



POPULAR SCIENCE ARTICLE

Scented Geranium: A fragrant pathway to rural prosperity in North Karnataka

Ganga M^{1*}, Shashidhar M. D², Sangamesh³, Pooja P. S¹ and T. N. Sachinkumar⁴¹Department of Plantation, Spice, Medicinal and Aromatic Crops, University of Horticultural Sciences, Bagalkot 587104, Karnataka, India.²Directorate of Extension Education, University of Horticultural Sciences, Bagalkot 587104, Karnataka, India.³Ph.D Scholar, Department of Post Harvest Management (Center of Excellence), Navsari Agricultural University, Gujarat 396 450, India.⁴Department of Plantation, Spice, Medicinal and Aromatic Crops, University of Horticultural Sciences, Bagalkot 587104, Karnataka, India.⁴Horticulture Extension Education Unit, University of Horticultural Sciences, Bagalkot 587104, Karnataka, India.*Email: gangamurthy2230@gmail.com

Received: 23 February 2026

Revised: 24 February 2026

Accepted: 25 February 2026

Published online: 25 February 2026

Article ID: SR01090

Citation: Ganga M., Shashidhar M. D., Sangamesh, Pooja P. S., & Sachinkumar, T. N. (2026). Scented Geranium: A fragrant pathway to rural prosperity in North Karnataka. *Scientia Review*, 2(2), 55-57

Abstract

Scented geranium (*Pelargonium* spp.) is gaining recognition as a profitable aromatic crop capable of enhancing rural livelihoods in North Karnataka. With the growing global preference for natural essential oils, small-scale steam distillation units installed directly at the farm level are emerging as viable micro-enterprises. This article outlines the economic potential of geranium oil, its market demand, investment feasibility, sustainability factors, and the broader opportunities available for farmers when they adopt value-addition practices.

Keywords: Scented geranium, essential oils, rural livelihoods, steam distillation, aromatic crops, value addition.

Introduction

A gentle whiff of rose-like fragrance and a promising new income stream for farmers! Scented geranium (*Pelargonium species*), a hardy aromatic crop, is silently transforming rural livelihoods in Northern Karnataka. Beyond its soothing aroma and cosmetic value, this wonder plant is giving rise to a profitable agri-enterprise - Essential oil distillation units operated right at the farm level. Today, with global demand for natural fragrances and essential oils rising sharply, farmers are exploring new ways to add value to their produce. Among these, steam distillation of scented geranium leaves has emerged as a game-changer.

Geranium Oil: A market that smells like money

Today's essential oil market extends beyond perfumes and cosmetics. Consumers increasingly seek natural fragrances and wellness products, driving industries such as skincare, aromatherapy, herbal medicine, food flavouring and eco-friendly home care. Geranium oil is especially prized for its floral aroma and therapeutic effects including mood

enhancement, skin rejuvenation and antimicrobial properties (Wells and Lis-Balchin, 2002). The global demand for geranium oil is rising recent market-analysis estimates show a steadily growing global market for geranium essential oil, reflecting increasing use in perfumery, skincare and natural wellness products.

For farmers, this means a valuable opportunity to move up the economic ladder especially when they process their own crop instead of selling raw leaves.

Farm-Level Distillation Units: Turning Green Leaves into Liquid Gold

One of the biggest reasons for scented geranium's popularity is the possibility of installing small-scale steam distillation units directly on farms. These units allow farmers to convert freshly harvested leaves into essential oil within hours, ensuring higher purity and better market prices. A recent economic feasibility study in Northern Karnataka estimated that a 1.5-tonne capacity distillation unit costs around ₹ 6,56,309 including boiler, condenser, distillation chamber, oil separator, and a basic shed (Pooja *et al.*, 2025). Once

established, the unit processed about 248.6 tonnes of herbage per year, yielding roughly 232.26 kg of essential oil. Such figures demonstrate that what initially seems like a heavy investment can yield significant returns over time for farmers willing to adopt this value-addition approach.

