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

Employee No. 18008

1. Name : (first name) **HARIKESH** (middle name) **BAHADUR** (surname) **SINGH**

2. Designation : PROFESSOR

3. Academic Qualifications :

Degree/Diploma	University/Institution	Year
Ph. D.*	Banaras Hindu University, Varanasi	1981
M. Sc.	Gorakhpur University, Gorakhpur	1977
B. Sc.	Avadh University, Faizabad	1975

4. Area of Specification : (brief writeup)

- Management of phytopathogens of different crops using eco-friendly management
- practices

- Development of formulations of fungal and bacterial biocontrol agents and biofertilizers using agricultural wastes.
- Development of delivery systems for application of biopesticides and biofertilizers in the field

5. Contact Information:

Address of Residence:

Flat No. 12, Siddhartha Residency II; Kaushlesh Nagar, BHU-DLW Road, Sunderpur, Varanasi-221005

Address of Correspondence:

Department of Mycology & Plant Pathology, Institute of Agricultural Sciences, Banaras Hindu University, Varanasi-221005

Phone No. : 0542-2307110, 22307116, 0542-6702583, 6702573 (O), 0542-2316369 (R)
0542-2368993 (Fax) +91-9415355571 (Mob)
E-mail: hbs1@rediffmail.com

6. Projects Undertaken as PI/Co PI:

S.No.	Title of project	Name of PI	Funding agencies	Amount (Rs) in lac	Date of start
1.	Training cum field demonstration of seed treatment with bioagents as an Important Component of IPM Practices for economically important crops of Uttar Pradesh	Prof. H.B. Singh	Ministry of Agriculture & Cooperation, New Delhi	39.20	2008-09
2.	Promoting bio-farming and IPM Practices in Eastern Uttar Pradesh through Training cum field Demonstration Under Participatory Approach	Prof. H.B. Singh	Ministry of Agriculture & Cooperation, New Delhi	43.40	2008-09
3.	Establishment of Plant Health Clinic	Prof. H.B. Singh	State Horticulture Mission	20.00	2009-10
4.	Field Evaluation of bioefficacy of Biofertilizer (Products) Kit in Paddy	Prof. H.B. Singh	IPM Biocontrol Labs Pvt. Ltd. Hyderabad	0.50	2008-09
5.	Field Evaluation of bioefficacy of Biofertilizer (Products) Kit in Potato	Prof. H.B. Singh	IPM Biocontrol Labs Pvt. Ltd. Hyderabad	0.50	2008-09
6.	Modulating biofarming oriented rural livelihood through biotechnological approach-based micro-enterprising among farmers by training-cum-field demonstration.	Prof. H.B. Singh	D.S.T. New Delhi	21.31	2009-10
7.	Popularization of biopesticides based on *Trichoderma* spp. among SC/ST farmers of Lucknow and Barabanki Districts by training-cum-field demonstration.	Prof. H.B. Singh	DBT New Delhi	20 .98	2006-09
8.	Training-cum-field demonstration of seed treatments with bio-agents as an important component of IPM practices for economically important crops of Uttar	Prof. H.B. Singh	Ministry of Agriculture and Cooperation	17.34	2007-09

9.	Pradesh. Promoting bio-farming eastern Uttar Pradesh through farmer participatory approach.	Prof. H.B. Singh	New Delhi Ministry of Agriculture and Cooperation New Delhi	11.78	2007-09

7. Awards/Recognitions if any :

(a) Awards

Awards	**Agency**	**Awarded for**	**Year**
CSIR Technology Prize	Council & Scientific and Industrial Research, New Delhi	Development of early maturing disease and pest resistant menthol mint (*Mentha arvensis)* varieties "Kosi" and "Himalaya"	1999
Scientific writing	Vigyan Bharti, Lucknow by State Minister of Science & Technology, Government of India.	Awarded for Scientific writing	2000
Scientific writing in popularization of Social Forestry	Forest Department of UP	Awarded for Scientific writing	2001
Best paper presentation	Swadeshi Science Union of India	Best paper presentation	2001
SOM Award	Essential Oil Association of India	Development a new variety of *Mentha arvensis* name "kosi"	2005
Prof. V. P. Bhide Memorial Award	Society of Mycology and Plant Pathology, Udaipur	Significance contributions in the field of biological control using *Trichoderma*	2006
Scientist of Excellence Award	Society for Plant Research, Sardar Vallabh Bhai Patel University of Agric & Tech., Meerut	For outstanding contribution in the field of Botany and Biotechnology	2007
BRSI Industrial Medal Award	The Biotech Research Society	In recognition for pioneering works and achievements leading to commercialization in the field of Biotechnology	2007
Bioved Award	Bioved Research Society, Allahabad	In recognition for pioneering works to promote organic farming	2009

