

## Profile of Scientist

**1. Name of the Scientist:** Dr. Ashutosh Kumar Mall

**2. Personal Bio-data:**

**a) Position/Designation:** Senior Scientist (Genetics & Plant Breeding)

**b) Contact Details:**

**i. ICAR Email ID:** Ashutosh.Mall@icar.gov.in

**ii. Personal Email ID:** ashutoshkumarmall@gmail.com

**iii. Mobile No.:** 8009052220

**c) Joining date in:**

**i. ICAR:** 5<sup>th</sup> June, 2012

**ii. IISR:** 11<sup>th</sup> September, 2015

**d) Discipline and Specialization:** Crop Improvement Division; Plant Breeding

**e) Training/advance exposure in the area of work:**

- Attended refresher course on “**Agricultural Research Management**” during January 7-19, 2013 at National Academy of Agricultural Research Management, Rajendranagar, Hyderabad-500 030 sponsored by Indian Council of Agricultural Research, New Delhi.
- Satisfactorily completed the national training on “**Apomixis: Components, Importance and Utilization/Exploitation**” held from 3 to 16 December, 2012 organized by Indian Grassland and Fodder Research Institute, Jhansi (UP)-284 003 sponsored by National Agricultural Innovation Project, ICAR, New Delhi.
- Satisfactorily completed the training workshop of IRRI on “**Experimental Design and Data Analysis for Plant Breeders**” held from 7 to 11 September, 2009 at Central Rice Research Institute, Cuttack, Orissa.
- Participated in one week training programme of IRRI on “**Drought Screening for Rice Genetic Improvement**” organized by Birsia Agriculture University (BAU), Ranchi” during 10<sup>th</sup> November to 15<sup>th</sup> November, 2008.

## **WORK SHOP**

- Attended Annual Review and planning meeting on IRRI-India drought breeding network and STRASA planning Workshop during 16-18<sup>th</sup> March, 2009.
- Attended Annual Review and planning meeting on IRRI-India drought breeding network and STRASA planning Workshop during 12-13<sup>th</sup> March, 2010.
- Attended inception meeting and planning workshop on IRRI-India drought breeding network and STRASA planning Workshop during 5-7<sup>th</sup> April, 2011.
- Attended review and planning workshop for India and Nepal on IRRI-India drought breeding network and STRASA planning Workshop during 11-13<sup>th</sup> April, 2012.
- Participated in AICRP on Forage Crops National Group Meeting *Rabi-2012-13* held at IGFRI, Jhansi during September 14-15, 2012.
- Participated in AICRP on Forage Crops National Group Meeting *Kharif-2013* held at AAU, Jorhat during May 10-11, 2013.
- Participated in AICRP on Forage Crops National Group Meeting *Rabi-2013-14* held at JNKVV, Jabalpur during September 7-8, 2013.



- Participated in AICRP on Forage Crops National Group Meeting *Kharif*-2014 held at SKRAU, Bikaner during March 7-8, 2014.
- Participated in AICRP on Forage Crops National Group Meeting *Rabi*-2014-15 held at PAU, Ludhiana during August 26-27, 2014.
- Participated in AICRP on Forage Crops National Group Meeting *Kharif*-2015 held at PJTSAU, Rajendranagar, Hyderabad during April 17-18, 2015.
- Participated in AICRP on Forage Crops National Group Meeting *Rabi*-2015-16 at MPKV, Rahuri during September, 2015.

#### **f) Contribution to the scientific advancement:**

- **Varieties:** Developed eight rice varieties for different ecologies and 13 forage crops varieties in collaboration through AICRP-FC&U. Through several cross combination, new germplasm developed in Rice and BN hybrid. Handled several segregating population and selected promising germplasm in Rice for different ecologies. Thousand of germplasm screened, conserved, maintained and documented in forage crops and range grasses.
- **Project Handled:** Four projects externally funded and three institutional projects handled. Now working with one externally project and four institutional projects.
- **Organizing Capacity Building Programmes:** Association as coordination of organizing six National Group Meetings (*Kharif* & *Rabi*)-AICRP on forage Crops & Utilization (ICAR, New Delhi).
- **Extension Activities:** Involved in several extension activities viz., popularization of technologies, FTD, on-farm trials and farmers fair.
- **Breeder Seed Production:** Actively involved in Breeder Seed Production of forage crops and sugarcane varieties.

