

Scientist Profile



1. **Name of Scientist** Rama Kant Rai
2. **Personal Bio-data**
 - a. Position/Designation Principal Scientist
 - b. **Contact Details**
 - i. ICAR Email ID rai.ramakant@icar.gov.in
 - ii. Personal Email ID ramakantrai@rediffmail.com
 - iii. Mobile 9839972351
Number
 - c. **Joining Dates In**
 - i. ICAR April 04, 1986
 - ii. ICAR-IISR April 04, 1986
 - d. **Discipline and Specialization**

ARS Discipline	Plant Physiology
Specialization	Growth dynamics
 - e. **Trainings / Advanced Exposure in the Area of Work**
 - **Awareness programme on PPV and FR Act, 2001**” March 23-24, Indian Institute of Sugarcane Research, Lucknow, 2012.
 - **Quality Management system as per ISO 9001: 2008**, Institute of IT resources, Dehradun, 3 Dec 2012, ICAR-IISR, Lucknow
 - Recent Developments on Physiology of Vegetable Crops, N.D University of Agriculture and Technology, *Faizabad*, 2002
 - National Training, IPR and WTO, 2001, ICAR-IISR Lucknow
3. **Contributions to the Scientific Advancement**
 - Low temperature stress management: Improving juice quality and stubble bud sprouting under low temperatures *Agric and Food Chemistry, 2008*
 - Improving sugarcane productivity and juice quality
 - Rhizospheric engineering - *Sugarcane ratoon management: Comm. in Soil Sci & Plant Analysis, 2013, 44:1849-1861, Comm. in Soil Sci & Plant Analysis, 2015, 46(4) 454-475*)
 - Addressing yield barriers: Optimization of plant population for improving physiological efficiency of sugarcane: *Journal of Plant Growth Regulation, 2016* (DOI 10.1007/s00344-016-9655-5)
 - Physiological reasoning for increased requirement of nitrogen doze in ratoon crops
 - Salt tolerance
 - Integration of agro-techniques for sustaining cane yields under multiple rationing system

- Nutritional / poor quality water stress
- Delineation of osmotic and ionic imbalance in sugarcane
- Insect Induced Stress
- Allelopathic influences in sugarcane cropping system
- Heavy Metal Toxicity

4. Current Area of research

- Improving physiological efficiency
- Improving water use efficiency
- Top borer tolerance
- Nutrient interaction

5. Publications (Best 5)(, NAAS Rating 2016)

- **Rai Rama Kant**, Pushpa Singh, AK Shrivastava, Archna Suman,(2008), Modulation of low temperature induced biochemical changes by potassium, zinc and Ethrel to improve sugarcane bud sprouting, *Journal of Agricultural and Food chemistry*, 56(24):11976-82, (NAAS : 8.91)
- Pushpa Singh, Namita Arya, Priyanka Tiwari, Archna Suman, **Rama Kant Rai**, AK Shrivastava, S Solomon (2008), Use of glutaraldehyde and benzalkonium chloride for minimizing post-harvest physio-chemical and microbial changes responsible for sucrose losses in sugarcane.*Journal of Agricultural and Food Chemistry*, 56, 7176-7183. (NAAS : 8.91)
- Pushpa Singh,**Rama Kant K Rai**, Archna Suman, TK Shrivastava, KP Singh, RL Yadav (2014), Soil root interface alterations in sugarcane plant and ratoon crop : Implications in dry matter accumulation, *Communication in Soil Science and Plant Analysis*, 46(4) 454-475) (NAAS : 6.52)
- Pushpa Singh, A.K. Shrivastava, A. Suman, N. Arya, P. Tiwari, **Rai Rama Kant**(2008), Allelopathic effects of hydroxamic acids from sugarcaneleaves on germination and growth of crops. *Allelopathy Journal*, 23 (1), 203-212.(NAAS :6.52)
- **Rama Kant Rai**, Nidhi Tripathi, Deeksha Gautam, Pushpa Singh(2016), Exogenous application of *Ethrel* and Gibberellic acid stimulates physiological growth of late planted sugarcane with short growth period in sub-tropical India, *Journal of Plant Growth Regulation*, DOI10.1007/s00344-016-9655-5(NAAS : 8.24)

- **Total Number of Publications:** About **220** (Research Papers, Seminar/ Conf Proc, Edited Books, Book Chapters, Research Bulletins and Policy Paper)

6. Awards and Fellowships

- **Rama Kant Rai**, Pushpa Singh, S Solomon (2014), Best sugarcane agriculture paper award for Sugar and Allied Industries, **Bhartiya Sugar**, Khardi, Pune

7. Other Relevant Activities

- Chairman / chairperson of national level committees & decision /policy making bodies
- Member in several important committees /decision /policy making bodies of Int /National level
- Guidance for B. Tech /M.Sc/ Ph.D dissertation as major guide / success of student
- External examiner and paper-setter of PG level for Universities and Boards
- Reviewer of peer-reviewed NAAS listed journals International / National Journals
- Compilation of reports and divisional documents
- Contribute to linkages : Harinagar Sugar Mills Ltd, Bihar and Shamli Sugar Mill, Shamli
- Involved in field impact assessment