Cassava Cultivation: Insights from India

December 2015
Contents

Introduction ........................................................................................................................................... 3
I. Hybrid Varieties of Cassava ........................................................................................................... 3
II. Cassava Processing equipment and plants .................................................................................... 3
III. Value Added Products/ Processing of Cassava ........................................................................ 4
Africa and India- A comparison on Cassava Production ................................................................. 5
INTRODUCTION

Cassava is one of the major sources of starch or energy in the diet of tropical countries along with Maize, rice and sugarcane. Though it is a native crop of South America, Cassava is grown extensively in the African continent with Nigeria being the world’s largest producer of Cassava. Cassava is also called Tapioca in its powdered form.

With Regards to India, Cassava has been in cultivation since the 1960s and is majorly grown in southern India in the states of Kerala, Tamil Nadu and Andhra Pradesh.

We have found that there are 3 specific areas illustrated as below where significant enhancements have been achieved across the entire Cassava value chain over the last few decades in India.

I. HYBRID VARIETIES OF CASSAVA

A great amount research in the development of newer varieties of Cassava for the purpose of food and industrial applications has been undertaken in India by ICAR’s (Indian Council of Agricultural Research) - Central Tuber Crops Research Institute (CTCRI). The institute, established in the year 1963, has grown to become a premier research organization with international reputation with a range of patents under its belt. They have developed and released a host of Cassava varieties which are both high yielding and early maturing varieties. Some of them are H-97, H-165, H-226, Sree Jaya and Sree Vijaya. More on the varieties can be found here: http://www.ctcri.org/v.html

Below listed are the patents filed/ obtained by the instituted:

International Patents
- Starch based biodegradable plastics -obtained one patent

Indian Patents
- Starch based biodegradable plastics -obtained four patents
- Process for producing Cassava alcohol - obtained one patent
- A mobile starch extraction unit
- Process and plant for producing decontaminated water from industrial effluents of cassava starch factories
- A low cost bio-technique to extract starchy flour with modified functional attributes from cassava.

Cassava research is also being carried out in State Agricultural universities and in the state Departments of Horticulture and Plantation Crops.

II. CASSAVA PROCESSING AND PLANTS

Cassava has a great demand in India as a food crop where value added products like Sago or Sabudana, Chips & Flours and Wafers & Papads have become very popular and intrinsic to diets of domestic population. This has led to a lot of domestic processing equipment manufacturers with enhanced product features to suit the local demand and price competitiveness.

Some of the equipment includes:

1. Automatic Cassava Peeling Machine – to remove the skin of cassava tuber before slicing
2. Cassava Grater / Chipper – mechanized grating into chips to minimize hand grating

3. Other equipment like Cake Disintegrator, Driers, Fryers and Roasters

Some of the Indian equipment manufacturers like the LABH Group (http://www.snacksfoodproject.com/automatic-cassava-peeling-machine.html) and Four Brothers India (http://www.fourbrothersindia.com/cassava-processing-machineries.html) have setup export units for these equipment realizing the opportunity in West Africa and other regions in the world.

Some Indian organizations have setup Cassava processing plants specific to the requirements of a region, like UTSAV in Cameroon (http://www.utsavexim.com/Cassava-processing.php). The plant has equipment capable of producing Gaplek, Cassava bread, Gari, Cassava rice and Cassava flour. UTSAV group also take up turnkey projects to setup processing plants across the emerging world.

III. VALUE ADDED PRODUCTS / PROCESSING OF CASSAVA

Over the last few decades the private sector in India has realized the importance of Cassava’s value add products for both industrial purposes and as food and have greatly flourished. Below are some of the major value added products that are produced in India.

1. Sago or Sabudana - is the processed food starch of sweet potatoes, which is marketed in the form of small globules or pearls. Sago production units are located in Tamil Nadu, Andhra Pradesh, Gujarat and Maharashtra. More than 400 sago-producing units are located in Tamil Nadu alone

2. Broken sago - It is used in the textiles and sizing industries. It is mainly produced in Tamil Nadu and Andhra Pradesh. The marketing centers for broken sago are West Bengal and Maharashtra

3. Starch based Industrial Products- is the most important value-added product produced from cassava. These include glues & adhesives, additives in paper industry. These are produced in Tamil Nadu and Andhra Pradesh. Approximately 400-500 starch-processing units are located at Salem, Namakkal, Erode, Dharmapuri and Tiruchirapalli districts of Tamil Nadu, and some units are located in Kerala also.

4. Chips and flour - Andhra Pradesh, Tamil Nadu and Kerala are involved in the production of chips and flour. These are used in cattle feed units, adhesives, sizing, snack foods, etc. The marketing centers for these products are Maharashtra, Andhra Pradesh, West Bengal and Tamil Nadu

5. Wafer and Papad - These are produced in Tamil Nadu. Demand for wafers is more in northern states like Delhi, Uttar Pradesh, Gujarat and Maharashtra

Some of the organizations that are into manufacturing starch based products are Varnica Herbs (http://www.varnicaherbs.com/) and Packaging Aid Products (http://www.starchadhesives.in/). They have a well-established R&D team who develop various adhesives from Cassava starch.

SVM Sago (http://www.svmsago.in/products.html#sago) has been in Sago production for almost 50 years and over the years has diversified into production of Roasted Sago and Nylon Sago.

Lastly, A1 Chips (http://www.a1chips.in/#) with its state of the art production facility, producing tapioca chips for both domestic and export markets.
To summarize, we find that India has taken long strides in the areas of Cassava production and Cassava processing through extensive R&D in creating hybrid varieties, enhancements in processing equipment and the value add products for both food and industrial purposes. Also the proliferation has been greatly enabled by domestic demand and consumption along the entire value chain of Cassava.

IV. AFRICA AND INDIA- A COMPARISON ON CASSAVA

Productivity is the key differentiator between Cassava cultivation in India and Africa. While Africa has the highest growing area – 66.2% of world’s Cassava growing area (2005), it also has the lowest productivity of 8.8 t ha. India has a lower area under growth about 0.24 million ha but has the highest productivity in the world of 27.9 t ha due to its extensive and continuous R&D in growing Cassava. Further to this, India has a strong domestic Cassava processing industry with markets for value-add products.
SOURCES