#### **3. Future Planning of research (in bullets):**

- Sugarcane drought breeding for sub-tropical areas.
- Mapping of Loci linked to Sugar Content in Sugarcane.
- Developing Sugarbeet Varieties for Indian Agro-climates.
- Sugarbeet varieties for bio ethanol production.
- Enhance the Breeder Seed Production area than the existing areas.

#### **4. Publications (best five):**

Raman, A., Verulkar S. B., Mandal, N. P., Variar, M. Shukla, V. D., Dwivedi, J. L. Singh, B. N., Singh, O. N., Swain, P. **Mall, A. K.**, Robin, S. Chandrababu, R., Jain, A., Ram, T., Hittalmani, S., Haefele, S., Piepho, H. P. and Kumar, A. (2012). Drought yield index to select high yielding rice lines under different drought stress severities. *Rice*, 5: 31.

Kumar, A., Verulkar S. B., Mandal, N. P., Variar, M. Shukla, V. D., Dwivedi, J. L. Singh, B. N., Singh, O. N., Swain, P. **Mall, A. K.**, Robin, S. Chandrababu, R., Jain, A., Ram, T., Hittalmani, S., Haefele, S., Piepho, H. P. and Raman, A. (2012). High yielding, drought tolerant, stable rice genotypes for the shallow rainfed lowland drought-prone ecosystem. *Field Crop Research*, 133: 37-47.

**Mall, A. K.**, Swain, P., Das, S., Singh, O. N. and Kumar, A. (2011). Effect of drought on yield and drought susceptibility index for quality characters of promising rice genotypes. *Cereal Research Communications*, 39 (1): 22-31.

Kumar, S., Dwivedi, S. K., Singh, S. S., Kumar, S., Sundaram, P. K., Shivani and **Mall, A. K.** (2015). Characterization of rice (*Oryza sativa* L.) genotypes on basis of morpho-physiological and biochemical traits grown under aerobic situation in rainfed ecosystem. *Journal of Environmental Biology*, 36 (4): 999-1005.

Singh, A. K., **Mall, A. K.\***, Ram Bhajan and Singh, O. N. (2009). Environmental sensitivity of parents and their crosses for combining ability and rank correlation in *Brassica campestris* L. var. yellow sarson. *Indian Journal of Genetics and Plant Breeding*, 70 (2): 197-200.

Singh, A. K., Singh, A. K., **Mall, A. K.\*** and. Singh P. K (2013). Analysis of correlation and path coefficients among yield and biochemical traits under irrigated and reproductive stage drought stress in *Oryza sativa* L. *Vegetos*, 26 (1): 50-57.

Singh, P. K\* and **Mall, A. K.** (2007). Screening of rapeseed and mustard genotypes against white rust (*Albugo cruciferarum* SF Gray), *Vegetos*, 20 (2): 59-62.

Singh, A. K., **Mall, A. K.\***, Singh, A. K., Singh, P. K. and Singh, A. K. (2015). Genetic variability and Physiological, Biochemical, Agro-morphological Response to Drought Resistance in Upland. *SABRAO Journal of Breeding and Genetics*, 47 (3): 268-277.

Swain, P., **Mall, A. K.\***, Singh, O. N. and Baig, M. J. (2014). Yield response of rice (*Oryza sativa* L.) genotypes to vegetative stage drought in dry season adapted to drought prone rainfed upland. *International Journal of Agricultural and Statistical Sciences*, 10 (1): 33-39.

**Mall, A. K.\***, Swain, P., Singh, O. N. and Baig, M. J. (2012). Use of genotype x environment interactions and drought susceptibility index for identification of drought tolerant genotypes at vegetative stage stress in upland rice. *Indian Journal of Dryland Agricultural Research and Development*, 27 (2): 73-78.

