PROFILE

Name: DR. ARUP KUMAR MUKHERJEE

Designation: Principal Scientist
Division of Crop Protection,
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1. **Date of Birth** : 13.11.1965

2. **Areas of Specialization** : Plant Pathology (Marker Assisted Breeding, Host-pathogen interaction, Biocontrol of Crop Diseases, Molecular diagnostic of crop diseases, Genetic diversity of Plant pathogens).

3. **Education** : Ph. D. and Post Doc in Plant Biotechnology

4. **Professional History:**
   - ☞ DBT Post Doctoral Fellow at NRC on Plant Biotechnology, IARI, New Delhi from June 1997 to Oct 1999 and worked on "***DNA Fingerprinting, Gene Tagging and Mapping of Economically Important Traits of Indian Mustard by Using Molecular Markers".***
   - ☞ Scientist, Biotechnology at Regional Plant Resource Centre, Govt. of Odisha, Bhubaneswar from Nov 1999 to July 2009.
   - ☞ Visiting Scientist/DBT Overseas Associate at the Department of Biology, Israel Institute of Technology, Technion, Haifa 32000, Israel, during the period from 8th March 2006 to 7th March 2007 and worked on "***Common pathways to leaf senescence and defence response: proteomic approach"***
   - ☞ Senior Scientist, Plant Pathology at ICAR-Central Institute for Cotton Research, Nagpur from 20th July to 12th Jan 2013.
   - ☞ Senior Scientist at ICAR-Central Rice Research Institute, Cuttack from 13th Jan 2013 to 19th July 2015.
   - ☞ Principal Scientist at ICAR-National Rice Research Institute, Cuttack from 20th July 2015 to till date.

5. **Publications** :
   - ☞ Research Papers Published/Accepted: 97
   - ☞ News Letters: 6
   - ☞ Books 2
   - ☞ Technical Bulletin etc. 5
   - ☞ Book Chapters/Training Manual 24
   - ☞ Review articles: 6
   - ☞ Symposium papers/Abstracts: 20
   - ☞ Gen Bank (NCBI Submission: 41
   - ☞ Deposition of culture in IMTECH, Chandigarh 14
   - ☞ **h-index 17, i10-index 33 with more than 888 citations in international literature** .

6. **Products**: (i).Developed one *Trichoderma* based bio fungicide against soil and seed borne cotton pathogens named as *TrichoCash* which performed extremely well for continuous three years (2013-14, 2014-15, 2015-16) in the All India Coordinated Cotton Improvement Project (AICCIP) against *Fusarium* wilt of cotton.

   (ii). Associated with release of 8 rice varieties namely CR Dhan 506 (CVRC), CR Dhan 311 (high protein & high Zinc) and CR Dhan 507 (SVRC) and CR Dhan 510 has been identified in the current year 2016-17 for CVRC. CR Dhan -309 (CVRC), CR Dhan -102

& CR Dhan 210 (SVRC); CR Dhan 312 (CVRC).

7. **Patent filed:** **Mukherjee, A.K**., Adak, T. Swain, H, Behera, S.P., Dhua, U., Jena, M., Bagchi, T.B., Bhattacharya, P. Kumar, A. and Dangar.T.K et.al. (2015). Multiuse composition of talcum powder based product containing novel *Trichoderma* sp. Complete **Patent file No. 1240/KOL/2015.**

