

The Economic Plants of North East India

Sudhir Kumar

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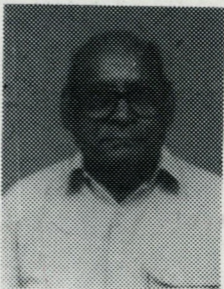


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THE BOOK

The North Eastern region of India is one of the largest centres of Genetic diversity of plants of economic importance. About 50 percent of the total number of species of our sub-continent occur in this region. Further the presence of large number of primitive flowering plants makes N.E. India the "Cradle of Flowering Plants". However, this region is still unexplored and informations available about these plants are rudimentary and scanty. This compendium is a small effort to give a glimpse of the richness of the plant wealth of the region.

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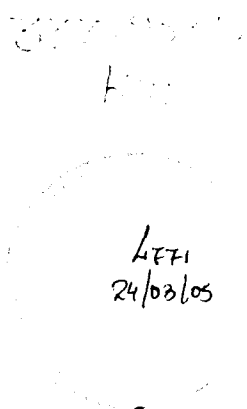
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INTRODUCTION

The North Eastern Region of India comprising of Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland and Tripura is situated between East longitude $89^{\circ}42'$ to $97^{\circ}40'$ and North latitude between $22^{\circ}19'$ and $29^{\circ}50'$. The rolling mountains, enchanting valleys, swift flowing streams and luxuriant forests because of plentiful rain throughout the year give evidence of precious gift of bountiful nature bestowed upon the region. Because of the wide geographical and climatic diversity, the region is also the repository of rich diversity of plants of economic importance and reservoir of genetic variability. This important plant wealth has neither been fully explored nor utilized to its full extent.

About 50% of the total number of species of our sub - continent occur in this region. The region is rich in endemic species and forms a "Gateway" to numerous alien species. Further the presence of large number of primitive flowering species makes the North East the cradle of flowering plants (Rao 1993).

However, this area is still unexplored and information on the plant resources available for this region is rather scanty. It is high time that all scientific efforts are directed towards identification, conservation and utilization of these valuable source of plant wealth which can provide the base line data for development of large number of plant based cottage industries. This will bring benefit to the area by improving economy of the region as well as contributing to the gross national product of the country. It will thus bring the benefit to the entire country. Many of the products developed from these plants could be import substitutes as well as important export items and thus saving millions of rupees of the country in foreign exchange.

The North Eastern Region has remained much neglected and there are thousands of promising species that await research and

study, so that these plants can be utilized for the welfare of the people of India as well as the mankind. The cataloguing and detailed information with respect to utilization of their product will bring immense benefit to people of the region. This will also help in tapping new resources of fibres, natural dyestuff, fatty acids and essential oils etc. The natural dyestuff which had been abandoned due to use of cheaper synthetic dyestuff are coming in vogue since the European communities have banned the use of synthetic dyestuff. This has resulted in great loss to garment exporters of the country. The European economic community demands that the garments exported to these countries be dyed only in natural dyestuff, we therefore have to find out the new sources for the purpose. The informations to be obtained from tribals of the North Eastern Region will be of much help and value as they have been using natural dyestuff since time immemorial.

India has been importing large number of perfumes from Europe and other countries, resulting in depletion of foreign exchange. A number of essential oils found in North Eastern Region can be used as base for preparation of perfumes, thus saving valuable foreign exchange, and in the years to come we may be in a position to export new perfumes.

A number of food plants viz. vegetables and fruits are available only in the North Eastern Region and have not been brought to the main land and therefore, most of the people of India are deprived of such delicacies. If these plants are grown on a commercial scale and sent to Delhi and other metropolitan towns they will bring much benefit to the people of the North Eastern Region and people of other parts of India will have new delicacies on their table. The North Eastern region is also rich in ornamental plants which have not yet been explored on a commercial basis. These plants can change and bring a new look into the gardens. The orchids which are endemic to the area are very valuable. Arunachal Pradesh and Sikkim have exploited their potential and export orchid flowers to the tune of hundred crore rupees. This could be further developed and new hybrid plants produced by tissue culture augmenting the horticultural wealth of the country.

Many of the medicinal plants which are important for Ayurvedic preparation are also valuable foreign exchange earners. The details about these plants will not be discussed in this book. The details can be perused in another volume entitled "Medicinal Plants of North Eastern Region" by the author which is under publication.

Perilla frutescence which grows abundantly in the North Eastern Region, is a very useful plant. The oil obtained from the seed is used as cooking medium by the tribals, however this oil has a special quality which has not been exploited in this country. Japanese use this oil as seasoning for meat. The oil is also used for preparation of special polish which gives very good gloss. There are other products which can be prepared from this oil and have a great economic value. As already mentioned, these aspects have neither been explored nor exploited. The products of this oil can be a good foreign exchange earner. The total quantity of the oil available is about 15,000 tonnes. This being considerable amount can help in establishing paint and edible oil industry in the area. The oil of another plant *Butea minor* was sent to Harcourt Butler Technological Institute, Kanpur for chemical evaluation. They have reported that this oil can be used for the manufacture of paints and high quality soaps. It is rather a travesty that such valuable resources available in the region have not been exploited which could bring economic benefits by establishing paint and soap industries. It is, therefore, necessary that the potential of economic plant wealth available in this region should be fully understood and used for the benefit of the country which is reeling under dire poverty.

