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## **SCOPE OF KARONDA (CHRIST'S THORN), A SEMI WILD FRUIT CROP IN NORTH EAST INDIA**

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### **Abstract**

Karonda (*Carissa carandas*), a fruit of dryland which is an indigenous shrub widely grown in India is able to flourish well in marginal and wasteland where other crops of commercial importance are unsuitable. These hardy, evergreen, spiny shrubs widely grown in India have the richest of iron mineral among the fruit crops. Further research work on varieties selection among the different morphotypes which are widely found in India and value addition for preparation of commonly accepted products are needed for this underexploited minor fruit crop. Therefore, there is scope for the introduction of karonda in the tropical and subtropical areas of North East India due to its medicinal value and great demand in the international market.

**Key words** : Karonda, hedge plant, iron mineral, nutritional value

### **Introduction**

Karonda (*Carissa carandas*) which is popularly known as 'Christ Thorn Tree' is a hardy, evergreen, spiny belonging to Apocynaceae family and indigenous shrub widely grown in India. It is found wild in Bihar, West Bengal and South India. It is grown commonly as a hedge plant and regular plantation are very common in Varanasi district of Uttar Pradesh. In North East Region of India this shrub is rarely grown. However, it is now started introduced as homestead garden in East Siang district of Arunachal Pradesh and performing well. It is a non-traditional fruit crop which thrive well as a rainfed crop, once established, the plant hardly needs any care and gives yield with minimum management. It is very hardy and drought, it thrives well throughout the tropical and subtropical climates. Heavy rainfall and waterlogged conditions are not desirable. It can be grown on a wide range of soils including saline and sodic soils. Therefore, this medicinal value underutilized fruit crop can be introduced in the tropical and subtropical region of North East India to boost the marginal farmer income generation from this semi wild underexploited fruit crop.

### **Uses and its medicinal value**

Fruits are sour and astringent in taste, are the richest source of iron containing good amount of vitamin C and very useful to cure anaemia. Its fruits have antiscorbutic properties and very useful to cure anaemia also. Ripe fruits are sub-acidic to sweet in taste with peculiar aroma and can be used in the preparation of fruit products such as jelly, sauce and Carissa cream or jellied salad. The unripe fruits are sour and astringent and can be used for pickles, sauces and chutneys as reported by Bose *et al.* (1999). Besides, nowadays ripe processed products in sugar syrup are sold in name of cherry in local market.

**Table 1: Proximate composition of fresh karonda fruit**

Constituent (values/100 g edible portion)		Minerals (mg/100g)	
Moisture	91.00	Calcium	21.00
Protein	1.10	Phosphorous	38.00
Carbohydrates	2.90	Iron	39.10
Fat	2.90		
Fibre	1.50		
Calorific value	42.00		

Source: (Anon, 1950)

### Varietals development of karonda in India

In India, there is genetic diversity of karonda are found which need screening for superior genotype. There are no well established varieties of karonda although the cultivated types classified according to fruit colour a green-fruited, pink-fruited and white-fruited by Singh (1969). However, the differences are not much in shape and size of fruits in all the three types. At Konkan krishi Vidyapeeth (KKV), Dapoli, three plants namely No. 2, No. 5 and No. 2 (from another location) were reported to be promising by Bhagwat (1984). In Eastern Uttar Pradesh (India) identified 4 types of fruit, viz. green, white with pink blush, green with purple blush and maroon as reported by Kumar and Singh (1993).

### Soil and climate

Karonda being very hardy and drought resistant, it thrives well throughout the tropical and subtropical climates. Heavy rainfall and waterlogged conditions are not desirable. It can be grown on a wide range of soils including saline and sodic soils (Bose *et al.*, 1999).

### Propagation

It is commonly grown from seeds. The fresh seeds are sown in nursery during August-September after extraction from ripe fruit. One year old seedlings are transplanted in the mianfield when seedlings propagation is done (Banik *et al.*, 2012).

### Post harvest management of karonda fruit

The fruits harvested at maturity can be stored for a week at room temperature whereas fruit harvested at ripe stage are highly perishable and can be stored only for 2-3 days and it can be stored for 6 months in sulphur dioxide (SO<sub>2</sub>) solution @ 2,000ppm as reported by Chadha (2003). Besides, nowadays ripe fruit of karonda are processed with sugar syrup and sold in the market as karonda cherry which is a popular processed product. Moreover it is use as ingredients for making pickle.

### Scope of karonda in North East India

Karonda being hardy, evergreen, spiny and widely grown in India and performing well in the foothill region of Arunachal Pradesh, it can be introduced in North East Region of India in the tropical and subtropical region since it the richest of iron mineral among the fruit crops and processed products like pickle, karonda cherry are high demand in the market. Besides it is decorative and useful as live fencing as hedge plant.

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Fig 1. Karonda shrub bearing ripe fruit



Fig 2. Karonda cherry (Processed product)