



Tamil Nadu Agricultural University
Coimbatore – 641 003



Dr. M. Rajavel, Ph.D.,
Public Relations Officer
Mobile: 94890 56730

Phone: 0422 - 6611302
Fax: 0422 – 2431821
E-mail: pro@tnau.ac.in

To
The Editor,
Sir,

Date: 22.07.2025

I request that the following message may kindly be published in your esteemed daily:

TNAU was awarded with a patent on Nano herbicide

A patent entitled “Nano Emulsion Based Botanical Herbicide and Preparation Method Thereof” has been awarded recently to Tamil Nadu Agricultural University by the Controller of Patents, The Patent Office, Government of India with Patent No: 568788. The inventors of the patent are Dr. N. Swathika, Dr K S Subramanian and Dr. S. Marimuthu.

This patent is the outcome of the Doctoral student’s research work carried out at the Centre for Agricultural Nanotechnology for the development of a novel form of herbicide using naturally produced allelopathic chemicals derived from *Eucalyptus citriodora*. *Eucalyptus* plants produce volatile metabolites that inhibit the neighbouring plants in the natural ecosystem. The fallen leaves surrounding the trees release a wide array of terpenoids especially eucalyptol and citronellal. Since these compounds are highly volatile in nature, efforts were undertaken to develop nano-system to encapsulate them in a micelle with a guar gum as a biopolymer. The product was developed using two-step process involving high pressure homogenization and ultra sonication. This bio-nano-herbicide has both pre-emergence and post-emergence herbicidal action against a notorious grassy weed *Echinochloa crusgalli*. There was a pre-emergence control of weed seeds at 1000 ppm while highest post-emergence toxicity was observed at 1% spray of nano-emulsion.

Public Relations Officer