



World's First Genetically Modified Rubber: Assam

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Why in News

Recently, the world's first **Genetically Modified (GM) rubber plant developed by Rubber Research Institute** was planted in Assam.

The rubber plant is the first of its kind developed exclusively for this region, and is expected to grow well under the climatic conditions of the mountainous northeastern region.

Rubber Board

- It is **headquartered at Kottayam, Kerala**, under the **administration of the Ministry of Commerce and Industry**.
- The Board is responsible for the development of the rubber industry in the country by assisting and encouraging research, development, extension and training activities related to rubber.
- **Rubber Research Institute** is under the Rubber Board.

Key Points

- **About the GM Rubber:**

- **Genetic modification (GM)** technology allows the transfer of genes for specific traits between species using laboratory techniques.
- The GM rubber has **additional copies of the gene MnSOD**, or **manganese-containing superoxide dismutase**, inserted in the plant, which is **expected to tide over the severe cold conditions during winter in the northeast**.

The MnSOD gene has the **ability to protect plants from** the adverse effects of severe environmental stresses such as **cold and drought**.

- **Need:**

- Natural rubber is **a native of warm humid Amazon forests** and is **not naturally suited for the colder conditions in the Northeast**, which is one of the largest producers of rubber in India.
- Growth of young rubber plants remains suspended during the winter months, which are also characterised by progressive drying of the soil. This is the reason for the long immaturity period of this crop in the region.

- **Natural Rubber:**

- **Commercial Plantation Crop:** Rubber is **made from the latex** of a tree called **Hevea Brasiliensis**. Rubber is largely perceived as a **strategic industrial raw material** and accorded special status globally for defence, national security and industrial development.
- **Conditions for Growth:** It is **an equatorial crop**, but under special conditions, it is also grown in tropical and sub-tropical areas.
 - **Temperature:** Above 25°C with moist and humid climate.
 - **Rainfall:** More than 200 cm.
 - **Soil Type:** Rich well drained alluvial soil.
 - **Cheap and adequate supply of skilled labour** is needed for this plantation crop.
- **Indian Scenario:**
 - The **British established the first rubber plantation in India in 1902** on the banks of the river Periyar in **Kerala**.
 - India is currently the **sixth largest producer of NR** in the world with one of the highest productivity (694,000 tonnes in 2017-18).
 - **Top Rubber Producing States:** Kerala > Tamil Nadu > Karnataka.
- **Government Initiatives: Rubber Plantation Development Scheme** and **Rubber Group Planting Scheme** are examples of government led initiatives for rubber.

100% **Foreign Direct Investment (FDI)** in plantations of rubber, coffee, tea, cardamom, palm oil tree and olive oil tree.
- **Major Producers Globally:** Thailand, Indonesia, Malaysia, Vietnam, China and India.
- **Major Consumers:** China, India, USA, Japan, Thailand, Indonesia and Malaysia.

- **India's National Rubber Policy:**

- The **Department of Commerce** brought out the **National Rubber Policy in March 2019**.
- The policy includes several **provisions to support the Natural Rubber (NR)** production sector and the entire rubber industry value chain.
 - It **covers** new planting and replanting of rubber, support for growers, processing and marketing of natural rubber, labour shortage, grower forums, external trade, Centre-State integrated strategies, research, training, rubber product manufacturing and export, climate change concerns and **carbon market**.
 - It is based on the **short term** and **long term strategies** identified by the **Task Force** constituted on the rubber sector for mitigating problems faced by rubber growers in the country.
 - Developmental and research activities for supporting the NR sector for the welfare of growers are carried out through **Rubber Board** by implementing the **scheme Sustainable and Inclusive Development of Natural Rubber Sector** in the **Medium Term Framework (MTF) (2017-18 to 2019-20)**.
 - The developmental activities include **financial and technical assistance for planting, supply of quality planting materials, support for grower forums, training and skill development programme**.

Source: TH