Proforma for information to be provided by the Teaching/Academic/Research Staff

Employee No..16312

1. **Name** : (first name) **Ramesh** (middle name) **Chand**(surname)

2. **Designation** : **Professor**

3. **Academic Qualifications** :

Sr.	Degree	Institution	Year
1	B.Sc. (Ag)	I. Ag. Sc. Banaras Hindu University	1978
2	M.Sc. (Ag)	Mycology and Plant Pathology , I. Ag. Sc. Banaras Hindu University	1980
3	PhD	Gorakh Pur University	1989

4. **Area of Specification : (brief write-up**).

We are working on the genetics of host – pathogen interaction for understanding the durable resistance to spot blotch in wheat and rust resistance in the pea. Resistance components are identified in both the crops. Some of these components are transferred in the wheat and pea. A selection model has been developed to enhance the resistance components in the population of wheat and pea. Evolution for the aggressive population in *Bipolaris sorokiniana* has been worked out by heterokaryosis. This will help to predict the commercial life of wheat genotypes. Protocol for *in vitro* selection of resistance against the toxins produced by *B. sorokinina* in case of Barley has been developed. Markers added selection against prominent pathogens in wheat and pea are under progress. Farmer's participatory varietal selection and research is also take up by our lab since 1997 and many disease resistance material selected by the farmers and using it for commercial cultivation.

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6. **Projects Undertaken as PI/Co PI**:

Sl.No.	Name of the Project	Cost of the project (Rs, Indian currency)	Funding agencies	Duration Year	Principle investigator
1.	Cereal System Intensification in South East Asia	45,000 US $	CIMMY T	2010- 2013	Dr R Chand PI
2.	Out reach programme on" Diagnosis and Management of Leaf spot Disease of Field and Horticultural Crops	35,60,000	ICAR	2009- 2012	Dr R Chand PI
3.	Role of melanin in reproductive biology of *Bipolaris sorokiniana*	7,71,800	UGC	2009 -2112	Dr R Chand PI

4.	Research based solution of bacterial wilt of brinjal	60,000	GDS	2009	Dr RChand PI
5.	In situ paddy straw decomposition in rice – wheat cropping system	7.000.00	CSIR	2004 - 2008	Dr R Chand . PI
6.	Tillage revolution	15,000,00	US AID	2004- 2006	Dr R.Chand, PI
7.	Reaping benefits: Impact assessment of resource conservation Technology	4,50,00	CABI	2003 – 2006	Dr R.Chand, .PI
8.	Barley germplasm evaluation	8,00,000	ICAR	2003-2006	Dr R.Chand, Co.PI
9.	Participatory research to increase the productivity of wheat	50,00,000	CIMMY T	2002-2005	Dr. R. Chand, Co-PI
10.	Increasing wheat production and building research capability in warm areas of Eastern India	32,50,000	ICAR	2001-2003	Dr. R. Chand, Co-PI
11.	Search for molecular markers for resistance to spot blotch pathogen (*Bipolaris sorokiniana*)	6,50,000	CSIR	2003-2005	Dr. R. Chand, Co-PI
12.	Testing Karathane for the control of powdery mildew	80,000	De Nocil	2003-2004	Dr. R. Chand, PI
13.	Validation and promotion of IPM technology in pigeon pea	18,50,000	ICAR	2001-2004	Dr. R. Chand, Co-PI
14.	Identification and characterization of rust resistance and mapping gene for resistance	33,00,000	ICAR	2000-2003	Dr. R. Chand, Co-PI
15.	Impact of pesticide on soil biota and non-target organisms in rice-wheat cropping system	56,00,000	ICAR	1999-2003	Dr. R. Chand, Co-PI
16.	Biological control of parthenium	35000	ASPEE		Dr. R. Chand PI

7. Awards/Recognitions if any : Visiting Scientist, Belgium

8**. List of major Publications : (in order of importance)**
(Performances/exhibitions in the case of Faculties of Performing Arts and Visual Arts)

