

Kalpna Rayaguru, Ph.D.
Associate Professor,
Department of Agricultural Processing and Food Engineering



Education

- Ph.D. (Post Harvest Process and Food Engineering) GBPUAT, Pantnagar, 2002
- M.Tech (Post Harvest Engg), Indian Institute of Technology, Kharagpur, 1990
- B.Sc. (Ag. Engg. & Tech.), Orissa University of Agriculture and Technology, Bhubaneswar- 1987

Experience

Working in OUAT Bhubaneswar since 1990 in different capacities in teaching, research and extension and as Associate Professor, Department of Agricultural Processing and Food Engg. since Jan, 2001.

Externally Funded Projects/ schemes

- **Co –PI**, of the Project “Development of Solar Hybrid Dryer for Drying Kendu leaves” sponsored by OREDA (DST) , India
- **Co-Scientist** IDE sponsored Project “Integrating Markets, Products and Partners: An action-research to explore and develop a Marketing system for linking tribal community to market through value addition”

Courses taught

- Engg Prop of Biomaterials & Food Quality (B Tech.)
- Drying & Storage Engg (B Tech.)
- Engg Properties of Food Material (MTech)
- Storage Engg & handling of Agril Produce (MTech)

Students guided

- Guided 6 and co-guided 5 Master’s Student

Significant research contributions: (Machines/ Process Technology Developed)

- Aloe-vera gel extractor
- Raw Stone apple slicer
- Blended nutraceutical Aloe-vera RTS and Jelly
- Different formulations from stevia leaves, as herbal substitute of sugar (Powder, Extract, Pellets, Tablets)
- Value added products from raw stone apple (RTS, Squash, jam, toffee and bar)

- Value added products from under-utilized elephant apple and star-fruit (Osmo-dehydrated slices and RTS)

Present research interests

- Value addition, Storage
- Nutraceutical blended product development (under-utilized millets, fruits and vegetables and medicinal plants)

International visits / trainings

- Attended International Training Programme on “Workshop for Women on Management of Small and Medium Food-Processing Enterprise” at Makassar, Indonesia during 18-23 July, 2011 organized by Asian Productivity Organization, Tokyo and Ministry of Agriculture, Indonesia.

Honours and Awards

1. **Best oral presentation** in the technological session for the paper titled “Development and Performance Evaluation of Hand operated star-fruit slicer” in the national seminar organized on the occasion of the Regional Science Congress held at KIIT University, Bhubaneswar during Jan 27-28, 2014
2. **Best oral presentation** in the technological session in the national seminar organized on the occasion of the 16th Odisha Bigyan Congress held at Institute of Physics, Bhubaneswar during Nov 23-24, 2013.
3. **“Alka Manjari Rath Memorial Best Women Teacher / Scientists’ Award-2011-12”** on 24.08.2012 on the eve of foundation day of the University.
4. **“Best country paper presentation”** in International Training Programme on “Workshop for Women on Management of Small and medium Food-Processing Enterprise” at Makassar, Indonesia during 18-23 July, 2011, organized by Asian Productivity Organization, Tokyo and Ministry of Agriculture, Indonesia
5. **“KC Das Memorial award”** for the paper Drying characteristics and product quality of onion shreds in combination of HA, HP and MW drying, 53rd Annual technical Session, The **Institution of Engineers (India)**, Odisha State Centre held on 5th February, 2012.
6. **Gold medal** for the **“Best paper”** award in Agricultural, Mechanical and Environmental Engineering Division during the 56th Annual session of Orissa Engineering Congress held on 26th February, 2011, at Bhubaneswar.
7. **“Best paper”** award in national seminar on Sustainable Agriculture and Food security: Challenges and opportunities, held during 29-30th November, 2010 at Bhubaneswar organized by ODAT
8. **“Member Scientist, of Best team of Research”** award, 2010, Indian Society of Agricultural Engineers (ISAE), New Delhi.
9. **“Best Scientist”** of the University, 2009 (Orissa University of Agriculture and Technology)

10. **“Member Scientist”** of AICRP on Post Harvest Technology, OUAT, Bhubaneswar Centre which has been awarded as **‘Best Performing Centre’** by ICAR as per the recommendations of the Quinquennial Review Team for X Plan for AICRP on PHT.
11. **ICAR- SRF** leading to Ph. D. Programme, 1994
12. **GATE** ,leading to M.Tech Programme in IIT, Kharagpur, 1988
13. **B P Modi Gold medal for “Best graduate of the University”**, OUAT, 1987
14. **Gold medal for “Best graduate of the Faculty”**, CAET, 1987
15. **National Merit Scholarship B.Tech at OUAT, Bhubaneswar (1981-1987)**

Peer recognition

- Life Member, Asian Productivity Council, Tokyo, Japan
- Peer-reviewer for e-course content on NAIP sub-project on “ Development of e-course for B.Tech (Agril Engg)”, Anand Agril University, Anand, India.
- Peer-reviewer of the project proposals of Georgia National Science Foundation (GNSF) and DBT projects/ schemes proposal
- Member of sub-committee of “Post harvest management and value addition” in “Odisha State Farmers’ Commission” constituted by Agriculture Department, Govt of Orissa
- Invited as Resource person/ Guest faculty/ key speaker to different institutions of the State government, Indian Council of Agricultural Research, and Doordarshan.
- Invited as thesis evaluator, Question paper setter, moderator and external examiner to IIT, Central/ State Agricultural Universities
- Evaluator of DBT projects/ schemes proposal
- Member, Editorial board of one research journals and Referee of peer reviewed international /national journals articles

Publications

Filed two no. patents, contributed chapters in 7 books/manuals, 20 technical bulletins, 38 research papers in peer reviewed journals and more than 50 technical and popular articles.

