

# Extraction of Mint Oil From *Mentha Piperita* Leaves

**Dr. Shaikh Mehmood Dawood<sup>1</sup>, Ms. Samiya Nikhat<sup>2</sup>, Vaibhav Ramnath Iaggad<sup>\*3</sup>**

1. Associate Professor, Aurangabad Pharmacy College, Dr, Babasaheb Ambedkar Technological University. CHS nagar, Aurangabad, Maharashtra, India.
2. Assi. Professor Aurangabad Pharmacy College, Dr, Babasaheb Ambedkar Technological University. CHS nagar, Aurangabad, Maharashtra, India.
3. Student of Aurangabad Pharmacy College, Dr, Babasaheb Ambedkar Technological University. CHS nagar, Aurangabad, Maharashtra, India.

**Abstract:** *The present study focuses on the extraction, characterization, and evaluation of essential oil from Mentha piperita (peppermint) leaves. The primary aim was to extract peppermint essential oil and assess its physicochemical properties, antioxidant potential, and antibacterial activity. The oil was extracted using three different methods: steam distillation, solvent extraction, and Soxhlet extraction. Among the methods, Soxhlet extraction yielded the highest oil content ( $1.5 \pm 0.12$  mL/100 g for fresh leaves), while steam distillation produced the lowest yield ( $0.9 \pm 0.14$  mL/100 g for dried leaves). Gas chromatography revealed 26 volatile components in the essential oil, including menthol, menthone, and menthyl acetate as major constituents. The oil exhibited significant antibacterial activity, particularly against Staphylococcus aureus ( $19 \pm 1.41$  mm) and Salmonella ( $16.5 \pm 2.12$  mm), while showing limited to no effect against Escherichia coli and Klebsiella pneumoniae. The results confirm the presence of potent bioactive compounds in peppermint oil, supporting its applications in pharmaceuticals and food preservation due to its antimicrobial and antioxidant properties.*

**Keywords:** Mentha piperita, Peppermint oil, Essential oil extraction, Hydro-distillation, Soxhlet extraction, Antibacterial activity, Gas chromatography, Menthol, Volatile compounds

