

CPCRI develops protocol to preserve coconut varieties

NIE Express
10/12/16

GEORGE POIKAYIL @Kasargod

IN its fight against genetic erosion, the Central Plantation Crops Research Institute has developed a protocol to cryo-preserve coconut varieties, said scientists.

The premier institute in Kasargod is in the process of opening an account with the National Bureau of Plant Genetic Resources, the world's third largest plant gene bank, in Delhi to preserve 455 coconut varieties, the biggest collection in the world, they said.

"We have been working on developing this protocol for around six years. It is simple, cost effective and coconut gene banks across the world can make use of it," said Anitha Karun, principal scientist



and head of the department, Crop Improvement Division, CPCRI.

Under the protocol, coconut pollen and embryo are preserved in

minus 196 degrees Celsius in liquid nitrogen. "The retrieval rate is anything between 30%-70%," she said.

Genetic erosion

The threats facing coconut trees are lethal, drought, yellowing disease and climate change are just three of them, said scientists. Thirty years ago, lethal yellowing disease virtually wiped out Caribbean Islands, said Vincent Johnson, director, Bioversity International (BI), a global research-for-development organisation. The lethal yellowing disease is found in Latin America, Africa and Asia Pacific, which accounts for 80% of global coconut production.

In an interview to the BBC this year, he said BI was looking at "cryo-preserving coconut pollen and freezing coconut germplasm"

as complementary conservation strategy "to secure the future of coconut".

The climate change is going to affect the diversity too. Most of the coconut trees grow on coastal regions and are more vulnerable to sea-level rises.

"Unless we work towards protecting the future of coconut, we might end up with less option... and it is kind of 40 to 50 years time frame," Johnson said.

Root wilt disease in India and Weligama coconut leaf wilt disease in Sri Lanka have taken a toll on coconut production, CPCRI said.

"They are not lethal but debilitating diseases," said Dr Karun.

Field gene bank

CPCRI already runs the world's biggest coconut field gene bank at Kidu in Karnataka, and countries like Pakistan, Sri Lanka and Bangladesh depend on it.

"It has 455 coconut varieties, of which 132 are exotic. But it is labour intensive and open to all natural risk," said K Muralidharan, Head, division of social sciences CPCRI. "The new protocol developed will ensure purity as well as diversity of the coconut varieties," he said.

CPCRI said conservation priority would be given to varieties from regions such as the Andamans, where the threat perception is higher.



We have been working on developing this protocol for around six years. It is simple, cost effective and coconut gene banks across the world can make use of it

Anitha Karun, principal scientist and head of the department, Crop Improvement Division, CPCRI.