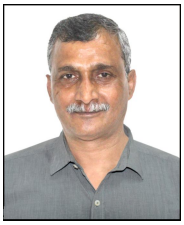
Profile of Scientists



1.	**Name of Scientists**	**:**	Dr. Dinesh Singh
2.	**Personal biodata**		
a.	**Position/Designation**	**:**	Project Coordinator (Sugarcane) & Principal Scientist-Plant Pathology
b.	**Contact Details**		
i.	**ICAR Email ID**		Dinesh.Singh3@icar.gov.in
ii.	**Personal Email ID**		1970dinesh@gmail.com
iii.	**Mobile No.**		9452655352
c.	**Joining date in**		
i.	**ICAR**		26.04.2007
ii.	**IISR**		06.08.2013
	c) Discipline and Specialization	**:**	Plant Pathology specialized in fungal pathology

d)Training/advance exposure in the area of work :

- Attended 21 days advance training on *"Detection and Management of Wheat Pathogens"* held at CAS, Division of plant Pathology, IARI, New Delhi, July 16-30, 1998.
- Attended 21 days advance training *"Variability in Rust Fungi and Postulation of Rust Resistance Genes"* held at CAS, Division of plant Pathology, IARI, New Delhi, December 15, 1999-January 13, 2000.
- Attended 21 days advance training *"Application of Biological and Molecular Techniques for characterization of Plant Pathogens"* held at CAS, Division of plant Pathology, IARI, New Delhi, March, 9-29, 2004.
- Five days exposer visit of "Downy Mildew Laboratory", Department of Applied Botany and Seed Pathology, University of Mysore, w.e.f 15.12.2009 to 19.12.2009 has been done.
- Attend 6 days fundamental training on administration finance and purchase held during 26-31 Oct. 2009 at DSR, Mau.
- Participated in six days training programme on Data Analysis Using SAS under the aegis NAIP Consortium "Strengthening Statistical Computing for National Agricultural Research System" organised at Narendra Dev Universitry of Agriculture and Technology, Kumarganj, Faizabad during 19-24 March, 2012.

3. Contribution to the Scientific advancement :

- Developed nine sugarcane varieties namely CoLk 12207, CoLk 12209, CoLk 14201, CoLk 14204, CoLk 15201, CoLk 15206, CoLk 15207, CoLk 15466 and CoLk 16466 and all were released by CVRC through AICRP mode (as team member).
- Since last 8 years, discharging the duties of In-charge Nodal Centre for supplying virulent red rot cultures (each year) to all the co-ordinating centres for evaluation of advance materials (IVT and AVT) to develop durable red rot resistant varieties.

- Reported first that Co 0238 succumbed with red rot at two locations (Lakhimpur and Kushinagar) during 2014-15 cropping seasons and played a key role for identification of new red rot pathotype CF 13 (Co 0238). Also worked out the cultural, physiological, morphological and pathogenic characters of the new race.
- Mapped the existing sub-tropical red rot pathotypes (CF 07, CF 08, CF 09 and CF 13). Got characterized the same and has also been deposited in different repositories.
  NBAIMCC: Accession Number: NAIMCC-F-03382 for Cf 07; NAIMCC-F-03384 for Cf 08; NAIMCC-F-03383 for Cf 09 and NAIMCC-F-06123 for Cf 13. NCBI: Accession Number: MG786760-CF07; MG786761- CF08; MG786762- CF09 and MW644776- CF13.
- Developed the technology for management of Yellow Leaf Disease (YLD) of sugarcane through thermotherapy.
- Developed four standard protocols as seed-borne pathogenic mycoflora detection techniques for the detection of seed-borne pathogen in rice and wheat under Indian condition. The techniques were Standard Purity Work Board, Standard Towel Paper Method, Standard Blotter Paper Method and Standard Agar Plate Method.
- It has been concluded that *Helminthosporium sativum, Alternaria triticina, Alternaria alternata* and *Curvularia lunata* were the major emerging seed-borne pathogens in wheat under changing climate scenario and crop cultivation practices. These pathogen should be included in objectionable seed-borne pathogens of wheat under WTO resume.
- It has also been concluded that *Bipolaris oryzae, Curvularia lunata oryzae, Alternaria padwickii,* and *Xanthomonas oryzae* were the major emerging seed borne pathogens in rice under modern intensive crop cultivation practices. Only *Xanthomonas oryzae* comes under objectionable seed-borne pathogen whereas the others should be included in objectionable seed-borne pathogens of rice under WTO resume.
- Established the pathogenic variability amongst *Bipolaris sorokiniana* from wheat seed of distant localities. Amongst the isolates tested, three different pathogenic capabilities have been established.
- Evaluated more than three hundred new isolates of *Colletotrichum falcatum* for their virulence on 20 designated differentials *viz.,* BO 91, Co 419, Co 975, Co 997, Co 1148, CoS 8436, Co 7717, Co 62399, CoC 671, CoJ 64, CoS 767, Co 7805, Co 86002, Co 86032, CoSe 95422, CoV 92102, Co 0238, Khakai, SES and Baragua.
- Evaluated more than 700 new sugarcane genotypes against red rot, smut, wilt and YLD.
- Rhizospheric microbial diversity had been studied in relation to different sugar profile varieties for growth promotion and disease management. Variety CoLk 94184 was found associated maximum number of bacteria in their rhizospheric region followed by CoJ 64. While in the case of fungal mycoflora association variety CoJ 64 yielded the maximum number of mycoflora followed by Co 1148.

