



Coconut visuals from Hainan Island, China

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It was with great enthusiasm and excitement that we (Pramod P. Kurian, Asst. Director, Resmi D.S. Asst. Director, Arun Paul, Technical Officer) started our travel to China on 14th October 2015 to attend the 21 day training program on “Tropical crops planting technology for South Pacific island countries- 2015, organized by Chinese Academy of Tropical Agricultural Sciences (CATAS). The training programme was sponsored by the Ministry of Commerce, Peoples’ Republic of China. Since our permission to attend the training program came as a

last minute surprise, we hadn’t done much preparations. Still we were anxiously collecting information about coconut cultivation in China. We were greeted with the question ‘Coconuts in China?’ from many of our colleagues and friends. At last with lot of anxiety, we landed at Hainan Island by midnight. In our further journeys, we were really amazed by the views on either side of the road. Hainan was an island where coconut palms, mango trees, banana and rubber trees were grown! Large plantations of banana, cassava and rubber could be seen.

And the climate is also similar to Kerala, except that early mornings were really cold. The scorching sun during day time is also unbearable at times!

The days we spent in China changed our image about China and Chinese people. We were surprised to see the technological advancements made in all walks of life. Roads were so well maintained, public places and walk ways were aesthetically decorated with coconut palms and flower gardens deserve special applause. We were really surprised to see the way traffic rules being followed strictly by the public. Buses which form the public transportation facility are operated by drivers only. Bus fare is dropped in a box placed near the driver of the bus. With smiling face, sales executives welcome everyone at commercial joints. In one word, China has forwarded much in its fundamental development. Indians are known as ‘Indus’ in China. Since the common people of China were



High yielding coconut varieties developed by Coconut Reserch Institute of China

not fluent in English, we found it very difficult to move around alone the help of a translator.

Our fellow trainees were from Thailand, Nigeria, Samoa, Tonga and Sri Lanka. The team of 19 were from various agriculture related fields. The majority of the training sessions were held at the Coconut research institute (CRI), Chinese Academy of Tropical Agriculture Sciences. Their research was mostly focused on the tropical oil crops and palmae plants including coconut, oil palm, oil camellia, date palm, areca and peanut. CRI was under direct administration of the Ministry of Agriculture, P.R.China. We also found that CRI was giving priority on the innovative utilization of germplasm resources, cultivation technologies for high yielding varieties, prevention and control technologies for key pest and diseases, comprehensive utilization of product processing, biotechnology research and other basic and applied basic research. About 3000 employees are working under CATAS in 14 experimental sections spread throughout out the country.

Because of the extremely cold winter, most of the coconut trees were affected by winter injury in many places of the island. The palms inside CRI were also not an exception. They were also not properly fertilized or irrigated. From



CDB Officers Shri. Arun Paul, Shri. Pramod P Kurian & Smt. D.S. Resmi with officials of Ministry of Commerce, PR of China

our observations, we realized that coconut trees are mainly grown as an ornament crop. Trees which are 7-8 years old are uprooted and further planted in roads as Avenue Planting. Such palms are given support of wooden planks, It was informed that coconut palms planted in such way could help in soil conservation during natural disasters like typhoon.

Even though China lags behind in the cultivation area and production of coconut CRI is giving special attention for its researches in coconut sector. The methods for procurement of seeds are different from that of ours. Two types of nurseries are there; a primary nursery, for the germination of seeds and a secondary nursery for the distribution of seedlings to the farmers. In Primary nursery sunlight is controlled by installing shaded

nets. Sand and decayed coconut fiber are filled in square beds which are placed on a slanted surface and separated by blocks. Before planting, the seednuts are given a cut near the eye of the coconut. Once in 15 days seedlings germinated in the primary nursery are transferred to the secondary nursery. When the plants attain growth of 10-11 months, they are distributed to the farmers from secondary nursery. Through this method, it is ensured that only quality planting materials reach the farmers. DSP farms under CDB can experiment these methods.

Hainan Island which is spread over in 332010 km² has coconut trees in abundance. But due to winter injury and lack of proper management, they fall behind in productivity. A variety named 'Mava' seems to withstand winter



Coconut Products in Chinese Super Market . Red palm weevil put in glass pendant (right)

injury to an extent. Other major threats encountered by coconut cultivation of China are insect attacks by *Brontispa longissima*, Red palm weevil, Rhinoceros Beetle and diseases like stem bleeding, bud rot, fruit rot, leaf rot etc.

Research is being done in CRI to develop varieties which can tolerate winter injury. Attacks of coconut leaf beetle (*Broustipa longissima*) are frequent in Hainan Province. We got the opportunity to watch the breeding and release of beneficial insects *Tetrastichus brontispae* and *Ascodes hispinarum* which help to fight coconut leaf beetle. Pheromone traps are also used against Red palm weevil. Other integrated management techniques are similar to that in India. Coconut leaf beetle is luckily not one of the many threats in our coconut sector. This beetle can bring significant reduction in productivity. The beetle and its larvae eat up the soft tissues of coconut leaf and causes wilting of the leaves which in turn contribute to the fall in productivity. Need for precautions to be taken to prevent coconut leaf beetle from entering our country is reminded.

Another area of interest was the Handicraft products from coconuts! These are found plenty in Chinese markets. Even the insects affecting coconut are in the market as handicraft items!! The insects caught in the pheromone traps are put in glass pendants and are being sold in the market. Shocking, Right?

Even though China is behind in area under cultivation of coconut they are not second to anyone in the consumption of coconut and manufacture of value added coconut products. Coconut milk, different types of coconut powder, coconut filled snacks, coconut milk powders mixed with cocoa – tea etc., fragrant coconut milk powders, coconut toffees etc. fills the super markets of Hainan. We also got the opportunity to visit a coconut milk producing unit named Hainan Island. Coconut milk is called as “coconut juice”. It was a new experience for us tasting coconut milk blended with different fruit flavors and coconut water. Coconut milk blended with mango, pineapple and papaya are having huge demand in foreign markets. Coconut milk mixed with Nate – De – Coco also enjoys high demand among consumers. Although the cultivated area of coconut is much less in Hainan, this Island has around 200 small scale coconut processing units. Coconuts needed for these plants are imported from countries like Malaysia and Vietnam.

We also had the opportunity to visit and understand the cultivation methods of research centers functioning under CATAS like Spice and Beverage Institute, Tropical Crops Genetic Resource Center, Tropical Vegetable Research centre, Botanical Garden and Cassava Research Institution. The infrastructure facilities developed under these institutions were amazing. All research stations had their own product development centres, from which outstanding quality value added products are developed.

They also have sales outlets inside the research centres, wherein these products are sold.

As a part of the training sessions, we refreshed our knowledge about production technologies in of cocoa, pepper, vanilla, rose, anthurium, orchids etc. As modern techniques are followed in the cultivation methods developments occurring in agricultural sector is breath taking. Tomato, water melon, etc are grown in green houses which are fully controlled by computers! As the crops are grown in very extensive areas, the visitors are taken around these centres in small trams, since walking around is impossible!.

Whatever be the crop, they find a suitable place for cultivating it in a large scale and also establish a processing unit nearby. This ensures good market place and good prices for the products.

Compared to other crops of China, coconut is not considered as a major commercial crop. Coconut of the country is mainly used for domestic purposes and coconut for processing units is imported from other countries. CRI has already taken measures to spread coconut cultivation across the country. It is probable that they are anticipating further co-operation with India which is much ahead of them in coconut cultivation, production and value addition. ■

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