



Uttarakhand to Set up 42 Forest Labs

Why in News?

Recently, the Uttarakhand Forest department has established **42 ecological laboratories** to monitor the impact of [climate change](#) on the forests.

Key Points

- These labs will collect data on changes like **early flowering in [rhododendrons](#)** and [Brahmakamal](#), and the **quality of [litchis](#)** affected by high temperatures.
- These 'ecological labs', also called 'living laboratories' are distributed across various **ecosystems, from the [Terai region](#) to [alpine meadows](#)**.
 - Uttarakhand is home to [46 distinct forest types](#), which can play important role in global climate change research.
- Uttarakhand this summer has reported soaring temperatures beyond **42 degree celsius**, which affected the quality of [Dehraduni and Ramnagar litchis](#).
- **Rhododendron:** Rhododendron is a genus of flowering plants with **around 1,000** species, known for their showy, brightly colored flowers, and are popular as ornamental shrubs or small trees.
 - In India, [Pink Rhododendron](#) is the state flower of **Himachal Pradesh**, and [Rhododendron arboreum](#) is the **state flower of Nagaland** and the **State Tree of Uttarakhand**.
 - **Health benefits:** Prevention and treatment of diseases associated with heart, [dysentery](#), [diarrhea](#), [detoxification](#), [inflammation](#), **fever, constipation, bronchitis and asthma**. The leaves possess effective **antioxidant activity**. The young leaves are used to alleviate headaches. The wood of this plant can be used for making khukri handles, pack saddles, gift boxes, and gunstocks.
- **Brahmakamal:** It is the state flower of Uttarakhand.
 - It occurs in alpine meadows of the [Himalayas, from Jammu and Kashmir to Arunachal Pradesh](#), and is also found in Bhutan, China, Nepal, and Pakistan at altitudes of **3700 to 4600 meters**.
 - The plant's roots and floral buds are used **to treat [leucoderma](#), urinary issues, bone fractures, wounds, bone pain, cough, cold, and digestive problems**; the whole plant is used for **veterinary medicine in haematuria**.
 - In Tawang, its dried powder or paste is **applied for [skin diseases](#), and floral buds are used to treat boils**.

Litchi

- **Botanical Classification:** Litchi belongs to the **Sapindaceae family** and is known for its delicious, juicy, translucent aril or edible flesh.
- **Climatic Requirements:** **Litchi** thrives in sub-tropical climates and prefers moist conditions. It grows best in regions with low elevation, up to an altitude of around 800 meters.
- **Soil Preference:** The ideal soil for litchi cultivation is deep, **well-drained loamy soil** rich in organic matter.
- **Temperature Sensitivity:** Litchi is sensitive to extreme temperatures. It does not tolerate temperatures above **40.5 degrees Celsius** in summer or freezing temperatures in winter.
- **Rainfall Impact:** Prolonged rain, especially **during flowering**, can interfere with pollination and affect the crop adversely.

- **Geographical Cultivation:** In India, the commercial cultivation was traditionally restricted to the north in the **foot hills of Himalayas from Tripura to Jammu & Kashmir and plains of Uttar Pradesh and Madhya Pradesh.**
 - But due to increased demand and viability, cultivation has expanded to states like Bihar, Jharkhand, and Chhattisgarh.
 - Bihar alone accounts for nearly 40% of India's litchi production. Bihar is followed by West Bengal (12%) and Jharkhand (10%).
- **Global Production: India ranks as the second largest producer of litchi globally,** following China. Other significant litchi-producing countries include Thailand, Australia, South Africa, Madagascar, and the United States.

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