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### Ongoing Research Projects

- Utilization of Wild Himalayan Pear/Kainth (*Pyrus Pashia*) fruit for the sustainable livelihood of the financially weak section of the society in mid-hill region of Himachal Pradesh, funded by DST-SERB, Govt. of India for Rs. 35,17,932 lakhs for a duration of three years (Principal Investigator)

### Important Research Publications

- Walia A, Singh R, Kumar H, Singh TP and Kumar N. 2023. Comparison of the effects of novel processing technologies and conventional pasteurization on the retention of bioactive compounds of functional fig (*ficus racemosa*) juice. Journal of tianjin university science and technology, 20-32
- Singh R, Kumar N, Mehra R, Walia A, Kumar H, Sharma K and Thakur A, 2022. Colorimetric assay for visual determination of imidacloprid in water and fruit samples using asparagine modified gold nanoparticles. Journal of the Iranian Chemical Society, pp.1-9
- Aman J, Shahi NC, Lohani UC, Balodhi D, Singh R, Kumar N, Bhat MI and Kumar AP. 2022. Process Optimization for Development of Guar Gum-Based Biodegradable Hydrogel Film Using Response Surface Methodology. Bioinorganic Chemistry and Applications.
- Mehra R, Kumar S, Singh R, Kumar N, Rathore D, Nayik GA, Alabdallah NM, Monteiro A, Guiné RF and Kumar H. 2022. Biochemical, dielectric and surface characteristics of freeze-dried bovine colostrum whey powder. Food Chemistry: X, 15, p.100364.
- Walia A, Kumar N, Singh R, Kumar H, Kuma V, Kaushik R and Kumar AP. 2022. Bioactive compounds in Ficus fruits, their bioactivities, and associated health benefits: a review. Journal of Food Quality, pp.1-19.
- Singh R and Kumar N. 2021. Visual naked eye colorimetric determination of phorate pesticide using nanotechnology. Journal of Nano-and Electronic Physics, 13(2).
- Mehra R, Kumar S, Verma N, Kumar N, Singh R, Bhardwaj A, Nayan V and Kumar H. 2021. Chemometric approaches to analyze the colostrum physicochemical and immunological (IgG) properties in the recently registered Himachali Pahari cow breed in India. LWT, 145, p.111256.
- Singh R, Mehra R, Walia A, Gupta S, Chawla P, Kumar H, Thakur A, Kaushik R and Kumar N. 2021. Colorimetric sensing approaches based on silver nanoparticles aggregation for determination of toxic metal ions in water sample: A review. International Journal of Environmental Analytical Chemistry, pp.1-16.
- Singh R, Thakur P, Thakur A, Kumar H, Chawla P, V. Rohit J, Kaushik R and Kumar N, 2021. Colorimetric sensing approaches of surface-modified gold and silver nanoparticles for detection of residual pesticides: a review. International Journal of Environmental Analytical Chemistry, 101(15), pp.3006-3022.
- Singh R, Kumar N, Mehra R, Kumar H and Singh VP. 2020. Progress and challenges in the detection of residual pesticides using nanotechnology based colorimetric techniques. Trends in Environmental Analytical Chemistry, 26, p.e00086.

## Books and Manuals

- Umapathi R, Kumar N and Singh R (2026). Nanotechnology for Food Security and Quality Assurance. Published by CRC Press, Taylor & Francis Group.
- Singh R and Sharma A (2026). Kainth fal ka prasansakaran: krishak evem vidyarthi hetu vyavharik maragdarshika. CoH&F, Thunag, Dr YS Pamrar University of Horticulture and Forestry, Nauni, Solan.

## Awards & Recognitions

- Received Best Researcher Scholar Award in International conference on Global approaches in natural resources management for climate smart agriculture (GNRSA-2020) during pandemic era of covid 2019. Held on Feb 26-28, 2019 at Shobhit Deemed University, Meerut, UP, India
- Received Young Scientist Award in International Conference on Global Initiatives in Research, innovation and sustainable Development of Agriculture and allied Sciences (GIRISDA-2022). Held on June 6-8, 2022 at Guru Kashi University, Talwandi Sabo (Bathinda), Punjab, India
- Received second Prize in oral presentation for paper titled “Kainth (*Pyrus Pashia*), an underutilized fruit crop of Himalayan regions: importance, conservation and utilization strategies” during the International Conference on Sustainable Innovations in Agriculture, Veterinary and Allied Sciences (SIAVAS-2025) organized by University of Agricultural Sciences at Raichur, Karnataka.