



## CHAPTER 5

### Essential Oil as Antimicrobial

**Abhishek Tiwari<sup>1\*</sup>, Varsha Tiwari<sup>1</sup>, Bimal Krishna Banik<sup>2\*</sup>, Biswa Mohan Sahoo<sup>3</sup>**

<sup>1</sup>Faculty of Pharmacy, Pharmacy Academy, IFTM University, Lodhipur-Rajput, Moradabad 244102, Uttar Pradesh, India;

<sup>2</sup>Department of Mathematics and Natural Sciences, College of Sciences and Human Studies, Prince Mohammad Bin Fahd University, Al Khobar 31952, Kingdom of Saudi Arabia;

<sup>3</sup>Roland Institute of Pharmaceutical Sciences, Berhampur 760010 affiliated to Biju Patnaik, University of Technology (BPUT), Rourkela, Odisha, India;

Email: [abhishekt1983@gmail.com](mailto:abhishekt1983@gmail.com); [bimalbanik10@gmail.com](mailto:bimalbanik10@gmail.com)

#### **Abstract:**

From both a medical and monetary perspective, antibiotic resistance is a major issue. Using too many anti-infection medications at once or not using them correctly causes this. The spread of resistance genes from one bacterial species or group to another exacerbates the problem. Despite the fact that there are evaluations of the literature concerning the antibacterial properties of EOs, there are not many reviews that center on synergism verified by quantitative microbiological investigation following brief treatment. Current issues with EO antibacterial complexes are discussed in this chapter. The leakage of cytoplasmic materials (DNA, RNA, and proteins), as well as the impact on proton motive force, are all discussed in relation to the impact of antimicrobials on cell wall, membrane integrity and permeability. The antimicrobial effects of terpenoids and terpene derivatives such as monoterpene, diterpene, sesquiterpene, and meroterpene are also covered.

**Keywords:** Eos, meroterpene, diterpene, monoterpene, antimicrobials