8. **(a) Awards:**

- ☞ Received **AZRA Fellowship Award** (2020) during XVII AZRA International Conference jointly organized by UAS, Raichur, Karnataka, AZRA Bhubaneswar, Odisha and Entomological Society of India, IARI, New Delhi. 12th to 14th Feb 2020, UAS, Raichur, Karnataka.
- ☞ Elected as **Fellow of Association of Rice Research Workers** on 2nd June 2019 during 54th Indian Rice Group Meeting.
- ☞ "**Sir C.V. Raman Life time Achievement National Award**" for outstanding excellence and remarkable achievement in the field of Teaching, Research & Publications on 28th Oct 2018 at Chennai by IRDP group of journals, Chennai.
- ☞ Received **Distinguished Achievement Award -2015** for innovative research at the frontiers of Plant Pathology and for exceptional potential to shape the future through intellectual and inspired leadership in Plant Biotechnology awarded by Association for the Advancement of Biodiversity Science, 2015.
- ☞ Elected as **Fellow of Society of Association for the Advancement of Biodiversity Science**, 2015.
- ☞ Elected as **Fellow of Scientific Society of Advanced Research and Social Change**, 2015
- ☞ Received **Anand Prakash Award** for 2014 for significant contribution in Plant Protection from Applied Zoologists Researchers Association.
- ☞ Received **SAB Merit Award** for 2012 from the Society of Applied Biotechnology for outstanding achievement in Agricultural Biotechnology.
- ☞ Elected as a **Fellow of the Society of Applied Biotechnology**, 2012.
- ☞ Qualified the National Eligibility Test (***NET***) conducted by Agricultural Scientists Recruitment Board (ASRB), Indian Council Of Agricultural Research (ICAR), New Delhi, in the Year 1996.
- ☞ Got Post Doctoral Fellowship of **Department of Biotechnology**, Government of India, New Delhi, in the session 1997 – 1999 and placed at National Research Centre on Plant Biotechnology, IARI, and New Delhi.
- ☞ Worked as a Visiting Scientist in the Department of Biology, Israel Institute of Technology, Technion, Haifa 32000, Israel, during the period from 8th March 2006 to 7th March 2007.
- ☞ Has been awarded with *The Long term **DBT Overseas Associate ship Award*** for the year 2004-2005 and working on "Common pathways to leaf senescence and defense response in plants: proteomic approach." Under the supervision of Prof. S. Gepstein and Prof B.A. Horwitz, Department of Biology, The Technion-Israel Institute of Technology, Haifa, Israel.

(b) Recognitions:

- ☞ Elected as Zonal President (Eastern Zone) (2020) of Indian Phytopathological Society, New Delhi.
- ☞ Nominated as a member of IMC at ICAR-NIBSM, Raipur.
- ☞ *Has been selected as a Member of Asian Council for Science Editor till 2018.*
- ☞ Enlisted in Live DNA Database with **Live DNA Regn. No. 91.649** (http://livedna.net/?dna=91.649).
- **ORCID ID: https://orcid.org/0000-0001-6451-0358.**
- ☞ Web of Science Researchers ID**: G-8749-2013**
- ☞ Acted as External Examiner in Department of Botany and Biotechnology of Calcutta University, Utkal University, Sambalpur University, Orissa University of Agriculture and Technology, Nagpur University, Gauhati University and Osmania University.
- ☞ Recognized as Research guide in the Discipline of Botany by Utkal University, Bhubaneswar, Orissa and Ravenshaw University, Cuttack.

- ☞ Invited as **Chief Guest** in The 37th Annual Seminar and delivered 24th **Bairiganjan Memoral Lecture** at Christ College, Cuttack on 1st February 2013.
- ☞ Delivered **Dr. Anil S. Khalatkar Memorial Lecture** at Post Graduate Department of Botany, Rashtrasant Tukadoji Maharaj Nagpur, University,Nagpur on 24th January, 2012.
- ☞ Acted as Guest Faculty in The Utkal University (Botany Deptt and Biotechnology Deptt.), Ravenshaw College (Biotech), Khalikote College (Biotech.) of Orissa.
- ☞ Delivered invited talks to different Seminars and Symposiums.
- ☞ Members of editorial board of numbers of journals of National and International reputes including Annals of Plant Protection Sciences, Asian Journal of Biotechnology, International Journal of Botany, International Journal of Plant Pathology, Plant Pathology Journal, Journal of Plant Science, International Journal of Modern Botany, etc.
- ☞ **Editor in Chief**: Journal of Scientific Achievements, ISSN: 2207-4236, http://jsciachv.com/editorial-team/ as on 29th March 2019.
- ☞ Acted as reviewer for Aquatic Botany, Caryologia, Cell Biology International, Genes & Genomics, Genetica, Indian Journal of Biotechnology, Indian Journal of Geo Marine Sciences, Indian Phytopathology, African J Biotech, African Journal of Agricultural Research, African Journal of Microbiology, Agricultural Sciences(AS), American Journal of Plant Sciences, International Journal of Genetics and Molecular Biology, International Research Journal of Agricultural Science, Journal of Ecology and Natural Environment, Journal of Plant Breeding and Crop Science, Research in Pharmaceutical Biotechnology, Science Asia, Science Journal of Biotechnology,Tropical Life Science Research, Indian Journal of Genetics, Indian Journal of Legume Research, Molecular Biology Reports, PLOS One, Euphytica, Genomics, BMC-Plant Biology etc.

