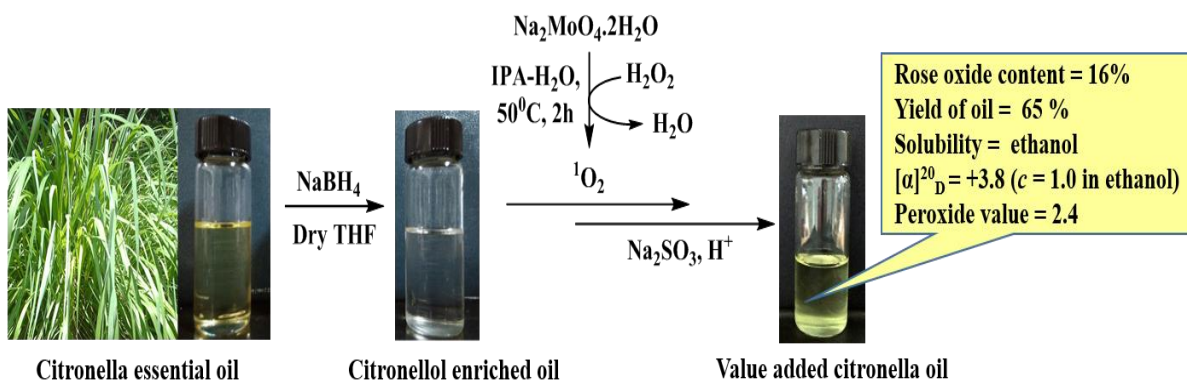


Olfactory value addition to low value citronella essential oil

Researchers including Dr. Bhuwan Bhushan Mishra, Mr Umesh Singh and Dr. Rajender Singh Sangwan at DBT's Center of Innovative and Applied Bioprocessing (-CIAB), Mohali have developed a chemical process of improvement in the fragrance and olfactory properties of low value essential oil of Citronella (*Cymbopogon winterianus*). The process was developed by enriching it with mainly *cis*-rose oxide, and thereby, improved the commercial value, utility, and use range in *C. winterianus* oil.



The invention involved a novel process of *in-situ* production of *cis/trans*-rose oxide in the low value essential oil of Citronella, through the chemical transformative steps of sodium borohydride based reduction, followed by peroxidation using hydrogen peroxide in presence of sodium molybdate dihydrate using isopropanol-water as solvent and cyclization with acids, whereby the resulting essential oil preparation possesses novel and better fragrance/olfactory note and may find immense uses including production of pure rose oxide. Fragrance improvement of citronella essential oil by its enrichment with rose oxide has received a patent (P. no. 323241).

The volatile oils obtained from many plants have poor commercial value due to the lack of fine flavor in them. These include citronella (*Cymbopogon winterianus*), palmarosa (*Cymbopogon martinii*), and lemongrass (*Cymbopogon flexuosus*). In order to upgrade the commercial value of such volatile oils, some fine flavor can be imparted by changing their olfactory impression through induction of certain rare volatiles of high olfactory significance. Rose oxide occupies top rank among the volatiles of high olfactory significance. Naturally it occurs as a minor but

precious constituent of essential oils obtained from *Rosa damascene* and *Pelargonium* spp. High cost and limited availability of natural rose oxide restricts its pervasive application in high-value perfumes.

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