

A Review: Efficiency of essential oil extraction methods of genus *Blumea* and its therapeutic values.

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Introduction

Essential oil can be defined as the odoriferous bodies of an oily nature obtained almost exclusively from vegetable sources, generally liquids at ordinary temperatures and volatile decomposition. The occurrence of essential oils, or volatile oils, is very widespread in the plant kingdom. As their second name implies, they are volatile in steam. In India hundreds of aromatic substances including cinnamon, ginger and sandalwood were recorded in Vedic literature around 2000 BC. Essential oils occurs in the most part of plant anatomy like leafs, roots, flowers etc. Essential Oils are very important natural products which can be used as a raw material in many fields like aromatherapy, perfumes, cosmetics, phototherapy, spices and nutrition. Generally the total content of essential oil in plants is very less about less than 1%. Essential Oils is a chemical composition of about 50 individual chemical compounds out of which only one of the compound is responsible to show the therapeutic value of essential oil. So essential oils are used to cure many diseases like skin allergies, etc. Essential Oil consists of chemical composition which includes compounds like terpenoids, sesqi terpenoids, ketones, aldehydes, flavanoids, esters, flavanoids and many more. By the analysis of other articles terpenoid is the chemical compound shows. higher percentage in essential oil and which is very important to show therapeutic values for that oil.

About *Blumea* Genus:

Asteraceae is an very large and widespread family or flowering plants. The family has more than 23600 accepted species, spread across 1620 genera and 13 subfamilies. Taxonomy of *Blumea* Genus is as follows:

Family: Asteraceae
Subfamily: Asteroideae
Tribe: Inuleae
Genus: *Blumea*

Genus *Blumea* is found in the tropical and subtropical zones of asia, especially the Indian subcontinent and Southeast Asia. Genus *Blumea* has more than 104 accepted species. Many species of genus *Blumea* are used as traditional Chinese medicines. Also used as a decorative plants.

Extraction Methods of Essential Oils:

Extraction is the process in which separation of medicinally active portions of plants from inactive components of plants. The Process used are called as

Extraction Methods. There are various methods involved for extracting essential oil from plant material which are as follows:

Maceration, Infusion, Digestion, Decoction Percolation, Hot Continuous Extraction (Soxhlet), Aqueous Alcoholic Extraction by Fermentation, Counter Current Extraction, Ultrasound Extraction, Super Critical Fluid Extraction, Phytonics Process, Hydro Distillation, Water Distillation, Water and Steam Distillation, Direct Steam Distillation, Microwave Extraction Method

If we go through reference with other articles it is clear that all of this techniques are used for extraction of essential oil but out of which Comparative study explains the steam distillation and microwave extraction method of essential oil are most efficient and high yield method to enhance the release of more bioactive agents.

Characterization of essential oil:

Comparative study of essential oil of genus *blumea* shows the complex mixture of 50 individual chemical compounds which are characterized by Gas Chromatography and Mass Spectroscopy (GC-MS). Review of papers shows that out of these multiple chemical compound present in essential oil only one of the chemical compound has the major percentage present and that is responsible for the therapeutic values of essential oils. Generally terpenoids, mono terpenoids and sesqi terpenoids are the major chemical compounds present in this essential oils. Other chemical compounds like aldehydes, ketones, esters, flavanoids etc. also present in essential oils.

Conclusion and Results:

From the references that are used for comparative study of yield of essential oil from *blumea* species available in environment. Essential Oil extraction of *blumea* species can be done by methods such as Maceration, Infusion, Digestion, Decoction Percolation, Hot Continuous Extraction (Soxhlet), Aqueous Alcoholic Extraction by Fermentation, Counter Current Extraction, Ultrasound Extraction, Super Critical Fluid Extraction, Phytonics Process, Hydro Distillation, Water Distillation, Water and Steam Distillation, Direct Steam Distillation, Microwave Extraction Method. With References that were used to evaluate the quantity that we can yield from above methods are very different. But two methods that gives very high yield are Steam Distillation and microwave extraction Method. As the yields are high for both Methods

generation of bioactive agents is also very high. It explains that Comparative study explains the steam distillation and microwave extraction method of essential oil are most efficient and high yield method to enhance the release of more bioactive agents.

References:

1. A.J. Harborne *Phytochemical Methods A Guide to Modern Techniques of Plant Analysis*
2. *Phytochemical screening and Extraction: A Review* Prashant Tiwari*, Bimlesh Kumar, Mandeep Kaur, Gurpreet Kaur, Harleen Kaur Department of Pharmaceutical Sciences, Lovely School of Pharmaceutical Sciences, Phagwara, Punjab
3. *Methods to Study the Phytochemistry and Bioactivity of Essential Oils* Mouhssen Lahlou* Laboratory of Biochemistry, Cellular and Molecular Biology, Department of Biology, FSU: Biology and Health, Faculty of Sciences Ain Chock, Casablanca, Morocco
4. *Medicinal and Aromatic Plants—Future Opportunities* Lyle E. Craker
5. *Chemistry Of Essential Oils Notes* by Andrew Pengelly 2003
6. *Chemical Components in Volatile Oil from Blumea Balsamifera (L.) DCMD.* Nazrul Islam Bhuiyan*, Jasmin Uddin Chowdhury and Jaripa Begum BCSIR Laboratories, Chittagong, P.O. Chittagong Cantonment, Chittagong-4220, Bangladesh
7. *Phytochemical Profile and Antioxidant Activity of the Essential Oil from Blumea Eriantha DC* Prajakta P. Pednekar, Babu V. Vakil, Ramesh T. Sane, Ajit G. Datar* Guru Nanak Institute for Research and Development, G. N. Khalsa College, Matunga, Mumbai 400019, Maharashtra, India.