



## Uttarakhand to Set up 42 Forest Labs | Uttarakhand | 18 Sep 2024

### 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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