

Impact of environmental factors on citral concentration in the lemongrass oil distilled from *Cymbopogon citratus* (DC.) Stapf.

Authors:

Sangeeth Thekkan¹,
Tamilselvi SS²,
Venkatachalapathy A¹ and
Paulsamy S¹

Institution:

1. Department of Botany,
Kongunadu Arts and Science
College, Coimbatore-641
029, Tamil Nadu, India.

2. R and D, Bharathiar
University, Coimbatore-641
046, Tamil Nadu, India.

Corresponding author:
Paulsamy S

ABSTRACT:

Citral, a terpene aldehyde in the lemongrass oil distilled from *Cymbopogon citratus* determines the market value of the oil, based on its concentration. The quantity of citral present in the oil depends on the environmental factors of the habitats where the grass is growing. To diagnose the factors responsible for higher content of citral, lemongrass oil samples collected from 17 sites of different environmental conditions in Kerala and Tamil Nadu states of India viz., Mananthavady, Pulpally, Meppadi, Ambalavayal, Kolamala, Malayalapuzha, Pazhakulam, Vadasserikara, Konni, Marayoor, Kandallloor, Kodanthur, Mavadappu, Kulipatti, Kurumalai, Aattumalai and Poochikotambarai in different months in an year were analyzed. The study revealed that alkaline soil favours more concentration of citral in the oil of *C. citratus*. However, regression analysis exhibited that soil alkalinity in combination with maximum and minimum temperatures, relative humidity, rainfall and altitude exerts synergistic effect over the concentration of citral in the lemongrass oil. Based on this fact, it was identified that the sites in Anaimalais of Western Ghats, Tamil Nadu viz., Kulipatti and Kurumalai are having favourable environment for citral concentration in the oil of *C. citratus*.

Keywords:

Cymbopogon citratus, Citral, Essential oil, Lower Western Ghats, India.