

# Protein in tamarind seeds can be used to treat chikungunya

## **SOUR BUT SWEET**

**NEW DELHI:** Two professors at Indian Institute of Technology (IIT) Roorkee claimed to have discovered a protein in tamarind seeds that has antiviral properties and can potentially be used to develop medication for chikungunya.

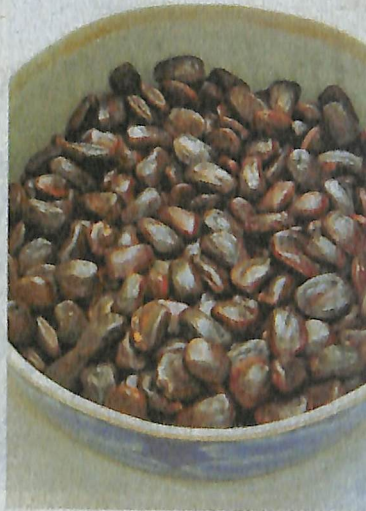
The research group at IIT Roorkee has filed a patent for an antiviral composition containing this tamarind antiviral protein and is now developing tamarind-based therapeutic agents for the deadly chikungunya.

“Tamarind is known for various medicinal properties in India and is an excellent Ayurvedic food. The fruits, seeds, leaves and roots bark of the tamarind tree have been used

to treat various problems like abdominal pain, diarrhoea and dysentery, bacterial infections and parasitic infestations, wounds, constipation and inflammation,” said one of the professors, Shaily Tomar.

Lectin, a diverse group of proteins derived from plant sources, are known to bind to glycan sugars. Its use as antiviral has been extensively studied for a range of viruses, including HIV and HPV.

The IIT professors, in a study, have shown that a lectin derived from tamarind seeds bind to glycans or sugar molecules having N-acetylglucosamine (NAG) on the capsule of viruses, thereby preventing the entry of the virus into the host cells.



The researchers at the pre-muim institute have isolated lectin from tamarind seeds using chromatography and have studied the binding of the lectin molecules to the glycan in the viral capsule by a process called Enzyme-Linked ImmunoSorbent Assay (ELISA).

“Not only did the chikungunya virus lose 64 per cent of its infectivity on treatment with the lectin, but the levels of viral RNA in the cells were also found to reduce to nearly 45 per cent. This study has, for the first time, evaluated the antiviral use of tamarind seed-derived lectin having specificity for NAG and assessed its ability to block the entry step of the virus,” Tomar added.