## 5. Other relevant activities of Scientist:

### INTERNATIONAL EXPOSURE

- To present a paper in 6<sup>th</sup> International Rice Genetics Symposium during November 15-19, 2009 at Manila, Philippines.
- To attend annual review and planning meeting on connecting performance under drought with genotype through phenotype associations.

IRRI, Philippines invited to work with IRRI breeders to examine breeding nurseries at IRRI and make selections of the elite breeding lines during 25<sup>th</sup> March to 2<sup>nd</sup> April, 2011.

### ATTENDED SEMINAR/SYMPOSIUM

- IJTA 1<sup>st</sup> International Conference on Agriculture & Horticulture Sciences (6-7<sup>th</sup>, 2015), New Delhi, India, organized by ICAHS 2015, Academic Research Journals (India).
- International Conference on Low Temperature Science and Biotechnological Advances (27-30<sup>th</sup> April 2015), NASC Complex, Pusa Campus, New Delhi-110 012, India organized by Indian Council of Agricultural Research, with National Academy of Agricultural Sciences, India, The Society for Low Temperature Biology, UK and the Royal Botanic Gardens, Kew, UK.
- National symposium on “Sustainable production of forages from arable and non arable land and its utilization” on 2-3 November, 2012 organized by Range Management Society of India and Indian Grassland and Fodder Research Institute, Jhansi-284 003 (U. P.), India.
- 6<sup>th</sup> International Rice Genetics Symposium and 7<sup>th</sup> International Symposium on Rice Functional Genomics organized by International Rice Research Institute (IRRI), Los Banos, Laguna, Philippines at Manila, Philippines during 16-19 November 2009.
- National symposium on “Sustainable rice production system under changed climate” on 27-29 November, 2010 organized by Association of rice research workers (ARRW), CRRI, Cuttack and ICAR, New Delhi p 31.
- National Seminar on “Designing Crops for the Climate Change” Organized by Indian Society of Genetics & Plant Breeding, New Delhi and BAU, Ranchi during 30-31 October, 2009.
- National seminar on Molecular Approaches for Crop Improvement Organized by Department of Plant Molecular Biology and Genetic Engineering, N D University of Agriculture & Technology, Kumarganj, Faizabad during 7-8<sup>th</sup> February, 2007.

- Participated in "Patent Awareness workshop" held at N D University of Agriculture & Technology, Kumarganj and Faizabad on December 04, 2003.
- 26<sup>th</sup> Annual conference and symposium of Indian Society of Mycology and Plant Pathology (ISMPP) organized by UGC-SAP, Department of Botany, Goa University, Goa during 7-9<sup>th</sup> October, 2004.

