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AUTOMATED OPEN TOP CHAMBERS

Study of CO_2 impact on plant species

V Ashok Kumar | ENS
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IN a first of its kind initiative, the Institute of Forest Genetics and Tree Breeding in Coimbatore has installed automated open top chambers in its premises to study the impact of carbon dioxide(CO2)and temperature on plant species.

Certain species of plants are exposed to elevated levels of CO2 in the cubical transparent chambers. "We are studying how much elevated CO2 levels effect the ecosystem, especially the effect on individual species within tree communities and inter-specific variations," said N Krishna Kumar, director of Institute of Genetics and Tree Breeding.

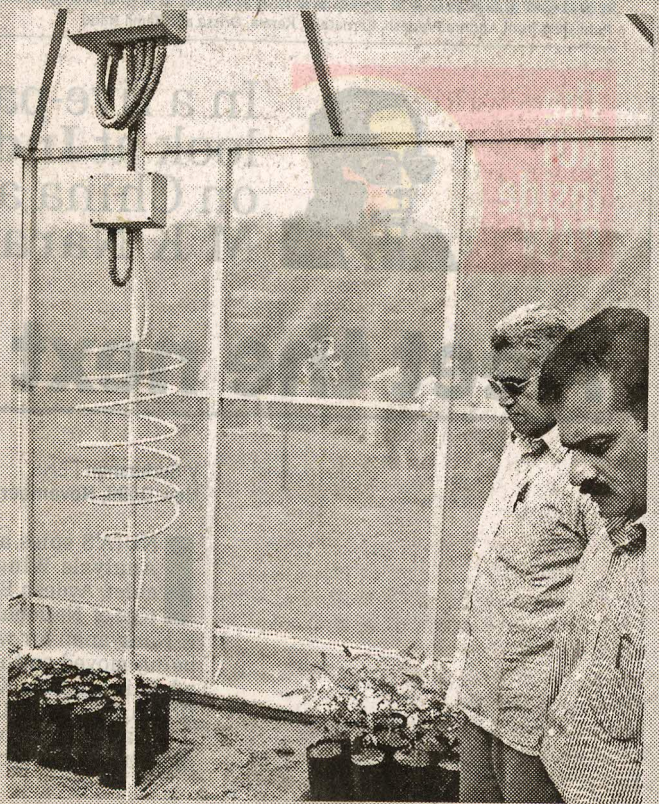
According to a report issued by the inter-governmental panel on climate change, the level of CO2 in the atmosphere has increased by about 36 per cent over the last 250 years. "This increase in CO2 and global temperatures may result in either positive or negative results on the growth of plants, depending on the kind of species. It is imperative to assess the response of some ecosystems to elevated CO2 levels. The mainly focus is on the changes within plants at physiological and bio-chemical levels," he disclosed.

In the initial phase, the scientists have decided to study certain selected varieties of plant species like teak and eucalyptus. In the apparatus that has a total of six chambers, the plant saplings are exposed to varying levels of CO2 to ascertain their gene modifications over a period of about four months.

"This research will help to understand whether a particular plant species is susceptible to climatic change. And if not, then through certain gene modifications, it could be made to withstand the change in temperature and CO2 levels," revealed C Buvaneswaran, a scientist with the institute.

"There are certain plant communities that exclusively represent the type of vegetation (deciduous, evergreen etc) in a forest. And if there is an unchecked and exponential rise in CO2 and temperature, then the forests will lose many unique varieties of trees. In the course of time, it may also lead to evergreen forests turning into deciduous forests. This study will help us to work out a strategy for combating climatic change and its drastic impact on the plants," he added. The research will be a milestone in assessing the impact of climatic change, as we tend to mostly rely on research works produced by other countries in this area. Once the research is over, the institute plans to submit a report to the Indian Council of Forestry Research and Education (ICFRE).

Principal Chief Conservator of Forests, Kerala T M Manoharan inaugurated the automated open top chambers, set up at a cost of Rs 30 lakh, in the presence of TN Planning Commission member G Kumaravelan on Monday.



Principal Chief Conservator of Forests, Kerala and TM Manoharan and Director of Institute of Forest Genetics and Tree Breeding N Krishna Kumar at the lauch of the Automated Open Top Chamber in the Institute of Forest Genetics and Tree Breeding in Coimbatore on Monday