1. Chaurisa, S. A.K.Joshi, R. Dhari and R. Chand.1999. Resistance to foliar blight of wheat: A search. Genetic Resources and Crop Evolution. 46: 469 – 475.
2. Chaurasia, S., R Chand and A.K.Joshi 2000. Relative dominance of *Alternaria triticina* Pras. et Pra. and *Bipolaris sorokiniana* (Sacc.) Shoemaker, in different growth stage of wheat (*T. aestivum* L.). J. Pl. Dis. Protec. 107: 176 –181
3. Joshi,A.K. R.Chand and B. Arun 2002. Relationship of plant height and days to maturity with resistance to spot blotch in wheat. Euphytica 123: 221-228
4. Joshi,A.K. and R.Chand. 2002. Inheritance of leaf angle and its association with spot blotch in wheat. Euphytica 124: 283 – 291.

5. R.Chand, H.V. Singh, A.K. Joshi and E. Duveiller 2002 Physiological and morphological aspects of *Bipolaris sorokiniana* conidia surviving on wheat straw. The Plant Pathology Journal. 18: 328 – 332.
6. R.Chand, S.P. Pandey, H.V.Singh and A.K.Joshi. 2003. Variability and its probable cause in the natural population of Spot blotch pathogen *Bipolaris sorokiniana* of Wheat (*T.aestsivum)* J. Plant Disease and Protection. 110: 27-35
7. Arun B., A.K. Joshi, R. Chand and B.D. Singh 2003. Wheat somaclonal variants showing earliness, improved spot blotch resistance and higher yield. Euphytica 132: 235-241.
8. Singh D.P., R. Chand, D.S. Dodan, America Singh,K.P.Singh, A.N. Tewari, K.M.P. Singh, Satvinder Kaur, R.N. Singh, A.K. Singh, S.P.Singh, V.K. Singh, R.N. Brahma, I.K. Kalpanwar, V.A. Solanki, R.K. Pathak, S.K. Pant, S.Y. Das, and A.K. Charudhary 2003.Evaluation of wheat and *Triticale* genotypes to leaf blight caused by *Bipolaris sorokiniana* and *Alternaria triticina*. Indian Phytopah. 56: 473-475.
9. Joshi, A.K., R. Chand , S. Kumar and R.P. Singh. 2004 Association of leaf tip necrosis with the spot blotch pathogen in wheat. Crop Sciences 44:792- 797
10. Joshi, A.K, S. Kumar R. Chand and G. Ortiz. Ferrara. 2004 Inheritance of spot blotch in wheat. Plant Breeding. 123: 213 – 219
11. Chand, R., M. Lal and S. Chaurasia. 2004 Phytotonic effect of the carbendazim on greengram and control of Cercospora leaf spot (*Cercospora canescens*) Indian Journal of Agricultural Sciences 73: 572-573.
12. Pandey, S.P., S. Kumar, U. Kumar, R. Chand, and A.K.Joshi. 2005. Sources of inoculum and reappearance of spot blotch of wheat in rice – wheat cropping system in eastern India. European J. Plant Pathology 111, 47-55.
13. Chand R., C.P. Srivastava and Chanda Kushwaha. 2004. Screening technique for pea (*Pisum sativum*) genotypes against rust disease (*Uromyces fabae*). Indian J. Agricultural Sciences. 74, 166- 167.