4. Future planning of research (in bullets) :

- Management of red rot of sugarcane through IDM.
- Developments of durable red rot resistance sugarcane variety.
- Development of protocol for suitable seed treatment in sugarcane.

5. Publications (best ten) :

1. Vandana, P.; Singh, Dinesh; Srivastava, S.; and Guru, G. D. (2022). Development and standardization of culture media prepared by sugarcane juice, a natural source for causal agent of sugarcane red rot disease *Colletotrichum falcatum*. *Research Journal of Biotechnology*. 17(2):125-142.
2. Viswanathan, R.; Selvakumar, R.; Govindaraj, P.; Chhabra, M. L.; Parameswari, B.; Singh, Dinesh; Singh, S. P.; Mehra, Rakesh; Bharti, Y. P.; Md Minnatullah; Varma, P. K.; Ravichandran, V. and Sharma, Anuradha (2021). Identification of resistance to red rot in interspecific and intergeneric hybrid clones of sugarcane**.** *International Sugar Journal* 12: 840-848.
3. Vandana, P.*; Singh, Dinesh*; Srivastava, S. and Guru, D. G. (2021). Impact on plant growth promotion of sugarcane through its rhizospheric mycoflora. *International Journal of Current Microbiology and Applied Sciences* 10 (03): 606-615.
4. Chandra, A.*; · Singh, Dinesh; Joshi, D.; Pathak, A. D.; Singh, R. K. and Kumar, S.* (2021). A highly contiguous reference genome assembly for *Colletotrichum falcatum* pathotype Cf 08 causing red rot disease in sugarcane. *3Biotech* 11: 148-154.
5. Viswanathan, R.; Singh, S. P.; Selvakumar, R.; Singh, Dinesh; Bharti, Y. P.; Chhabra, M. L.; Parameswari, B.; Sharma, A. and Md. Minnatullah. (2021). Varietal break down to red rot in the sugarcane variety Co 0238 mimics vertifolia effect: characterizing new *Colletotrichum falcatum* pathotype *CF13*. *Sugar Tech*: https://doi.org/10.1007/s12355-021-01070-7
6. Dinesh Singh, Ankita Tripathi, A. K. Sinha and T. N. Tiwari (2015). Studies on variability of pathogens causing black point in wheat. *International Journal of Basic and Applied Agricultural Research.* Vol. 13: 368-375.
7. A. K. Sinha, T. N. Tiwari, D. K. Agarwal, and Dinesh Singh (2015). Effect of spacing and foliar application of potassium nitrate and calcium nitrate on seed yield in rice. *National Academy of Agricultural Science*. Vol. 33 (3): 2911-15.
8. Dinesh Singh, Ankita Tripathi and A. K. Sinha (2014). Screening of chilli genotypes against Fusarium wilt. J. Pl. Dis Sci. Vol. 09 (2): 268-271.
9. Singh, Dinesh; Singh, Mahinder and Verma, V. S. (2007). Prevalence of foliar blight pathogens attacking wheat in Shivalik foothills and significance of sowing dates for its management. *Indian Phytopatho.* **60** (2): 202-207.
10. Singh, Dinesh; Singh R. V; Singh, A. K. and Singh, R. N. (2005). Sources of resistance against foliar blight of wheat caused by *Helminthosporium sativum*. *Indian Phytopatho.*

58 (1): 111-113.

6.	**Awards and Felloship**	**:**	• Best Paper Presentation Award of Indian Phytopathological Society, New Delhi in 1995. • Gold Medal in M. Sc. (Ag.): -Plant Pathology. • For the contribution toward building of the research standard, the *Association of Plant Pathologists of India, Dr. PDKV, Akola* had awarded me the Executive Member Ship for life time. • Awarded as "*Adarsh Vaighanik Award*" by NDUAT, Faizabad in 2011. • Awarded as *"Krishak Mitra Award"* by NDUAT, in 2012.
7.	**Other relevant activities of Scientist (in bullets)**	**:**	• Conducted Post Graduate training of 30 students and guiding 3 Ph. D. students. • Conducting more than 200 theory and practical classes of different training programmes of Institute. • Transferring the different technologies of agriculture for maximizing the yield potential of all cultivated crops specially Sugarcane under the Scheme "Mera Gavan Mera Gaurav" in Bharathoopur, Arkuna, Devera Kot, Thareru and Mubarak Ganj villages of Faizabad district of Uttar Pradesh. • Performing other duties of the Institute time to time as per instruction of Competent Authority.