In addition to certain specific items mentioned above, these plants may also provide some other minor products about which we have practically no knowledge.

Almost 462 plants have been studied and they belong to the following 8 groups.

1. Dye yielding plants
2. Fibre yielding plants
3. Spices and condiments
4. Essential oil producing plants
5. Ethnotoxic plants
6. Gum, resin and tannin yielding plants
7. Timber plants
8. Food and Edible plants

The above group of plants are important for establishing agro-based industries as well as other industries. Also some of them may have medicinal value. The details are discussed under each head.

1. Dye Yielding Plants

There is now demand from all over the world that textiles be dyed with natural dyes as AZO dyes have been reported to be carcinogenic in the long run. India is one of the important textile exporters in the world and therefore it is necessary that sources of natural dyes be discovered to maintain India's supremacy in the world textile market. The export of textiles also earns valuable foreign exchange for the country. We can learn from the inhabitants from N.E. Region the technology of dying as they have been dyeing their cloth with natural dyes from times immemorial. This region thus can provide the resources of natural dyes to meet the national requirement and will also help increasing the employment potential. This will be an important source of income generation and thus improving the quality of life.

2. Fibre Yielding Plants

The same is true of this group of plants. The fibre plants available in this region have not been fully exploited. Some of the fibres can also be utilised in textile industry as admixture to improve the quality of cloth. The fibres of different types as discussed herein may be important import substitutes.

3. Spices and Condiments

Many of the spices and condiments can be easily grown in this area because of very suitable climate. This will help in the development of specialised agriculture and will bring far more benefits than growing agricultural crop. This will also meet the national requirement of the spices and may be available for export, earning valuable foreign exchange. Some of the spices are used locally and people on the mainland are deprived of these very useful spices. If these spices are brought to metro - towns then the people there will have new delicacies. This will help in the development of the region.

4. Essential Oil Producing Plants

The region gets its cooking oil requirement from the mainland. However, the tribals have been using a number of plants to meet their household requirement such as *Phosocarpus tetragonolobus*, *Perilla frutescence*, and *Butea minor*.

Many of the oils can be used for establishing soap and paint industries and many of the essential oils can form base for

perfumes which will not only be exotic but will also develop perfume industry thus saving valuable foreign exchange spent on importing perfume bases.

5. Ethnotoxic Plants

Many of the plants can be source of insecticides of various types or may be found to be useful medicinal plants for dreaded disease like cancer and AIDS. However a detailed study is needed before we can draw definite conclusion. Some university in the N.E. Region can take up specific studies on these plants.

6. Gums, Resins and Tannin yielding Plants

These products are in great demand in the industry. Unfortunately these important resources have not been exploited to their full potential. The industrial houses as well as the government need to take interest in these valuable resources of the region.

7. Timber Plants

The N.E. Region is rich in various types of timbers both deciduous and evergreen. The N.E. Region meets more than 50% of the timber requirement of the country. However in recent years indiscriminate felling is disturbing the environment of the area causing irreparable harm to the region through floods, washing away useful soil crust and thus reducing the crop yields. This will result in catastrophe for the posterity. Some of the species may become endangered. There is, therefore, a need to use the timber plants with care and consideration. There is also need for establishing germ plasm nurseries to prevent extinction of useful species.

The germ plasm nurseries can also be utilized by research workers to breed fast growing timber plants to meet the country's need for timber.

Arunachal Pradesh forest department has taken a lead in establishing such a nursery. However, other N.E. States should also establish such nurseries.

8. Food and Edible Plants

Many of the food plants of the region are valuable and interesting. The variety is vast and needs to be conserved and studied in detail. The huge produce of these valuable exotic food plants cannot be consumed by local people and the mainland is

deprived of these rare delicacies. If arrangements could be made to transport these plants to big Metro towns the people will be able to enjoy the delicacies and local people will benefit by increasing their earnings.

Many of these wild plants consumed by the people of N.E. Region are wild progenitors of crops, vegetables and food plants and may bestow disease and insect resistance as they survive under stress conditions.

The germ plasm of rice from this area has been used by International Rice Research Institute, Phillipines for producing useful varieties. The area has also the best citrus germ plasm of the world maintained at Tura (Meghalaya). It is unfortunate that we have not utilised this germ plasm for breeding useful varieties as well as new types of useful citrus plants.

This publication will lead to the following if the information is used properly :

- A. Establish new industries.
- B. Provide more employment to the inhabitants of the area and thus improve the quality of life.
- C. It will increase developmental activities in the area removing regional imbalance.
- D. It will result in saving valuable foreign exchange as many of the products obtained from these plants may be important import substitutes.
- E. New items of food will be available for other parts of the country bringing integration and recognition of the importance of this remote and still unexplored region.
- F. The studies on the germ plasm of various species will provide information about useful types.
- G. It will improve overall environment of the area.
- H. This publication will provide a catalogue of the useful plants and may prevent patenting of our useful plant wealth.

It will thus be observed that the present publication will not only provide the information about valuable plant wealth of the region but if properly utilised will bring all round development of the region, economic stability and better quality of life for the people.