

In vitro propagation and evaluation of antimicrobial and antioxidant potential of an endangered herb - *Cassia tora* to explore its nutraceutical values

Sumangala Rao¹ and C. Suresh²

¹Department of Biotechnology, Jawaharlal Nehru Technological University-Hyderabad, India

²Department of Biochemistry, National Institute of Nutrition-Hyderabad, India

C. tora, an annual herb growing in Asian countries, is edible in South East Asia by local folk fore. It is known medicinal plant as a laxative, antiperiodic, in leprosy, ringworm, bronchitis and cardiac disorders, ophthalmic, and skin disorders. There is an Ayurvedic formulation called "chakramada tailamu". *C. tora* constitutes an Ayurvedic preparation 'Dadhughnavati', which is one of the successful antifungal formulations.

Leaf extracts of the plant with petroleum ether, ethyl acetate and methanol were analyzed for antimicrobial and antioxidant activities. As this herb is seasonal, in vitro regeneration was done using MS medium supplemented with NAA and BAP. *C. tora* expressed good activity against all human pathogens used for study. The results showed very high inhibitory activity against skin pathogens like *Staphylococcus* and *Candida albicans*. *C. tora* has very strong antioxidant activity; this is reflected by the least IC₅₀ value of 60 micrograms for *C. tora* methanol extract. As the wild population of this plant species has become vulnerable to extinction, measures are needed to conserve it using tissue culture and other techniques. In vitro propagation provides a source of these plants in all seasons and *C. tora* exhibited rapid production of shoots. This study reveals a fairly good correlation between traditional therapeutic use and in vitro antimicrobial activity. *C. tora* which exhibited strong antibacterial and antioxidant values thus can be regularly used in diet to fight oxidative stress.

sumarao123@yahoo.com