

LECTURE 26

AREA, PRODUCTION, PRODUCTIVITY AND IMPORTANCE OF IMPORTANT TUBER CROPS IN INDIA & TAMIL NADU

- Root and Tuber Crops are the most important food crops after cereals. They have the highest rate of dry matter production per day and are major calorie contributors.
- Tuber crops find an important place in the dietary habits of small and marginal farmers especially in the food security of tribal population.
- Tuber crops not only enrich the diet of the people but also possess medicinal properties to cure many ailments or check their incidence.
- Many tropical tuber crops are used in the preparation of stimulants, tonics, carminatives and expectorants. The tuber crops are rich in dietary fibre and carotenoids viz. β carotene and anthocyanin.
- India holds a rich genetic diversity of tropical root and tuber crops viz. Cassava, Sweet potato, Aroids, Yams and several minor tuber crops.
- Roots and tubers were critical components in the diet during the early evolution of mankind (~ 5 million years ago).
- With the advent of agriculture, cultivated root and tuber crops became increasingly critical sources of food with the potato, cassava and sweetpotato representing the 3rd, 6th and 7th most important sources of food for humans worldwide today.

Area (ha), production (Mt) and productivity (kg/ha) of cassava in India

Area (ha)	Production (Mt)	Productivity (t/ha)
0.24	6.70	27.92

Present Scenario

- The two hot spots of global biodiversity viz. North Eastern Himalayas and Western Ghats are particularly rich in wild relatives of tropical root and tuber crops.
- The Central Tuber Crops Research Institute, Thiruvananthapuram initiated collection of tuber crops germplasm and wild relatives from all over India from 1963 onwards.

Cassava

- Cassava (*Manihot esculenta*) belongs to the family Euphorbiaceae and is believed to have originated in South America, most probably Brazil.

- Wild species of cassava are found in the natural habitat in Brazil. The genus *Manihot* consists of about 98 species but none of the existing wild species can clearly be identified as the ancestor of cassava.

Sweet potato

- The cultivated sweet potato (*Ipomoea batatas* L.) and the wild species closely related to it belong to the family Convolvulaceae, genus *Ipomoea*.
- Sweet potato is an ancient crop, originated in the north western part of South America.

Yams

- *Dioscorea* sp. are widely distributed in Tamil Nadu.
- Food yams are believed to have originated in the tropical areas of three separate continents, Africa, South East Asia and South America.
- The Asiatic yam (*Dioscorea alata*), probably originated in Indo Burma region.
- Many of the *Dioscorea* species serve as a 'life saving' plant group for the marginal farming and forest dwelling communities, during periods of food scarcity

India is rich in the floral diversity of root and tuber crops. It harbours two of the richest global biodiversity hot spots in the Western Ghats and the North eastern region, comprising part of the Indo- Burmese hotspot. These hotspots contain a large number of wild relatives of cultivated tuber crops as well as many under-exploited tuber crops known to tribals.

Multiple choice questions

1. The most cultivated tuber crop of the world is _____
a. Sweet potato b. Yams **c. Potato**
2. A potato tuber represents
a. **Enlarged underground stem**
b. Enlarged underground root
c. Enlarged underground nodules
3. Central Tuber Crops Research Institute is located at _____
a. **Thiruvananthapuram** b. Hyderabad c. New Delhi
4. Cassava (*Manihot esculenta*) belongs to the family
a. Euphorbiaceae b. Convolvulaceae c. None
5. Origin of Asiatic yam (*Dioscorea alata*) _____
a. Indo Burma b. S. America c. Africa