural ecosystems [12].

MATERIALS AND METHODS

The Government Botanic garden, Udthagamandalam (Ooty) was established in 1847. It is lies on the lower slopes of Doddabetta peak at 11°24'08.7" N and 76°44'12.2" E. It is maintained by the Tamil Nadu Horticulture Department. It ascends the slopes of the hill at an elevation of 2250–2500 meter above Mean Sea Level. The garden enjoys a temperate climate, with an average rainfall of 140 cm, most of which is received during South-West monsoon. The maximum and minimum temperatures are 28 °C and 0 °C respectively [13]. A field survey has been carried out during 2012 -2013, in different seasons to document edible plant resources which are conserved in the Govt. botanic garden Ooty. The correct nomenclature of such plants was analyzed with the help of available floras and literature [14]. The collected plant specimens were processed for herbarium preservation following the standard herbarium technique [15]. The voucher specimens were kept in the herbaria of department of botany, Bharathiar University for future reference.

RESULTS AND DISCUSSION

The present study resulted in the documentation of 8 edible fruit yielding plants from the Government Botanic garden, Udthagamandalam (Ooty), Tamil Nadu. These are *Berberis tinctoria* Leschen., *Elaeagnus conferta* Roxb., *Mahonia leschenaultia* (Wall. ex Wight & Arn.) Takeda ex Gamble, *Morus alba* L., *Syzygium cumini* (L.) Prodr., *Syzygium tamilnadensis* Rathkr. & Chithra and



Vaccinium leschenaultia Wight (Pl. 1&2); (Table-1). Among these most of them are trees (5 Nos.) and rest are shrubs (3 Nos.). The fruits of all these plants are eaten as raw form. The species of the *Syzygium* like *Syzygium cumini* (L.) Skeels, *Syzygium densiflorum* Wall. ex Wight & Arn. Prodr. and *Syzygium tamilnadensis* Rathkr. &

Chithra also possess both nutritional and medicinal values. This was also discussed by earlier authors in their studies [16,17]. More over the plants like *Morus alba* L. and *Syzygium cumini* (L.) Skeels are also cultivated for its nutritional values.

Table 1. List of Edible Plants in the Government Botanic garden, Ooty

SI No.	Botanical Name	Family	Habit	Edible part
1.	<i>Berberis tinctoria</i> Leschen.	Berberidaceae	Shrub	Fruits
2.	<i>Elaeagnus conferta</i> Roxb.	Elaeagnaceae	Shrub	Fruits
3.	<i>Mahonia leschenaultii</i> (Wall. ex Wight & Arn.) Takeda ex Gamble	Berberidaceae	Tree	Fruits
4.	<i>Morus alba</i> L.	Moraceae	Shrub	Fruits
5.	<i>Syzygium cumini</i> (L.) Skeels	Myrtaceae	Tree	Fruits
6.	<i>Syzygium densiflorum</i> Wall. ex Wight & Arn. Prodr.	Myrtaceae	Tree	Fruits
7.	<i>Syzygium tamilnadensis</i> Rathkr. & Chithra	Myrtaceae	Tree	Fruits
8.	<i>Vaccinium leschenaultia</i> Wight	Vacciniaceae	Tree	Fruits

Plate-1



A. *Berberis tinctoria* Leschen.



B. *Elaeagnus conferta* Roxb.



C. *Mahonia leschenaultii* Takeda ex Gamble.



D. *Morus alba* L.

Plate-2



A. *Syzygium cumini* (L.) Skeels



B. *Syzygium densiflorum* Wall. ex Wight & Arn.



C. *Syzygium tamilnadensis* Rathkr. & Chithra



D. *Vaccinium leschenaultia* Wight

CONCLUSION

The present paper highlights role of Botanic Gardens for conserving such valuable edible potential plants. The major aim of the Botanic Garden is the *ex-situ* conservation of both wild and native floristic elements in which various ecological and economic uses. Moreover

Botanic gardens are also maintaining the plants from various geographical region of the country. Thereby it may help the scientists and researchers in the field of plant science to understand more about diverse and precious floristic elements in an around the country.

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