9. Important publications (15 best):

- ☞ Shasmita, Mohapatra, D., Mohapatra P.K., Naik, S.K., **Mukherjee, A.K***(2019). Priming with Salicylic Acid Induces Defense against Bacterial Blight disease by Modulating Rice Plant Photosystem II and Antioxidant Enzymes activity. ***Physiological and Molecular Plant Pathology*.**108:101427**.** https://doi.org/10.1016/j.pmpp.2019.101427.
- ☞ Shasmita, Swain HK, Naik, S.K., **Mukherjee, A.K***. (2019). Comparative analysis of different biotic and abiotic agents for growth promotion in rice (*Oryza sativa* L.) and their effect on induction of resistance against *Rhizoctonia solani*: A soil borne pathogen. ***Biological Control*.** 133:123-133. DOI: 10.1016/j.biocontrol.2019.02.013.
- ☞ Pradhan, S.K., Pandit, E., Pawar, S., Baksh, S.Y., **Mukherjee, A.K**., Mohanty, S.P.(2019).Development of flash-flood tolerant and durable bacterial blight resistant versions of mega rice variety 'Swarna' through marker-assisted backcross breeding. ***Scientific Reports*** 9:12810, https://doi.org/10.1038/s41598-019-4917, Published on line 5th Sept 2019.
- ☞ Shasmita, Swain,H., Ray,A., Mohapatra, P.K., Sarkar, R.K., **Mukherjee, A.K***. (2018). Riboflavin (Vitamin B2) mediated defence induction against bacterial leaf blight: probing through chlorophyll a fluorescence induction O–J–I–P transients. ***Functional Plant Biology*** 45(12) 1251-1261 https://doi.org/10.1071/FP18117.
- ☞ Swain H., Adak, T., **Mukherjee, AK***., Mukherjee, PK, Bhattacharyya, P., Behera S., Bagchi TB, Patro R, Shasmita, Khandual, A., Bag, MK, Dangar, TK, Lenka S., and Jena M (2018). Novel Trichoderma strains isolated from tree barks as potential biocontrol agent and biofertilizers for direct seeded rice. ***Microbiological Research*** 214:83-90.
- ☞ **Mukherjee, A.K**., Mukherjee, P.K. and Kranthi, S. (2016). Genetic similarity between cotton leaf roll dwarf virus and chickpea stunt disease associated virus in India. ***Plant Pathology Journal*** (Korea) 32(6): 580–583. doi.org/10.5423/PPJ.NT.09.2015.0197.
- ☞ Dash AK, Rao RN, Rao G, Verma RL, Katara JL, **Mukherjee, AK**, Singh ON and Bagchi TB (2016). Phenotypic and marker-assisted genetic enhancement of parental lines of Rajalaxmi, an elite rice hybrid. ***Front. Plant Sci***. 7:1005. doi: 10.3389/fpls.2016.01005

