International Journal of
Life Sciences
International Peer Reviewed Open Access Refereed Journal

Int. J. of Life Sciences, 2020; 8 (2):449-452
ISSN:2320-7817(p) | 2320-964X(o)

Review Article Open Access

Scope for Commercial Cultivation of *Buchanania lanzan* Spreng. in Sindhudurg District – A Review

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Manuscript details:

Received: 28.04.2020
Accepted: 31.05.2020
Published: 30.06.2020

Cite this article as:
Desai Sanjay M (2020) Scope for Commercial Cultivation of *Buchanania lanzan* Spreng. in Sindhudurg District – A Review, *Int. J. of Life Sciences*, Volume 8(2): 449-452.

Available online on http://www.ijlsci.in
ISSN: 2320-964X (Online)
ISSN: 2320-7817 (Print)

ABSTRACT

Sindhudurg district in Konkan region is the southernmost district of the region, sharing its northern border with Ratnagiri district; southern border with Goa state; on eastern side it has Kolhapur district. Sindhudurg is abundant in biodiversity. The whole district has numerous medicinal and economically important plants either cultivated or wild. Many of the wild plants are the sources for many crude drugs and aromatics. Though the region is rich in its biodiversity, the efforts taken for the conservation as well as cultivation practices are inadequate. Current communication deals with one of such commercially important plant. Buchanania lanzan grows in wild in the entire district. The seeds show natural germination and formation of new plants. But due to less awareness and lack of efforts to conserve these plantlets has resulted in mortality of such natural regeneration. 'Charoli' seeds are commercially important and supply in the local market is through collection by local people from forest area. No adequate efforts for the commercial cultivation were tried till date in this region. There is an opportunity to cultivate the 'Charoli' plants in the area under study on commercial basis.

Key Words: *Buchanania*, Charoli, Sindhudurg, Cultivation

INTRODUCTION

Sindhudurg district is abundant in its biodiversity. It is better known for Mango and Cashew cultivation. The whole district has numerous medicinal and economically important plants either cultivated or wild. Many wild plants are the sources for many crude drugs, food, aromatics, flavouring agents etc. One such economically important plant found in this region is Charoli or Chironji (*Buchanania lanzan* Spreng.)

Sindhudurg district is situated in the southern most part of the Maharashtra state. It shares its northern border with Ratnagiri district, eastern border with Kolhapur district and Goa State is placed to the south. Though the region falls in the Sahyadri ranges and has very rich biodiversity, the efforts taken for the conservation of the same are inadequate.

Buchanania lanzan is distributed all over India, especially could be seen in dry areas like central parts of India Kumar *et al*. (2012) The soil requirement is not so stringent. The plant is a hardy, medium sized tree. It survives well in variety of soils like loamy, slight sandy or red soil Kamal *et al*. (2014). In Maharashtra it is distributed in Vidarbha region, places near Nagpur district, Ahemadnagar District Shinde-Patil (2017). It is also seen in Ratnagiri Shinde and Mhatre (2016) and Sindhudurg districts of Konkan region.

Even though the commercial cultivation of *Buchanania* has been taken up by many states such as Madhya Pradesh, Uttar Pradesh, Chhattisgarh Kamal *et al*. (2014), Malik *et al*. (2012), Anand and Khare (2014) Shukla and Solanki (2000) and even up to some extent in Nagpur region of Maharashtra State. The outcomes of these projects are awaited.

Plant Description and Scope for Cultivation:

The plant once upon a time was abundant in Indian subcontinent, but now it's been included in the IUCN Red List of Threatened Plants Status Rajput *et al*. (2018). The current communication is an effort to search for the scope or possibility to cultivate this plant on commercial basis in the area under study that is Sindhudurg District.

Buchanania tree is a medium sized, evergreen tree. It belongs to Family Anacardiaceae. It is a multipurpose tree, almost all the parts are useful and used by the local people in this region. Sharma *et al*. (2000)

Leaves – Can be used as fodder Ambasta (1986)
Wood – Can be used as Timber Ambasta (1986)
Roots– Can be used as Medicine Malik *et al*. (2012) Rajput *et al*. (2018)
Fruit– Are consumed by locals as well as grazing animals, Fruits also have mild laxative property Rajput *et al*. (2018).
Seed – (Kernel) Can be used as a substitute of Almond Ambasta (1986)
Oil– Can be used in cosmetics as a substitute of Almond oil in cosmetics

Commercial relevance:

The plant is economically important and has a role in providing the livelihood to the locals. The seeds are commercially important and could be sold in local market. Sindhudurg district has many local markets where people sell these seeds to the local traders. The local traders after collection of the seeds send it to bigger markets. The markets such as Kankavli, Sawantwadi, Kudal, Malvan, Banda, Devgad-Talebazar, Vengurla etc. are some of the leading markets where the trading of Charoli takes place especially during June to August.

There are no records of cultivation of this plant in the area under study. The plant can be propagated by different means like Seed germination, Root cuttings, Stem grafting etc. Rajput *et al*. (2018). In this region natural regeneration takes place by seeds which are dispersed by grazing/ browsing animals. [Fig 1 A - B].