Sangam Jyoti Samman	Jevan Jyoti Hospital, Allahabad	In recognition for pioneering works to commercialization of biofertilizerpromote organic farming	2009
Akshyavat Samman	Sai Shikha Samiti, Prayag	In recognition for pioneering works to promote organic farming	2009

(b) Fellowship

1. Elected as Fellow of the National Academy of Agricultural Sciences (FNAAS), New Delhi, 2006
2. Elected as Fellow of Biotech Society of India (FBRS), 2006
3. Elected as Fellow of Indian Society of Mycology & Plant Pathology (FISMPP), Udaipur, 2005.
4. Elected as Fellow of International College of Nutrition (FICN), New Delhi, 2002.
5. Elected as Fellow of Indian Phytopathological Society (FPSI), New Delhi, 1986

(c) Special Recognition:

- Elected Zonal President Mid-Eastern Zone by Indian Phytopathological Society, New Delhi, 2010.
- Elected Councillor, Mid-Eastern Zone by Indian Phytopathological Society, New Delhi, 1999.
- Elected Councillor, East Zone by Indian Society of Mycology & Plant Pathology, Udaipur, 2003
- Awarded Senior Research Fellowship of CSIR, New Delhi during Ph. D. Program
- Elected Councillor, Society of Plant Reproductive Biologist 2008.
- Worked as Coordinator, CSIR-UGC NET Examination during 2004-06
- Worked as Coordinator, Shyama Prasad Mukherjee Fellowship CSIR, New Delhi during 2005

- Team member of Expert Committee on Microbial Bio-resources, National Bioresources Development Board (NBDB) for coordinating the Resource of Uttar Pradesh and Uttaranchal.
- DBT representative on the Institutional Bio Safety Committee (IBSC) on N. D. Univ. of Agric. & Tech., Faizabad.
- Executive Editor, Indian Journal of Plant Pathology (2000-2010).
- Member Board of Studies of several Indian Universities.
- Recognized as Ph. D examiner of several Indian Universities.
- Delivered several lead papers in different Institutes/Universities.
- Chaired sessions in several conferences and symposia.
- Nominated as Expert member (Life Sciences), Woman Scientist selection Committee, Department of Science and Technology for a period of two years.
- Honorary Scientific Advisor in Scientific Advisory Committee of Varanasi Bio-Research Pvt. Ltd., Varanasi.
- Elected as Executive Committee Member (2005 -2007) of Essential oil Association of India, New Delhi.
- Nominated as member of publication committee of Essential oil Association of India for its official journal "Indian Perfumer".
- Nominated as member of U. P. State Biodiversity Board (2007-2009) by Department of Forest, Govt. of U. P., Lucknow.
- Appointed as Member of DJIT, State Horticulture Mission to monitor ongoing projects in Varanasi, Jaunpur and Ghazipur districts of U. P. for the year 2007-2008.
- Member Research Advisory Committee of Mustard Research and Promotion Consortium (MRPC), New Delhi for (2007-2009).
- Nominated as Editor, Journal of Mycology & Plant Pathology by Society of Mycology and Plant Pathology, Udaipur for the year 2007-2008.
- Editor, Journal of Medicinal Plant Sciences by Society for Conservation and Resource Development of Medicinal Plants, New Delhi (2008-2009).
- Member Editorial Board of Brassica: an International Journal (2007).
- Technical Advisor M/s. Balaji Crop Care, Pvt. Ltd., Hyderabad.
- Acted as Co-convener and Chairman of Plant Disease Control Session of the 2nd Asian Congress of Mycology & Plant Pathology held at Osmania University Hyderabad, Dec. 18-

21, 2007.