Recent publications

International Journals

1. Dwivedy, S., **Rayaguru, K.** and Sahoo, G.R. 2013. Mathematical modeling and quality characteristics of microwave dried medicinal borage leaves. International Food Research Journal 20(2): 769-774
2. Suchismita Dwivedy, **Kalpna Rayaguru.** 2012. Response surface optimization of hot air-microwave combination drying of medicinal Indian borage leaves. International Journal of Medicinal and Aromatic Plants, 2(4):648-660

3. Suchismita Dwivedy, **Kalpna Rayaguru**, and G R Sahoo. 2012. Effect of Drying Methods on Quality Characteristics of Medicinal Indian Borage (*Coleus aromaticus*) Leaves. *Journal of Food Process Technology*,3(11): 2-6
4. **Rayaguru K, Pal, U.S. and Khan, Md. K.**, (2011). *Development and evaluation of betel leaf conditioning chamber. Agricultural Mechanization in Asia, Africa and Latin America (Japan)*. 42(3):61-65.
5. **Rayaguru Kalpana and Routray Winny**. (2011). *Microwave drying kinetics and quality characteristics of aromatic Pandanus amaryllifolius leaves. International Food Research Journal*. 18 (3): 1035-1042
6. **Rayaguru Kalpana and Routray Winny and Mohanty SN** (2011). *Mathematical Modeling and Quality Parameters of Air-dried Betel Leaf (piper betle l.) Journal of Food Processing and Preservation* 35(4):394-401.
7. **Rayaguru Kalpana, Pandey JP and Routray Winny**. (2011). *Optimization of Process Variables for Accelerated Aging of Basmati Rice. Journal of Food Quality*, 34:56-63.
8. **Rayaguru Kalpana and Routray Winny** (2010). *Effect of drying conditions on drying kinetics and quality of aromatic Pandanus amaryllifolius leaves. J Food Sci Technol* 47(6):668–673.
9. **Routray Winny and Rayaguru Kalpana** (2010). *Chemical Constituents and Post Harvest Prospects of Pandanus amaryllifolius leaves: A Review. Food Reviews International* 26 (3):230 – 245.
10. **Rayaguru Kalpana, Md K. Khan and Sahoo N. R.** (2010). *Water use optimization in zero energy cool chambers for short term storage of fruits and vegetables in coastal area J Food Sci Technol* 47(4):437–44.
11. **Rayaguru K., Md K Khan.** (2008). *Post harvest management of stevia leaves – a review. J Fd Sci Technol* 45(5):391-397
12. **Rayaguru K, Khan, Md. K., Sahoo, G.R. and Panda, M.K.**(2008). *Storage characteristics of betel leave. Agricultural Mechanization in Asia, Africa and Latin America*, 39 (3):42-45.
13. **Rayaguru K, Khan, Md. K., Sahoo, G.R. and Pal, U.S.** (2007). *Post harvest practices of betel leaves in Orissa. Agricultural Mechanization in Asia, Africa and Latin America (Japan)*. . 38(3):33-37.

National Journals

14. Dwivedy Suchismita, **Rayaguru Kalpana** (2013). *Adequacy of Blanching on Quality Characteristics of Medicinal Indian Borage Leaves. J. Agric Engg.* 46(1): 32-38

15. Sahoo, N. R., **Rayaguru, K.**, Sahoo, D. & Bebartta, J. P. (2009). Standardization of ginger syrup preparation. *J Res. Orissa Univ. Agric. Tech.* 27(1): 49-53.
16. **Rayaguru K** and Pandey JP (2009). Influence of milling and aging on cooking properties of indigenous aromatic rice. *J. Agric Engg.* 46(1): 32-38
17. **Rayaguru K** and Pandey JP (2009). Effect of natural aging on fatty acid profile of Pusa basmati rice. *ORYZA-An international journal on rice*, 46(2): 167-170
18. **Rayaguru K.** and. Bebartta JP (2008). Studies on dehumidified refrigerated storage of groundnut storage. *J. Agric Engg.* 45(4): 73-77
19. **Rayaguru K.** Sahoo N R, and Khan, Md. K. (2008). Effect of storage on quality of raw stone apple ready-to-serve beverage. *J. Agric Engg.* 45(1): 62-67
20. Khan, Md. K., **Rayaguru, K.** (2008): Enhancing income of tribal pine apple growers, *Indian Farming System*, 58(1): 37
21. **Rayaguru K** and Pandey JP (2008). Effect of degree of polishing on the biochemical and cooking quality of aromatic rice. *ORYZA-An international journal on rice*, 45(3):230-235
22. Mohanty T, Mohanty M and **Rayaguru K** (2008). Agro social influence on kitchen energy management and standardization of cooking. *Social Science International*, 24(1):104-110
23. **Rayaguru, K.**, Sahoo, G.R and. Khan, Md. K Mohanty S N(2007). Effect of drying and storage on quality characteristics of betel leaves. *J. Agric Engg.* 44(1): 65-66
24. **Rayaguru K**, Sahoo N.R., Sahoo, G.R, and Khan, Md.K (2006). Effect of variety on conditioning characteristics of betel leaves. *J. of the Indian Soc. Of Coastal Agric. Res:* 24(1) : 227-228
25. Mishra UK, Kanesh JS, Mandal AK, Das RK, **Rayaguru K** and Parija SC (2006). Potential of herbal galactogogues in milk production in ruminants. *The Indian Cow*, 2(9):44-52
26. Sahoo, N, R., Pal, U.S., **Rayaguru, K.** and Khan, Md. K. (2006). Post harvest quality enhancement of quava by chemical treatment. *J. of the Indian Soc. Of Coastal Agric. Res.:* 24(1) : 225-226

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