Figure 1: A: Charoli plantlets growing on a hilly slope, **B:** Charoli plantlets growing on a constructed site **C:** Fully grown charoli tree in wild

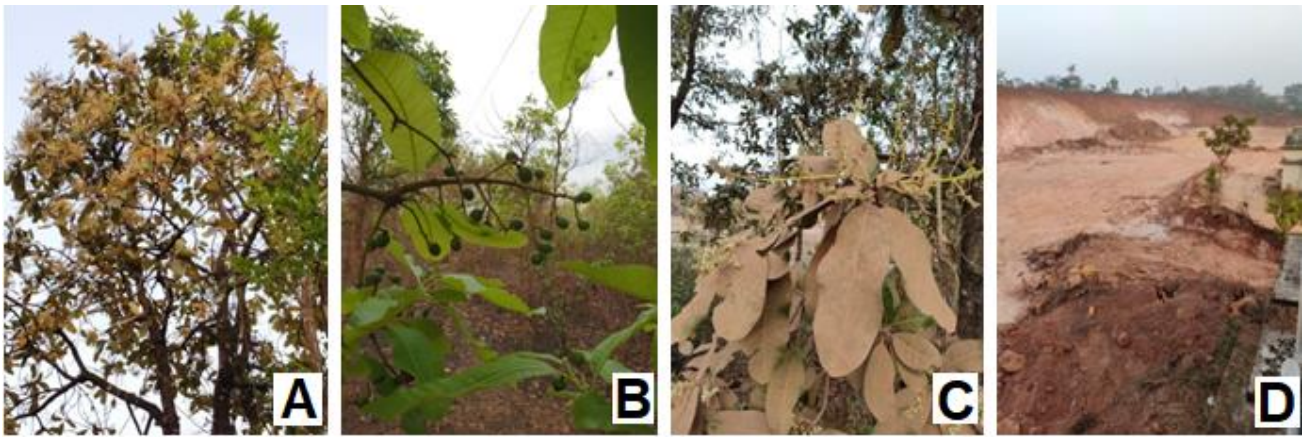

Figure 2 A: Flowering seen in Charoli Trees **B:** Fruting seen in Charoli Trees **C:** Growth of Charoli trees hampred by developmetal activities, **D:** Developmetal activities in Sindhudurg District.

Need for Cultivation:

Since the plant is indigenous to the area and well adapted to the surroundings, it can be a potential plant for reforestation. It has commercial as well as social value in the region. The study was taken up for checking the possibilities for taking commercial cultivation in this region.

These plants once upon a time were so common all over India, but now they are vanished from the regions like Bastar of Chhattisgarh Dulhani (2013). This work is an attempt to conserve these plants in the region under study.

The plant is important from the point of view of even agro-forestry. Since this plant included in the list of endangered plant, the efforts gain more relevance. The plant has got potential in providing quick land cover to the soil and improving the process of reforestation in this region. The weed value of this plant is zero. Dwivedi *et al*. (2012) Edibility of fruits and commercial importance of seeds (Kernel) add more relevance to the current efforts.

As we all are aware that the development of six laned Mumbai – Goa highway has added pressure on the ecosystem of this region and there is an urgent need to cover the deforested areas. This plant can offer a solution to this problem up to some extent. Therefore erecting nursery for these plants can be a relevant step in continuation with other efforts.

Seed is the most convenient source for raising new plantlets. The other ways of propagation are root cuttings and stem grafting Rajput *et al*. (2018). Seeds are collected during the months of late April, May Kumar *et al*. (2012) elsewhere in the country and also in June (in this area till monsoon starts).

Seeds are primarily collected for the purpose of extracting kernel. No reports are available for the trials of seed germination from this region. But it is reported from the states like Chhattisgarh, Madhya Pradesh and Uttar Pradesh. Kamal *et al*. (2014), Malik *et al*. (2012), Anand and Khare (2014) Shukla and Solanki (2000). The same protocol may be followed for germinating seeds for raising nursery.

Very interesting phenomenon is observed in this region, the seeds which are dispersed naturally through animals especially by goat herds which are reared by the nomads who visit this area during fruiting period of *Buchanania*. Leaves along with fruits are a popular fodder for these animals. These animals disperse seeds (along with stony endocarps) with their droppings. These seeds readily germinate when monsoon appears. New plantlets appear soon by the end of monsoon, which grow naturally in the area, out of these plantlets some could manage to survive and grow in to adult trees. But this process of natural regeneration is greatly hampered because of the extensive developmental activities grossly going on in this area.

Soil condition and suitability to the region for the cultivation:

The soil conditions are suitable for the reason – requirement of soil is red gravelly soil or alluvial type Shukla and Solanki (2000). In Sindhudurg there are four types of soils Rice field, Garden soil, Varkas and

Loamy type Mishra (2014). The *Buchanania* trees growing in the region are seen growing luxuriantly on all types of available soil.

Need for conservation activity:

The multipurpose property and abundance makes this plant more vulnerable to the destruction.

The destructive way of harvesting is also a matter of concern. Similar behavior of the locals is also seen in other parts of the country Rajput *et al*. (2018). It is used as a fire wood is adding up to the risk of making it rare in the area.

CONCLUSION

Course of action planned for the cultivation:

1. Raising the nursery for the Buchanania plantlets by using freshly collected seeds.
2. Identifying the area for trial cultivation of these plantlets.
3. Creating collection channels, for naturally germinated plantlets and planting these plantlets in the trial cultivation area/s.
4. Rescuing the bigger plants which are threatened to be uprooted during developmental activities in the area.
5. The current attempt is for acting proactively to avoid probable destruction in near future. Education and awareness activity for local people who are involved in the fruit/seed collection activity is recommended as a preemptive measure.

Acknowledgements:

The author wants to acknowledge Dr. V.S. Chauhan for providing guidance throughout the project, Mr. Virendra Pandit for providing technical assistance, Mr. Kartik Pandit for assisting in collection of data in the form of photographs and Mr. Sachet Desai for reviewing the manuscript.

Conflict of interest

The author declares that there is no conflict of interest.

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