- Referee of several journals namely Indian Phytopathology, Journal of Eco-friendly Agriculture, Journal of Biological Control, JMAPS, Natural Product Radiance, Indian Perfumer , Bioresource Technology, Food and Chemical Toxicology etc.

- Member School Board and Board of Post Graduate Studies, SASRD, Nagaland University (2008-09).

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

1. Singh, H.B., Singh, B.N., Singh, S.P. and C.S. Nautiyal (2010). Solid-state cultivation of *Trichoderma harzianum* NBRI-1055 for modulating natural antioxidants in soybean seed matrix. ***Bioresource Technology*** **101**: 6444-6453.

2. Singh, B.N., Singh, B.R., Sarma, B.K. and **Singh, H.B.** (2009). Potential chemoprevention of *N*-nitrosodiethylamine-induced hepatocarcinogenesis by polyphenolics from *Acacia nilotica* bark. ***Chemico-Biological Interactions*** **181**:20-28.

3. **Singh, H.B.** and D.P. Singh (2009). From Biological control to Bioactive metabolites: Prospects with *Trichoderma* for safe human food. ***Pertanika J. Trop. Agric. Sci.*** **32(1)**: 99-110.

4. Singh, B.N., Singh, B.R., Singh, R.L., Prakash, D., Singh, D.P., Sarma, B.K. Upadhyay, G. and **H. B. Singh**. 2009. Polyphenolics from various extracts/fractions of red onion (*Allium cepa)* peel with potential antioxidant and antimutagenic activities. ***Food and Chemical Toxicology*** **47(6)**: 1161-1167.

5. Singh, B.N., Singh, B.R., Singh, R.L., Prakash, D., Sarma, B.K. and **H. B. Singh.** 2009. Antioxidant and Anti-quorum sensing activities of green pod of *Acacia nilotica* L. ***Food and Chemical Toxicology*** **47(4)**: 778-786.

6. Singh, B.N., Singh, B.R., Singh, R.L., Prakash, D., Dhakarey, R., Upadhyay, G. and **H. B. Singh**. 2009. Oxidative DNA Damage protective activity, antioxidant and anti-quorum sensing potentials of *Moringa oleifera*. ***Food and Chemical Toxicology*** 47(6): 1109-1116.

7. Singh, D.P., Bahadur A, Sarma, B.K., Maurya S., **Singh, H.B**. and U.P. Singh 2009. Exogenous application of L–phelylalamine and ferulic acid enhance phenylalamine activity and accumulation of phenolic acid in pea (*Pisum sativum*) to offer protection against *Erysiphe pisi*. ***Archives of Phytopathology & Plant Protection*** (In Press).

8. Sahni, S., Sarma, B. K., Singh, D. P., **Singh, H. B**. and K. P. Singh. 2008. Vermicompost enhances performance of plant growth-promoting rhizobacteria in

Cicer arietinum rhizosphere against *Sclerotium rolfsii*. ***Crop Protection 27***: 369–376.

9. Kumar, A., Sharma, N. and **H.B. Singh**. 2009. Validations of *Phytophthora nicotianae* as leaf rot pathogen of betelvine (*Piper betle* L.) by morphology and molecular sequence analysis. ***J. Phytopathology*** (M.S. under revision).

10. Maurya, S., Singh, R., Singh D.P., **Singh, H.B.**, Singh U.P. and Srivastava, J.S. 2008. Management of collar rot of chickpea by plant growth promoting rhizobacteria. ***J. Plant Protection Research*** (Poland).48(3):347-354.

11. Singh, A., Srivastava, S. and **H. B. Singh.** 2007. Effect of substrates on growth and shelf life of *Trichoderma harzianum* and its use in biocontrol of diseases. ***Bioresource Technology 98***: 470-473.

12. Dhan Prakash, Upadhyay, G., Singh, B. N. and **H. B. Singh.** 2007. Antioxidant and free radical scavenging activities of seeds and agri-wastes of some varieties of soybean (*Glycine max*). ***Food Chemistry 104***: 783-790.