## DOCUMENTATION

1. Annual report (2011-12): Part-II: *Rabi*-2011-12. AICRP-Forage Crops, Project Coordinating Unit, IGFRI, Jhansi.
2. Proceeding of the National Group Meeting-*Rabi*-2012-13 held at IGFRI, Jhansi during September 14-15, 2012.
3. Annual report (2012-13): Part-I: *Kharif*-2012. AICRP-Forage Crops, Project Coordinating Unit, IGFRI, Jhansi.
4. Proceeding of the National Group Meeting-*Kharif*-2013 held at AAU, Jorhat during May 10-11, 2013.
5. Kumar, R. V., Kantwa, S. R., **Mall, A. K.**, Mawar, Ritu and Roy, A. K. (2012). All India Coordinated Research on Forage Crops in Glimpse–50 Years of Forage Research pp151-167.
6. Annual report (2012-13): Part-II: *Rabi*-2012-13. AICRP-Forage Crops, Project Coordinating Unit, IGFRI, Jhansi.
7. Proceeding of the National Group Meeting-*Rabi*-2013-14 held at JNKVV, Jabalpur during September 7-8, 2013.
8. Mawar, R., Bhaskar, R. B., Kantwa, S. R., **Mall, A. K.** and Roy, A. K. (2013). Eco-friendly plant protection technologies for forages. *In Souvenir National Group Meet Rabi 2013-14* during 7-8 September, 2013 at JNKVV, Jabalpur. Pp 37-40.
9. **Mall, A. K.**, Kumar, R. V., Mawar, R., Kantwa, S. R. and Roy, A. K. (2013). Forage Crop Varieties: Issues and Achievements. *In Souvenir National Group Meet Rabi 2013-14* during 7-8 September, 2013 at JNKVV, Jabalpur. Pp 12-15.
10. Kantwa, S. R., **Mall, A. K.** and Mawar, R. (2013). Forage production Technologies for higher productivity. *In Souvenir National Group Meet Rabi 2013-14* during 7-8 September, 2013 at JNKVV, Jabalpur. Pp 16-17.
11. Roy, A. K. and **Mall. A. K.** (2013). Forage breeder seed production in India: An Overview and current status. *In Compendium Quality seed production and seed standards in forage crops and range grasses: challenges, advances and innovations*, IGFRI, Jhansi. Pp 9.1-9.3.
12. Annual report (2013-14): Part-I: *Kharif*-2013. AICRP-Forage Crops, Project Coordinating Unit, IGFRI, Jhansi.
13. Proceeding of the National Group Meeting-*Kharif*-2014 held at SKRAU, Bikaner during March 7-8, 2014.
14. Roy, A. K., Tiwana, U. S., Kapoor, R., Kantwa, S. R., Mawar, Ritu and **Mall, A. K.** (2014). Feed and Fodder Scenario in India. *In Souvenir National Group Meet Rabi 2014-15* during 26-27 August, 2014 at PAU, Ludhiana. Pp 06-13.
15. Annual report (2013-14): Part-II: *Rabi*-2014-15. AICRP-Forage Crops, Project Coordinating Unit, IGFRI, Jhansi.
16. Proceeding of the National Group Meeting-*Rabi*-2014-15 held at PAU, Ludhiana during August 26-27, 2014.
17. Annual report (2014-15): Part-I: *Kharif*-2014. AICRP-Forage Crops, Project Coordinating Unit, IGFRI, Jhansi.
18. Proceeding of the National Group Meeting-*Kharif*-2015 held at PJTSAU, Rajendranagar, Hyderabad during April 17-18, 2015.

19. Research Accomplishments of Forage and Millet Section
20. Annual report (2014-15): Part-II: *Rabi*-2015-16. AICRP-Forage Crops, Project Coordinating Unit, IGFRI, Jhansi.
21. Proceeding of the National Group Meeting-*Rabi*-2015 held at MPKV, Rahuri during September, 2015.
22. Pathak, A. D. and **Mall, A. K.** (2015). Sugarcane Varietal Improvement Programme for Sustained Sugar Production in Bihar. *In* Souvenir: Group Meeting of AICRP on Sugarcane during December 15-16, 2015 at Rajendra Agricultural University, Bihar, Pusa (Samastipur). Pp 19-21.

**Peer Recognition:**

- **Editor of Journals:** Editorial member in five peer reviewed societies.
- **Membership of Professional Societies:** Life member of five esteemed societies.
- **Papers Reviewed:** Acted as reviewer of national/international journals.
- **Rapporteurs in workshop:** Acted as rapporteurs in technical/plenary sessions of NGM-AICRP-FCU.

**Other Publication:**

- **Book and Book Chapters:** Authored one book on forage crops varieties and written seven book chapters.
- **Popular Articles:** Seven articles (farmer's helpful) published in popular magazine.
- **Abstracts:** Twenty six abstract published in national/international seminar/symposium.
- **Technical Bulletins:** Published two bulletins.
- **Annual Reports and Workshop Proceedings (Compiled and Edited):** Nine annuals and six workshop proceedings compiled and edited.
- **E publication:** Having eight e publications.

**Research Experience:** Breeding & molecular experiences in Rice (Aerobic, AWD, Direct seeded, Drought, Irrigated ecologies), Oilseed crops, Forage crops and Cereals.