

Profile of Scientist



1. Name of the Scientist : **P. ANANDA KUMAR**
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2. Personal Bio-data:

a) Position/Designation : Emeritus Scientist
b) Joining date in ICAR : 12-09-1978
c) Discipline and Specialization : Plant physiology and molecular biology
d) Training/advance exposure in the area of work: Alexander von Humboldt Fellow (1991)
e) Contribution to the scientific advancement :

- Specialized in the area of transgenic development for insect resistance utilizing the genes encoding insecticidal proteins of *Bacillus thuringiensis*.
- Developed Fruit borer resistant brinjal and tomato and licensed to Private R&D companies
- Developed Pod borer resistant pigeonpea and h
- Developed herbicide tolerant rice (Contract research).
- In association with AAU, Jorhat, developed Pod borer resistant chickpea.
- Obtained three patents on codon-modified and chimeric Bt genes.

3. Future Planning of research :

- To carry out the gene expression (transcriptome) studies in root and shoot of rice under normal (flooded) and aerobic conditions.
- Identification of the genes that are differentially expressed under normal (flooded) and aerobic conditions with special reference to nutrient uptake.
- To develop molecular markers for efficient nutrient uptake, especially nitrogen, in rice under aerobic conditions.
- Validation of the genes by genetic engineering and genome editing.

4. Publication (Best five)

:

- Chen, Z. J., ----Kumar, P. A., ---- and Paterson, A.H. 2007. Towards sequencing cotton (*Gossypium*) genomes. *Plant Physiology* 145: 1303-1310.
- Kumar PA, Malik VS and Sharma RP 1996 Insecticidal proteins of *Bacillus thuringiensis*. *Advances in Applied Microbiology* 42:1-43.
- Kumar PA, Mandaokar A, Sreenivasu K, Chakrabarti SK, Sharma SR, Bisaria S, Kaur S and Sharma RP 1998 Insect-resistant transgenic brinjal plants. *Molecular Breeding* 4: 33-37.
- Chhapekar, S., Raghavendrarao, S., Pavan, G., Ramakrishna, C., Singh, V.K., Phanindra, M.L.V., Dhandapani, G., Sreevathsa, R. and Kumar, P.A. 2015. Transgenic rice expressing a codon-modified synthetic CP-4-EPSPS confers tolerance to broad-spectrum herbicide, glyphosate. *Plant Cell Reports* 34:721-731.
- Phule, A.S., Barbadikar, K., Madhav, M.S., Senguttuvel, P., Prasad Babu, M.B.B. and Kumar, P.A. 2018. Genes encoding membrane proteins showed stable expression in rice under aerobic condition: novel set of reference genes for expression studies. *3 Biotech* 8: 383-394.

5. Other relevant activities of Scientist

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- Editor, *GM Crops and Food*; Taylor & Francis.
- Chairperson, PMC, Saffron Network, Department of Biotechnology.
- Chairperson, PMC, SOL II, Department of Biotechnology.
- Member, Task force-Agricultural Biotechnology, Department of Biotechnology.
- Member, Scientific Advisory Committee, AAU-DBT Centre, Jorhat.
- Member, Expert Committee, NER-Twinning Program, Department of Biotechnology.
- Member, Executive Board, Agri-Biotech Foundation, Hyderabad
- Member, RAC, NIBSM (Raipur), IIOR (Hyderabad), NRCB (Tiruchy) and QRT, NRRI (Cuttack).
- Member, UGC-SAP.
- Reviewer for international journals (Biotechnology, Genomics, Molecular biology etc).