14. Sharma, R.C, E. Duveiller, F.Ahamad, B. Arun, D.Bhandari, M.R.Bhatta, R. Chand., P.C.P.Chaurasia, D.B.Gharti, M.H.Hossain, A.K.Joshi, B.N. Mahto,P.K Malaker, M.A. Reza, M.Rahaman, M.A. Samad, M.A. Shaheed, A.B.Sidique, A..K. Singh, K.P.Singh, R.N. Singh and S.P. Singh 2004. Helminthosporium leaf blight resistance and agronomic performance of wheat genotypes across regions of South Asia. Plant Breeding 123: 520- 524.
15. Vijayalakshmi, S., K. Yadava, C. Kushwaha, S.B.Sarode, C.P. Srivastava, R. Chand and B.D. Singh 2005. Identification of RAPD markers linked to the rust (*Uromyces fabae*) resistance gene in pea (*Pisum sativum*) Euphytica.144;265-274.
16. Joshi, A. Souframanian, J., R. Chand and Pawar, S.E. 2006. Genetic diversity of *Cercospora canescens* (Ellis and Martin) isolates, the pathogen of Cercopora leaf spot in legumes. Current Science 90: 564- 568.
17. Chand, R., C.P.Srivastava, B.D.Singh & S. B.Sarode 2006 Identification and characterization of slow rusting components in pea. Genetic Resources and Crop Evoluation. 53: 219-224
63. Kushwaha, C., R. Chand, Chandra Prakash Srivastava 2006. Role of aeciospores in outbreak of pea (*Pisum sativum* L) rust (*Uromyces fabae)* European J. Plant Patholgy. 115: 323 - 330
18. Joshi, A. K., M. Kumari, V.P. Singh, C.M. Reddy, S. Kumar, J. Rane & .R. Chand 2007 Stay green trait: Variation, inheritance and its association with spot blotch resistance in spring wheat (*Triticum aestivum* L.) Euphytica 153: 59- 71
19. A.K. Joshi, R. Chand, B. Arun, R.P. Singh & Rodomiro Ortiz 2007 Breeding crops for reduced-tillage management in the intensive, rice-wheat systems of South Asia. Euphytica 153: 135- 151.
20. Joshi, A.K. Ferra, Ortiz G, Crossa, J. Singh, G. Sharma R., Chand, R., Barma,N.C.D.and Prasad, R. 2007. Combining superior agronomic performance and terminal heat tolerance with resistance to sport blotch pathogen *Bipolaris sorokinina* of wheat in warm humid Gangetic plains of South Asia. Field Crop Research 103: 53-61
21. Kushwaha, C.; C. P. Srivastava R.Chand and B.D.Singh 2007. Identification and evaluation critical time for assessment of slow rusting in pea against *Uromyces fabae* Field Crop Research. 103: 1- 4.
22. S.K. Jaiswal, Sweeta, L.C. Prasad, S.P. Pandey. S. Sharma, R. Chand and A.K. Joshi 2007. Identification of molecular marker and aggressiveness for different group of *Bipolaris sorokiniana* isolates causing spot blotch in wheat (*Triticum aestivum* L.) Current Microbiology 55: 135- 141.
23. Joshi, A.K., G.Ortiz-Ferrara J. Crossa, R. Chand, G. Alvarado, M.R. Bhatta, E. Duveiller, G. Singh, R.C. Sharma , D.B. Pandit, M.M.A.B. Siddique , S.Y. Das and R.N. Sharma 2007. Associations of environments of South Asia based on spot blotch disease of wheat caused by *Bipolaris sorokiniana* Crop Sciences 43: 1071- 1081

