

## **DR KARMABEER JENA**

Scientist-D

Central Tasar Research and Training Institute

Central Silk Board, Ministry of Textiles, Govt. Of India

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### **Academic Qualification (From Graduation)**

- Graduation (Hons.) Zoology (Utkal University, Orissa, India), 1997
- M.Sc. Zoology (Utkal University, Orissa, India), 1999
- M.Phil Life Science (Sambalpur University, Orissa, India) 2000
- Ph.D. Zoology (Utkal University, Orissa, India), 2009

### **Work of Experience (within 3-5 bulleted sentences)**

- Isolation of bioactive compound from tasar silk waste
- Oxidative stress and antioxidant defenses
- Protein purification
- Silkworm Physiology and biochemistry
- Silkworm rearing management

### **Area of Interest (within 3-5 bulleted sentences)**

- Biomaterials
- Free radical biology
- Protein purification
- Waste utilization
- Biochemical pathway inhibitors to control diseases

### **Research Experience (Projects handled as PI/ CI only)**

- Mass level extraction of sericin from tasar cocoon cooking waste water for its prospective utilization (As PI)
- Utilization and diversification of silkworm pupae products for human and animal consumption and composting (As PI)
- Studies on the reproductive potential of tasar silkworm, *Antheraea mylitta* D with special reference to nutritional and mechanical indices (As PI)

- Isolation and characterization of sericin from tasar silk waste for commercial utilization (As PI)
- Identification of the most active cocoonase of sericigenous insects through molecular characterization (As CI)
- Integrated biotechnological approach towards improvement of quality and productivity of tropical tasar silk (As CI)
- Cryopreservation of Tasar silkworm, *Antheraea mylitta* semen and its Artificial insemination (As CI)
- Management of abiotic factors to regulate emergence in diapausing seed cocoons (As CI)

### **Award/ Honours/ Fellowship (maximum 5 only)**

- Oral presentation award (3<sup>rd</sup>) during Climate Smart Sericulture-2022 Organized by Central Silk Board Bangalore, and 2<sup>nd</sup> Oral Presentation award during Vanya Sericulture: Opportunities Galore, Organised by CSB-Central Tasar Research Training Institute, Ranchi for the year 2022.
- Best Scientist of the Award (2017) by Central Tasar Research and Training Institute, Ranchi
- Post Doctoral Fellowship (2009) by Institute of Oceanography, National Taiwan University, Taiwan
- Junior Scientist of the year 2007 by National Environmental Science Academy, New- Delhi.
- AFSIB (Asian Fisheries Society Indian Branch) Best poster award for the year 2005.

### **Publications (National & International Journal-42; Total IF 69.18)**

- ❖ Associate Editor for Special Issue “**Vanya Sericulture: Opportunities Galore**”  
Journal of Environmental Biology

### **Best Publication**

1. **K. Jena**, S. Ananta, J. Akthar, A. Patnaik, S. Das, J. Singh, K. Sathyanarayana, P.K. Kar, B.K. Das, Md. Abul Hassan, Falguni Panda, B. Paital (2023). Physical, biochemical and antimicrobial characterization of chitosan prepared from tasar silkworm pupae waste. **Environmental Technology & Innovation** 31; 103200. (IF= 7.758).