13. Nautiyal, C. S., Mehta, S. and **H. B. Singh.** 2006. Biological control and plant growth promotion by *Bacillus* stains from milk. ***Journal of Microbiology & Biotechnology*** **16** (2): 184-192.

14. Lawania, M., Chauhan, P. S., Chauhan, S.V.S., **Singh, H.B.** and C. S. Nautiyal. 2006. Induction of plant defense enzymes and phenolics by treatments with plant growth promoting rhizobacteria *Serratia marcescens* NBRI 1213. ***Current Microbiology*** **52:** 363-368.

15. Raj, S. K., Khan, M.S., Snehi, S. K., Srivastava, S. and **H. B. Singh**. 2006. A yellow mosaic disease of soybean in northern India is caused by Cotton leaf curl Kokhran virus. ***Plant Disease*** **90** (7): 975.

16. Kumar. A., Bhargava, A., **Singh, H.B.** and D. Ohri. 2006. Screening of exotic *Chenopodium quinoa* accessions for downy mildew resistance under mid-eastern conditions of India. ***Crop Protection*** **25**(8): 879-889.

17. **Singh, H.B.,** Tripathi, A., Srivastava, S., Vikas, Singh P.P. and A. Singh. 2006. Validation of IPM technologies for the management of corm rots and wilts of gladiolus. ***Journal of Eco-friendly Agriculture*** **1**(1): 49-53.

18. Raj, S. K., Khan, M.S., Snehi, S. K., Srivastava, S. and **H. B. Singh**. 2006. First report of Tomato leaf curl Karnatka virus infecting soybean in India. ***Plant Pathology*** **55** (6): 817.

19. Raj, S. K., Khan, M.S., Snehi, S. K., Srivastava, S. and **H. B. Singh**. 2006. First report of '*Canidatus Phytoplasma asteris*' isolate associated with a little leaf disease of pigeoan pea in India. ***Plant Pathology*** **55**: 823.

20. Singh, A., and **Singh H.B.,** 2004. Control of collar rot in mint (*Mentha* spp.) caused

by *Sclerotium rolfsii* using biological means. ***Current Science*** **87** (3): 362-366.

9. Additional Information/Achievements :

(a) List of Patents Awarded (US/PCT/Indian):

1. Nautiyal, C.S., Mehta, S., **Singh, H. B.** and Pushpangadan, P. 2005. Synergistic bioinoculant composition comprising bacterial strains of *Bacillus subtilis* or *B. lentimorbus* from cow milk. **(PCT WO 03/020038A1).**

2. Nautiyal, C.S., Mehta, S., **Singh, H.B.,** Mansighka, S. B., Dawle, S.H., Rajhans, N.E. and Pushpangadan, P. A Synergistic fermented plant growth promoting biocontrol composition. **(PCT WO 2004-087618A1).**

3. **Singh, H.B.**, Ateeque Ahmad, Shishir Srivastava & C. S. Nautiyal. 2006. A synergistic composition useful as bioinoculant **(PCT No. WO 2007/110686 A2).**

4. Nautiyal, C.S., Mehta, S., **Singh, H.B.,** Mansighka, S. B., Dawle, S.H., Rajhans, N.E. and Pushpangadan, P. 2007. Synergistic fermented plant growth promoting, bio-control composition. **(US Patent No.7,297,659B2) Nov. 20, 2007.**

5. Nautiyal, C.S., Mehta, S., **Singh, H. B.** and Pushpangadan, P. 2006. Synergistic bioinoculant composition comprising bacterial strain of accession nos. NRRL B 30486, NRRL B 30487 & B 30488 and a method of producing said composition thereof **(U. S. Patent No. 7097830 B2) Aug. 29, 2006.**

6. **Singh, H. B.,** Kalra, A., Patra, N. K., Kumar, S., Pandey, R., Khanuja, S. P. S. and Shasany, A. K. 2003. Process for the preparation of novel growth media from distillation and other plant wastes for mass multiplication of bio-control fungi. **(US Patent No: 6,511,821).**

7. Kalra, A., **Singh, H. B.,** Pandey, R., Patra, N. K., Katiyar, N., Gupta, M. L., Dhawan, O. M. and Kumar, S. 2002. Strain of *Trichoderma harzianum* useful as nematode inhibitor, fungicide and plant growth promoter and a process for the isolation thereof. **(US Patent No. 6,475,772).**

