

Personal details



Er. Rahul Kumar Rout

Scientist

Discipline: Agricultural Structures and Process
Engineering

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Research Interest

Drying; Extraction; Encapsulation; In-vitro digestion studies; Mathematical modelling; Machine design

Research Highlights

Drying studies of medicinal, aromatic, and aquatic plants

Extraction of bioactive compounds from medicinal, aromatic, and aquatic plants

Encapsulation of bioactive compounds obtained from medicinal, aromatic, and aquatic plants

In-vitro digestive studies of medicinal, aromatic, and aquatic plants

Membership/fellowship

Life member – Indian Society of Agricultural Engineers (ISAE)

Life member – Association of Food Scientists and Technologists (India) (AFST(I))

Research publication/patent/technology

Rout, R. K., Kumar, A., & Rao, P. S. (2026). Process optimization and multivariate analysis of bioactive compounds from Indian Borage (*Plectranthus amboinicus*) leaves using a combined microwave-ultrasound-ultraviolet assisted extraction system. *Journal of Food Science and Technology*, 1-11.

Rout, R. K., Miatur, S., & Kamdi, H. S. (2026). Biofortification and Millet-Based Functional Ingredients. In *Millet Processing Technologies: Advancements, Applications and Global Perspectives* (pp. 201-214). Singapore: Springer Nature Singapore.

Rout, R. K., Sivaranjani, S., Puja, N., Singh, S. M., Kumar, T. D., & Joshi, J. (2025). Valorization of fish wastes and by-products towards green circular bio-economy. *Next Research*, 2(4), 101037.

- Rout, R. K., Kukde, R. B., Sivamma, P., Kumar, A., & Prakash, R. (2025). Methodology for Extraction of Essential Oil Using Ultrasonic-Microwave-Assisted Hydrodistillation. In *Essential Oil Extraction from Food By-Products* (pp. 183-217). New York, NY: Springer US.
- Rout, R. K., Sivaranjani, S., Jayasree, J. T., Puja, N., Kumar, A., Singh, S. M., & Rao, P. S. (2024). Encapsulation: advanced techniques and applications. In *Structured foods* (pp. 13-44). CRC Press.
- Rout, R. K., Kumar, A., & Rao, P. S. (2024). A comparative assessment of drying kinetics, energy consumption, mathematical modeling, and multivariate analysis of Indian borage (*Plectranthus amboinicus*) leaves. *Journal of Food Process Engineering*, 47(5), e14630.
- Rout, R. K., Kumar, A., & Rao, P. S. (2021). A multivariate optimization of bioactive compounds extracted from oregano (*Origanum vulgare*) leaves using pulsed mode sonication. *Journal of Food Measurement and Characterization*, 15(4), 3111-3122.
- Rout, R. K., Kumar, A., & Rao, P. S. (2021). Encapsulation of oregano (*Origanum vulgare*) leaf polyphenols: Development, characterization and in-vitro release study. *Food Hydrocolloids for Health*, 1, 100028.