

Advancements in Environmental Biotechnology



Dr. Roohi
Dr. Alvina Farooqui
Dr. Aisha Kamal

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Editors

Dr. Roohi

Dr. Alvina Farooqui

Dr. Aisha Kamal

Department of Environmental Science
Integral University, Lucknow (U.P) INDIA



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Dr. Roohi, Dr. Alvina Farooqui and Dr. Aisha Kamal

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CHAPTER 4
**EFFECT OF BRASSINOLIDE AND SALICYLIC ACID ON GROWTH,
QUALITY AND QUANTITY OF ESSENTIAL OIL COMPONENTS IN
PALMAROSA (*CYMBOPOGON MARTINII*)**

Imran Ansari¹, Ahamad Faiz Khan^{1*}, Farina Mujeeb², Bushra Ahmad¹ Suhail Ahmad¹,
Gyanendra Tripathi¹

¹Department of Bioengineering, Integral University, Lucknow, Uttar Pradesh, India.

²Department of Biosciences, Integral University, Lucknow, Uttar Pradesh, India.

^{1*}Corresponding author: faizkhan@iul.ac.in

Abstract

Palmarosa (*Cymbopogon martinii* [Roxb.] Wats. Var. motia) is an important aromatic grass, yielding an essential oil which is highly profound and strong rose like odour widely distributed in tropical and subtropical regions. The main components of oil are geraniol and geranyl acetate (Khanuja *et al* 2005). The essential oil from *C. martinii* is widely used as a valuable component for perfumes, cosmetic and pharmaceutical products (Singh K *et al* 1996) and against the action of various bacteria, fungi and microorganisms (Duarte MC *et al* 2005). The essential oil also has some of the important properties such as insect repellent and is also used in aromatherapy, due to these applications, essential oil demand in the domestic and international market has increased, which has stimulated its cultivation. Many factors including age, seasonal variation, nutrition, temperature and phytohormones have an influence on accumulation and metabolism of secondary metabolites. There are numerous reports in the literature concerning the effects of growth regulators which stimulate growth and terpenoid biosynthesis in various aromatic plants, which can result in beneficial changes in quality as well as quantity of terpenoids (Shukla *et al* 1992). Biosynthesis of terpenoids is dependent on primary metabolism e.g. photosynthesis and oxidative pathways for carbon and energy supply (Singh *et al* 1990).

Keywords: Plant growth regulators, BR, SA Essential Oils, Citral, Geraniol