24. D.Kumar, R. Chand, L.C. Prasad and A.K. Joshi 2007. A new technique of monoconidial culture of most aggressive isolate in a given population of Bipolaris sorokiniana inciting spot blotch in wheat and barley world J. of Microbiology 23:1647- 1651
25. G. Ortis – Ferrara, AK. Joshi, R.Chand, M.R. Bhatta, A. Mudwari, D.B. Thapa M.A.Sufian, T.P. Sakia, R. Chatrath, J.R. Witcombe and Wirk and R.C. Sharma 2007. Partnering with farmers to accelerate adoption of new technology in South Asia to improve wheat productivity. Euphytica 157: 399 – 407.
26. Tayagi,K. U.Kumar, L.C. Prasad, R. Nandan, R. Chand and A.K. Joshi 2007. Inheritance and identification of RAPD markers for resistance to spot blotch of barley caused by Cochliobolus sativus L. Indian J. Genetics. 67: 309-314
27. S P Pandey, S Sharma, R. Chand, P. Sahi and A.K. Joshi 2008 Clonal variability in the spot blotch pathogen *Bipolaris sorokiniana* of wheat and its relevance in generation of new pathotypes Current Microbiology 56: 33- 41
28. R. Chand, Devyani Sen, K.D. Prasad, A.K. Singh, B.M.Bashyal, L.C. Prasad and A.K. Joshi 2008. Screening for disease resistance in barley cultivars against Bipolaris sorokiniana using callus culture method. Indian J. Exp. Biology 46: 249-253
29. Tyagi, K., R. Nandan, U. Kumar, L.C. Prasad, R. Chand, and A.K. Joshi 2008 Inheritance and identification of molecular markers associated with spot blotch (*Cochliobolus sativus* L.) resistance through microsatellites analysis in barley Genetics and Molecuar Biology 31;734- 742
30. Singh, S.K. D. Singh, R.Chand and J. Singh 2008. A new virulent strain of *Xanthomonas campestris* pv. *parthenii* causing leaf spot of Parthenium. Indian Phytopaptology 61:371
31. U. Kumar, S.Kumar, A.K. Joshi, R. Chand and M.S. Roder 2009. Mapping of resistance to spot blotch disease caused by *Bipolaris sorokiniana* in spring wheat. Theoretical Applied Genetics 118:783-792
32. D.P. Singh,K.P.Singh, S.K. Mann, S.S.Karwasra, M.S.Beniwal, R.S.Kanwar, D. Kaur, S.Verma, D. Singh, V.K. Singh, S.K. Pant, I.K.Kalappanwar, R.Chand, L.C.Prasad, R.N.Singh, A.K.Singh, A.K.Mathur, B.D.Yadav, S.P.Bishnoi, R.S. Beniwal,V.K. Rathee and Kanak Srivastava 2007. Sources of multiple disease and cereal cyst mematode resistance in barley. Pl. Dis. Res. 22: 145- 146
33. B.M. Bashyal, R.Chand, C. Kushwaha, L.C.Prasad and A.K.Joshi 2009. An improved *in vitro* technique for screening of barley genotypes against toxin produced by spot blotch pathogen *Bipolaris sorokiniana* Indian J. of Agricultural Sciences 79: 562-564
34. B.M. Bashyal, R.Chand, C. Kushwaha, L.C.Prasad and A.K.Joshi 2009. Association of melanin content with conidiogenesis in *Bipolaris sorokiniana* of barley (*Hordeum vulgare* L.) World J. Microbiology and Biotechnology 26: 309 -316.
35.U. Kumar, A.K. Joshi, S. Kumar, R.Chand and M.S. Roder 2010. Quantitative trait loci for resistance to spot blotch caused by *Bipolaris sorokinina* in wheat (*T. estivum*) line Ning 8201 and Chirya 3. Molecular Breeding (Published on line)
36. A.K. Joshi, J. Crossa, B. Arun, R. Chand, R. Trethowan, M. Vargas and I. Ortiz- Monasterio 2010, Genotype x environment interaction for zinc and iron concentration of wheat grain in eastern Gangetic Plains of India. Field Crop Research 116:268 - 277

9. Additional Information/Achievements:

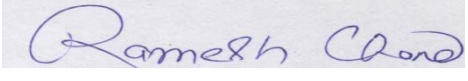
Member Intelectual Property Committee B.H.U.

Patent = One

Technologies Developed:

1: Two new variety of wheat (HUW510 for heat stress and HUW 533 for rainfed)
2 : Varity of Rajmash (HUR 15)
3: New granular formulation of bio-agent *Trichoderma***.**

Teaching : Developed e courses



Date : 31-03-201 Signature

Place : BHU Varanasi