- Pradhan, SK., Nayak, DK., Pandit, E., Anandan, A., **Mukherjee, AK**., Lenka, S., Behera, L and Barik, DP.(2016). Incorporation of bacterial blight resistance genes into lowland rice cultivar through marker-assisted backcross breeding. ***Phytopathology*** ·106:710-718..DOI: 10.1094/PHYTO-09-15-0226-R.
- **Mukherjee,A.K.,** Sampat Kumar, A., Kranthi, S., and Mukherjee,P.K. (2014). Biocontrol potential of three novel *Trichoderma* strains: isolation evaluation and formulation. ***3 Biotech.*** 4(3):275-281. DOI: 10.1007/s13205-013-0150-4 (Springer).
- **Mukherjee,A.K.,** Mohapatra, N.K. and Nayak, P. (2010). Estimation of area under the disease progress curves in a rice blast pathosystem from two data points. ***European J. Plant Pathol.*** 127:33-39.DOI:10.1007/s10658-009-9568-2.
- **Mukherjee A.K.,** Ratha, S., Dhar, S., Debata, A.K., Acharya, P.K., Mondal, S., Panda, P.C., and Mahapatra. A.K. (2010). Genetic relationships among 22 taxa of bamboo revealed by ISSR and *Est*-based random Primers. ***Biochem Genet***. 48:1015–1025. DOI 10.1007/s10528-010-9390-8.
- **Mukherjee,A.K.,** Carp. M.J., Zuchman, R., Ziv, T., Horwitz B.A. and Gepstein S., (2010). Proteomics of the response of Arabidopsis thaliana to infection with *Alternaria brassicicola*. ***J. Proteomics***. 73:709-720. Doi.:10.1016/j.jprot.2009.10.005.
- **Mukherjee,A.K.,** Lev, S., Gepstein, S. and Horwitz., B.A. (2009). A compatible interaction of *Alternaria brassicicola* with *Arabidopsis thaliana* ecotype DiG: evidence for a specific transcriptional signature ***BMC Plant Biology*** 9:31. doi:10.1186/1471-2229-9-31
- **Mukherjee,A.K.,** Mohapatra, N.K., Suriya Rao, A.V., and Nayak, P. (2005). Effect of nitrogen fertilization on the expression of slow- blasting- resistance in rice. ***The Journal of Agricultural Science*** (UK). 143: 385-393.
- **Mukherjee, A. K.,** Mohapatra, T., Varshney, A., Sharma, R., and Sharma, R. P. (2001) Molecular mapping of a locus controlling resistance to *Albugo candida* in Indian mustard. ***Plant Breeding*** (Germany) 20 (6): 483-487.

10. Ph.D. Students Awarded :

- Miss I. Mattagajasingh was awarded with her Ph.D. degree on the thesis work entitled 'Studies on molecular phylogeny of the genus *Mammillaria*' by the Utkal University, Bhubaneswar, Orissa on 21st November 2003.
- Mr. L.K. Acharya (Regn. No.06-Botany, 2003--2004, Utkal University) has been awarded with his Ph.D. on the thesis work on 'Study of the phylogeny of some of leguminous taxa through, taxonomical, biochemical and molecular techniques' by the Utkal University on March 2007.
- Mrs. Ajantaa Pal (Regn. No. 81 Sc.- Botany, 1990-1991, Utkal University) was awarded with the Ph.D. degree on "Genetic Transformation of *Amaranthus* spp. using *Ri and Ti* plasmid vectors" by the Utkal University on 30th August, 2008.
- Mr. Manoj K. Panda (Regn no. Bot-46, 2006-07) was awarded with the Ph.D. degree on "Genetic diversity of rare and endangered tree species of eastern ghat using molecular markers" by The Utkal University on 27th April 2011.
- Mr. Akhil K Debata, Regn No. 45-Botany-2006-07, was awarded with PhD. Degree on 16th Nov, 2013 by Utkal University, Bhubaneswar, Odisha.
- Mr. Pradosh K Acharya, reg. No. 47-Botany, 2006-07, was awarded with PhD. Degree on 16th Nov, 2013 by Utkal University, Bhubaneswar, Odisha.
- Hemanta K Sahoo, Regn 19, Botany 2007-08, Utkal University awarded with his PhD degree in February 2018.
- Miss Shasmita has been awarded with her PhD degree on 31st January 2020 by the Department of Botany, Ravenshaw University, Cuttack.