



UNIVERSITY OF LIFE SCIENCES "KING MIHAI I" FROM
TIMISOARA
"YOUNG PEOPLE AND MULTIDISCIPLINARY RESEARCH
IN APPLIED LIFE SCIENCES"



"Young people and multidisciplinary
research in applied life sciences"

21-22 November 2024

ESSENTIAL OIL EXTRACTION TECHNIQUES FOR LAVENDER: COMPARING TRADITIONAL AND MODERN METHODS

ROXANA JIGAU, GEORGE MORAR¹, LAURA VORNICU¹, DIANA OBISTOIU¹, RAUL PASCALAU¹,

¹University of Life Sciences" King Mihai I" from Timisoara, 300645, 119, Calea Aradului, Timisoara, Romania

e-mail: raul.pascalau@usvt.ro

Abstract: The complex link between how lavender smells and how it is extracted is important for understanding both old and new ways of making essential oil. Lavender oil has typically been made using steam distillation and solvent extraction, methods that have been around for many years. These techniques show the cultural background of lavender farming and the slow changes in extraction methods due to new technology and growing scientific knowledge. On the other hand, modern methods like cold pressing and supercritical carbon dioxide extraction provide better efficiency and yield while keeping the oil's chemical makeup unchanged. Looking at these different methods reveals the problems and advantages of each, placing this study at the crossroads of tradition and new ideas. In the end, this comparison will clarify how extraction methods affect quality, sustainability, and the economic success of lavender oil production. Lavender is more than just a plant; it is important for aromatherapy due to its various health benefits.

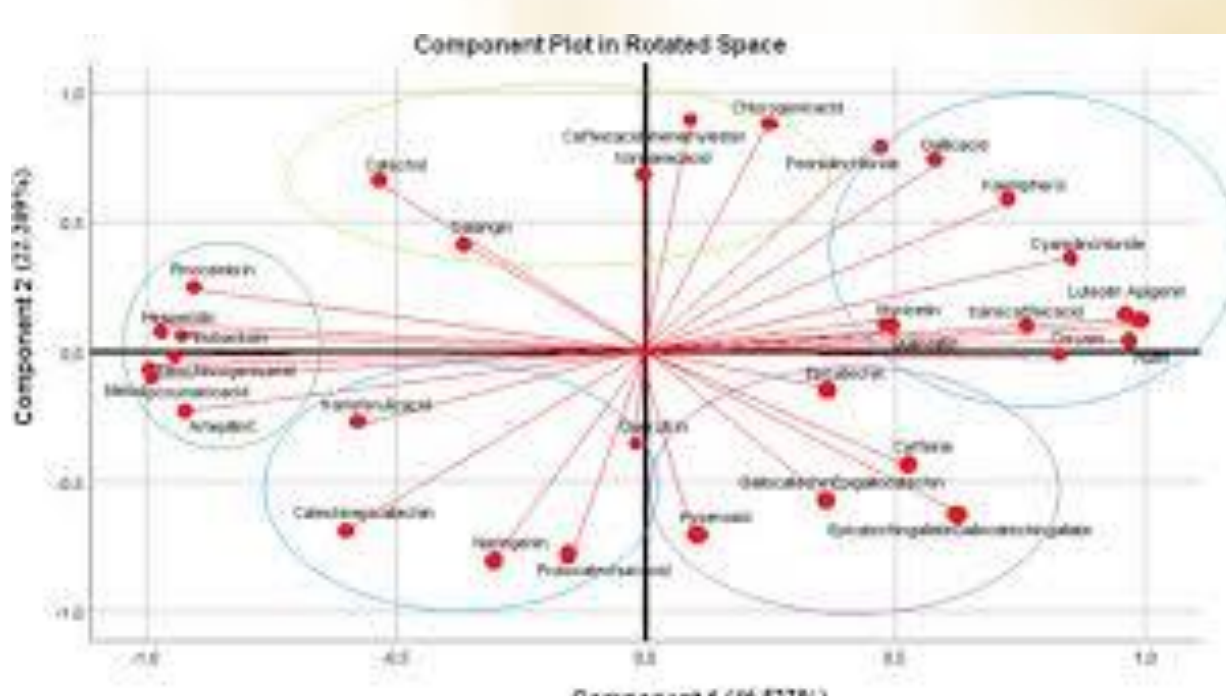
Introduction

The essential oil from *Lavandula angustifolia*, known as lavender oil, is famous for its ability to calm and lift moods. It is often used to ease stress and encourage relaxation, thanks to its rich chemical makeup. This makes it useful not just in personal care and beauty products but also in medicines, showing a growing market that combines health and eco-friendliness. Additionally, the scents in lavender greatly enhance the experience during aromatherapy, making it more engaging and effective for emotional and physical healing. The rising demand for lavender essential oil underscores the need for eco-friendly extraction methods, highlighting the role of both traditional and new techniques in maintaining the plant's beneficial qualities while satisfying what consumers want.