Strong Financial Returns: A Highly Rewarding Venture

A detailed economic analysis revealed that geranium oil distillation is one of the most financially rewarding agri-enterprises available to small and marginal farmers today. The same study recorded gross returns of ₹ 23,10,053 and net returns of ₹ 4,18,854 per year under the described model. The cost of production per kg of essential oil was estimated at ₹ 8,194, and the break-even output was only 68 kg which could be produced in about 45 days of operation. Other financial indicators were favourable: benefit-cost ratio (B:C) of 1.22, pay-back period around 3.9 years, and a high Internal Rate of Return (IRR) of 89 %. These numbers make geranium distillation a relatively low-risk, high-reward rural business model when implemented properly.

Why Geranium Distillation Is Sustainable

Geranium-based enterprises are not just profitable; they are sustainable and farmer-friendly. Since farmers cultivate the raw material themselves, there is no dependency on outside procurement or long-distance transport ensuring consistent supply and reducing operating costs. The demand for geranium oil across cosmetic, wellness, and aromatherapy industries is strong and stable, providing long-term market security. Additionally, the enterprise generates employment for rural youth in roles such as cultivation, distillation, maintenance, marketing and value-addition.

Moreover, agronomic studies show that essential oil content and yield of geranium depend significantly on cultivar choice, climate, and environmental conditions (Lothe *et al.*, 2023). This adaptability offers flexibility: farmers can select suitable cultivars and agro-climatic zones to optimize yield and quality, improving sustainability across different regions.

Hydrosol: The Hidden Treasure

Apart from essential oil, the steam distillation process also yields geranium hydrosol, a fragrant water rich in water-soluble aroma compounds. In some cases, a portion of essential oil remains dissolved in the distillation water (hydrosol) and can be recovered using methods such as solvent extraction, thereby increasing

total oil yield (Rao *et al.*, 2002). Hydrosol and secondary recovered oil have their own uses in face toners, room fresheners, spa therapies, natural cleaners and aromatherapy. Properly packaged and marketed, hydrosol can become a profitable secondary product, significantly enhancing the overall value derived from the distillation process.

Challenges and the Way Forward

Despite many benefits, geranium distillation faces certain challenges. The low oil content per unit weight of herbage means a very large quantity of biomass must be harvested, transported and distilled making labour, transport and distillation costs significant. Also, essential oil yield and quality fluctuate depending on cultivar, season, harvest timing and post-harvest handling. For example, in a multi-location study in western India, essential oil yields varied between about 0.14% to 0.22% depending on cultivar and local conditions.

Therefore, to achieve consistent profitability, farmers need proper agronomic planning: selecting suitable cultivars, following optimal harvest practices, and ensuring efficient distillation and post-processing. Additionally, marketing remains a challenge: unless farmers organize through cooperatives, Farmer Producer Organizations (FPOs) or collective marketing channels, they may remain vulnerable to fluctuating market prices and middlemen exploitation. With supportive policies subsidies for equipment, technical training and access to broader markets geranium distillation can truly flourish as a sustainable rural enterprise.

Conclusion

Scented geranium is proving to be an excellent crop for value addition, entrepreneurship, and rural empowerment especially in regions like North Karnataka. Its essential oil commands high demand globally and farm-level distillation offers farmers a sustainable and profitable livelihood option. With expanding demand for natural fragrances and wellness products, and with appropriate cultivar selection, agronomic practices, and institutional support, the future of geranium-based enterprises looks extremely promising. By improving marketing channels, exploiting by-products like hydrosol, and strengthening farmer networks, scented geranium has the potential to become a key aromatic industry in rural India.

References

- Pooja P. S., Hiremath J. S., Sachinkumar T. N. & Kerutagi M. G. (2025). Economic feasibility of scented geranium essential oil distillation

- unit in Northern Karnataka. *Journal of Spices and Aromatic Crops*, 34(1): 119-127.
- Lothe, N. B., & Verma, R. K. (2023). A study on geranium (*Pelargonium graveolens* L' Herit ex Aiton) cultivars' productivity and economics as intervening by diverse climatic conditions of the western peninsular region of India. *Industrial Crops and Products*, 200, 116882.
- Rao, B. R., Kaul, P. N., Syamasundar, K. V., & Ramesh, S. (2002). Water soluble fractions of rose-scented geranium (*Pelargonium* species) essential oil. *Bioresource Technology*, 84(3), 243-246.
- Wells, R., & Lis-Balchin, M. (2002). Perfumery and cosmetic products utilising Geranium oil. In *Geranium and Pelargonium* (pp. 259-262). CRC Press.