2. Rahul Das, Basanta Kumar Das, Md. Abul Hassan, Gopal Krishna, Narinder Kumar Chadha, Kiran Dube Rawat, **Karmabeer Jena** (2023). Valorization of the insect waste as a source of dietary protein in replacing the fishmeal protein for the cage reared *Pangasianodon hypophthalmus*: An approach to search the alternate non-conventional feed resource of animal origin. **Animal Feed Science and Technology** 303; 115691. (IF = 3.313).
3. S. Ananta, **K. Jena**, S. Das, J. Singh, Chakrapani, A. Sinha and K. Sathyanarayana (2023). Evaluation of proximate compositions and profiling of nutritional aspects in pupae of tasar silkworm *Antheraea mylitta* (Drury) as potential for food and feed resources. **Journal of Environmental Biology** 44 (3) 485-490.
4. **K. Jena**, Ruchi Kumari, J.P. Pandey, P.K. Kar, J.Akthar, A.K.singh, V.P. Gupta and A.K. Sinha, (2021). Biochemical characterization of sericin isolated from cocoons of tropical tasar silkworm *Antheraea mylitta* raised on three different host plants for its prospective utilization. **Journal of Asia Pacific Entomology**. 24, 903-911 (IF= 1.58).
5. **K. Jena**, J.P. Pandey, Ruchi Kumari, A.K. Sinha, V.P. Gupta and G.P. Singh (2018). Free radical scavenging potential of various ecoraces of tasar silk sericin and its cosmoceuticals implication. **International Journal of Biological Macromolecules**, 120, 255-262. (IF= 8.025)
6. **K. Jena**, J.P. Pandey, Ruchi Kumari, A.K. Sinha, V.P. Gupta and G.P. Singh (2018). Tasar silk fiber waste sericin: New source for anti-elastase, anti-tyrosinase and anti-oxidant compounds. **International Journal of Biological Macromolecules**, 114, 1102-1108. (IF= 8.025)
7. **K. Jena.**, P.K.Kar, Z.Kausar, Ch.S.Babu. (2013) Effects of temperature on modulation of oxidative stress and antioxidant defences in testes of tropical tasar silkworm *Antheraea mylitta*. **Journal of Thermal Biology**.38, 199-204. (IF= 3.189).
8. **K. Jena**, P.K.Kar, Ch.S. Babu, S. Giri, S.S. Singh and B.C.Prasad (2013) Comparative study of total hydroperoxides and antioxidant defence system in Indian tropical tasar silkworm *Antheraea mylitta* Drury in diapausing and non-diapausing generations. **Journal of Insect Science**, 13,1-11 (IF= 1.904).
9. P.K.Kar., **K. Jena.**, A.K.Srivastav., S.Giri, M.K.Sinha. (2012). Gall induced stress in the leaves of *Termilala arjuna*, food plant of tropical tasar silkworm, *Antheraea mylitta*. **Emirates Journal of Food and Agriculture**, 25 (3), 205-210 (IF= 1.008).
10. D. Maharana, **K. Jena**, N. M. Pise and T. G. Jagtap. (2010). Assessment of oxidative stress indices in marine macro alga *Padina tetrastromatica* (Hauck)

from diverse coastal regions of Arabian Sea, West coast of India. **Journal of Environmental Science**, 22(9) 1413–1418. (IF= 6.78)

11. **K. Jena**, X. N. Verlecar and G.B.N. Chainy. (2009). Application of oxidative stress indices as biomarkers of environmental pollution in natural populations of *Perna viridis* along the Goa Coast. **Marine Pollution Bulletin**, 58; 107-113. (IF= 7.001)
12. X. N. Verlecar., **K. Jena**. and G.B.N. Chainy. (2008). Modulation of antioxidant defences in digestive gland of *Perna viridis* (L.), on mercury exposures. **Chemosphere**, 71: 1977-1985. (IF= 8.943)
13. X. N. Verlecar., **K. Jena**. and G.B.N. Chainy. (2008). Seasonal variation of oxidative biomarkers in gills and digestive gland of green-lipped mussel *Perna viridis* from Arabian Sea. **Estuarine Coastal and Shelf Science**, 76: 745-752. (IF= 3.23)
14. X. N. Verlecar., **K. Jena**. and G.B.N. Chainy. (2007). Biochemical markers of oxidative stress in *Perna viridis* exposed to mercury and temperature. **Chemico-Biological Interactions**, 167: 219-226. (IF= 5.17)

**Training (Not more than 10)**

- Mass Spectrophotometry (2021), C-CAMP, Bangalore
- Foundation Training for Young Scientist of Central Silk Board (2011): NAARM, Hyderabad
- Scanning electron microscope (2008): University of Burdwan, Kolkatta
- Genetic toxicology (2008): IITR, Lucknow
- Gas chromatography (2006): ATI, Chennai
- Molecular biotechnology (2004):, PERD, Ahmedabad
- Electrophoresis (2002): Electrophoresis Institute, Yercaud, Tamilnadu

**Memberships (Not more than 5)**

- National Environmental Science Academy.
- Nutrition Society of India.
- Association of Biotechnology and Pharmacy