



RESEARCH ARTICLE

A STUDY ON PROPERTIES OF PALMYRA SPROUT

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ABSTRACT

Uses of natural Fibers have gained importance in the recent years due to the Eco-friendly nature Recycling the existing natural resources and increasing the comprehensive development of agricultural waste have become the imperative in the development of green fiber and eco-textiles. In this paper, the author reviewed the development of the natural fiber from Palmyra sprout.

Key words:

Natural Fibers, Palmyra tuber, Miracle plant

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INTRODUCTION

Recently the consumers are very consciousness about their environment to ensure safety to their life. Thus eco friendly products are gaining importance in the market. Natural fibers were obtained by nature from plants (stems, leaves, roots, fruits and seeds, etc). Efforts has been taken to use natural fibers as reinforcements in polymer composites from very olden days. Natural fibres being biodegradable, low cost, easily accessible, low density and with good acoustic property attracts the manufacturers from diversified field. Their availability, renewability and price as well as satisfactory make them an attractive ecological alternative to glass, carbon and man-made fibers used for the manufacturing of composites. In this scenario, detailed review of this plant *Borassus flabellifer* has been discussed.

Plant description and Habitate

The *Borassus flabellifer* is a tall and erect palm, with large, fan-shaped leaves which are quite unlike the pinnate leaves of other palms. *Borassus* is from a Greek word describing the leathery covering of the fruit and *flabellifer* means "fan-bearer". In recent years, India stands first in the world in terms

of its wealth of Palmyra (*Borassus flabellifer* L) palms with a population nearly 122 million palms. Palmyra palm is a long life tree and can live up to 100 yr reaching with a canopy of leaves and a large trunk resembling that of a coconut tree. The palm is found growing in Andhra Pradesh, Tamil Nadu, Bihar and Orissa and more number of palms are found in southern states of India. Palmyra palm has great economic potential and every part of the palm is useful in one way or the other. Palmyra palm is a 'miracle' plant due to the once wide utilization of most of its parts, such as the trunk, foliage, husk, nut, and flesh. The trunk can be used for furniture and handicrafts. Dried leaves and the flexible sticks in the frond are woven to make some crafts. Palm nectar is used to brew for wine and vinegar and to make sugar. The flesh inside the nut is edible. A natural food coloring substance can be extracted from the husk or mesocarp. The seeds are sown on top of mounds and watered regularly within 45-60 days before germinating. The embryonic axis grows downward within a long apical tube into the soil and strikes roots. Growing upward from the roots is a bladeless first leaf within which accumulated food material translocate from the endosperm, thereby forming the starchy tuber.

Palmyra Tuber

Palmyra tuber has 98% fiber which means up to 95% is starch content. They are separator by hand beating or crushing

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mechanically and then by removing the pitch using the device called comber.

Table 1. Systematic position of the selected Plant

Kingdom	Plantae
Sub-Kingdom	Tracheobionta
Super division	Spermatophyta
Division	Magnoliophyta
Class	Liliopsida
Subclass	Arecidae
Order	Arecales
Family	Arecaceae
Genus	<i>Borassus</i> L
Species	<i>Borassus flabellifer</i> L.

Synonyms:

Wine Palm, longer palm, palmyra, toddy palm.

Vernacular names

Hindi: Taad

English: Toddy palm, Palmyra palm

Tamil: Talam

Telugu: Tatichettu

Malayalam: Karimpana

Bengali: Taala

Kannada: Olegari

Sanskrit: Taalah

Physical characterization of seedlings of Palmyra

The Palmyra seedlings have a clear brown color. Their size, the circumference of their rounded and that of their ends and their masses parts are shown in the following table.



Figure 1. Germinating shoot



Figure 2. Palmyra sprout

Table 2. Some physical parameters of seedlings of Palmyra

Color	light brown
Length in cm	26.35 ± 7.66
Median circumference in cm	15.5 ± 5.5
Circumference of ends in cm	5.2 ± 2.2
Mass of skinned palmyra shoots in g	81.5 ± 32.19
Mass of films in g	34.93 ± 6.51

Cultural symbolisms

All the parts of the palm are useful and over 800 various uses are reported and hence this palm is known as Kalpaga thara i.e. Tree of life. Signifying its importance, Govt. of Tamilnadu recognized it as the state tree of Tamilnadu since 1978.

Folk Medicine

There are innumerable medicinal uses for all parts of the Palmyra palm. Briefly, the young plant is said to relieve biliousness, dysentery, and gonorrhoea. Young roots are diuretic and anthelmintic, and a decoction is given in certain respiratory diseases.

Conclusion

The interest in natural fiber-reinforced polymer composite materials is rapidly growing both in terms of their industrial applications and fundamental research. In order to save the crop from extinction and to ensure a reasonable return to the farmers, non-traditional outlets have to be explored for the fiber. With the textile restructuring and an increase in investment in innovation, the scope of new fibers are increasing each day.

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