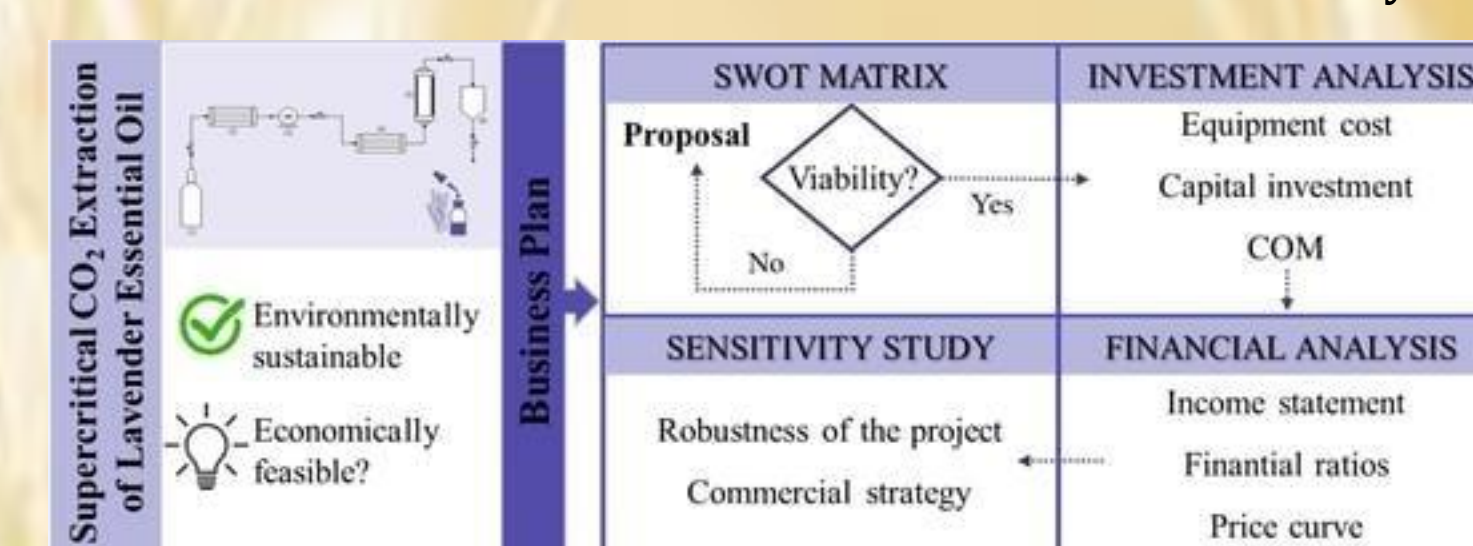
Material and method

Old ways to get essential oils, like steam distillation and cold pressing, have been used for many years and are the base for newer techniques. These methods take advantage of how plant compounds naturally evaporate to produce strong oils that keep their smell and health benefits. For instance, steam distillation, a common method, uses steam on plant materials to help release essential oil molecules and reduce heat damage. This approach, while proven over time, can be hard work and may produce different amounts of oil depending on how fresh the plants are and the exact conditions used for extraction. Also, cold pressing is known for citrus oils but only works for some plants and might lead to lower quality oil. Still, the usefulness of these traditional techniques is shown by their long history and ongoing use in getting essential oils, highlighting their environmental friendliness and cultural importance



Results and discussions

Extracting essential oils, especially from lavender, requires a good understanding of how old and new methods can affect both the amount and quality of the oils. Traditional ways, like steam distillation, have been respected for making oils that keep the rich smells of the plants. But new technologies, such as supercritical carbon dioxide extraction, can increase the amount of oil while usually keeping the quality high. Studies show that essential oils made with traditional methods might have differences in their ingredients, which could cause changes in strength and smell (Milojević Svetomir Ž. et al.). On the other hand, new methods provide a more controlled way to get the oils, which helps improve efficiency and maintain the sensitive components ('IntechOpen'). Therefore, when choosing between these methods, it is important to focus not only on the amount but also on keeping the aromatic richness of the essential oils, which matches both what consumers want and what works commercially.



Conclusions

In looking at findings about how to extract essential oils from lavender, it is clear that both old and new methods have their own benefits that should be thought about. Older methods like steam distillation have been reliable, keeping the true and complex chemical makeup of essential oils, as mentioned in research on different plant oils (Mohale et al.). On the other hand, new extraction methods have brought about better efficiency and helped keep volatile compounds that might have been lost before, meeting today's consumer preferences for pure and natural ingredients in cosmetics (Dabral et al.). In summary, this analysis shows the need to choose the right extraction methods to improve how well lavender essential oil works and smells. As the trend grows for natural and safe scents, using a mix of both old and new extraction methods may be the best way to ensure that the quality and health benefits of lavender are fully achieved.