8. Patra, N. K., Kumar, S., Kalra, A., Singh, **H. B., Singh,** H. P., Mengi, N., Khanuja, S. P. S., Shasany, A. K., Darokar, M. P., Singh, Tanveer, H., Naqvi, A. A., Ram, P., Singh, V. P., Singh, K., Rajput, D. K., Kumar, B., Singh, J. P., Ram, R., Kumar, V. and Sharma, S. R. 2002. `Jal Pallavi`, water logging tolerant *Cymbopogon winterianus*. **(US Patent No: PP12,997).**

9. Kumar, S., Patra, N. K., Singh, H. P., Kalra, A., **Singh, H. B.**, Ram, P., Singh, V. R., Mengi, N., Singh, V. P., Ram, M., Shukla, R. S., Singh, K., Singh, A., Khanuja, S. P. S., Shasany, A. K., Naqvi, A. A., Kumar, B., Singh, M., Rajput, D. K., Ram, R., Singh, J. P., Kumar, V., Tanveer, H. and Sharma, S. R. 2002. Mint plant named `Kosi`. **(US Patent No: PP12,426).**

10. Patra, N. K., Kumar, S. Khanuja, S. P. S., Shasany, A. K., Kalra, A., **Singh, H. B**., Singh, H. P., Singh, V. R., Tanveer, H., Mengi, N., Rajput, D. K., Negi. M. S., Tyagi, N. K., Ram, P., Singh, V. P., Shukla, R. S., Kumar, B., Singh, J. P., Ram, R., Kumar, V. and Sharma, S. R. 2002. High yielding and stable plant of *Cymbopogon flexuosus* called `*Chirharit*`. **(US Patent No: PP13,336).**

11. Patra, N. K., Kumar, S. Khanuja, S. P. S., Shasany, A. K., Kalra, A., **Singh, H. B**., Singh, H. P., Singh, V. R., Mengi, N., Rajput, D. K., Negi. M. S., Tyagi, N. K., Ram, P., Singh, A., Kumar, B., Singh, J. P., Kumar, V. and Sharma, S. R. 2002. High yielding stable plant of *Rosa damascene,* called `*Ranisahiba* **(US Patent No: PP13,203).**

12. Patra, N. K., Kumar, S. Khanuja, S. P. S., Shasany, A. K., Kalra, A., **Singh, H. B.**, Singh, H. P., Singh, V. R., Tanveer, H., Mengi, N., Rajput, D. K., Negi. M. S., Tyagi, N. K., Ram, P., Singh, V. P., Shukla, R. S., Kumar, B., Singh, J. P., Ram, R., Kumar, V. and Sharma, S. R. 2002. Novel, high yielding stable *Mentha arvensis* plant named `Damroo` **(US Patent No: PP12,791).**

13. Kumar, S., Patra, N. K., Khanuja, S. P. S., Shasany, A. K., Kalra, A., **Singh, H. B**., Singh, H. P., Singh, V. R., Mengi, N., Tanveer, H., Naqvi, A. A., Singh, V. P. and Singh, K. 2001. Hybrid mint plant named `Neerkalka'. (**US Patent No: PP12,030).**

14. Nautiyal, C. S., Chauhan, P. S., Srivastava, S., H. **Singh, H. B**., Dawle, S.H. & Mansinghka, S. B. 2006. Fermented bovine byproducts for enhancing plant growth, quality, shelf life and method of preparing thereof. **(US Patent: Ref. No. 0046NF/2006).**

15. Shukla, S., Singh, S.P., **Singh, H. B.** and Pushpangadan, P. 2008. High yielding multiple disease resistant/tolerant stable variety 'Madakini' of Opium poppy.(**US Patent 7442858) Oct. 28, 2008.**

16. Singh, H.B., Srivastava, S., Singh, A. & Nautiyal, C. S. 2006. Rapid composting of bovine dung using *Trichoderma* of Accession No. NRRL 30598 having ability to promote plant growth. (US Patent : Ref. No. 0047NF 2006).

17. Singh, H. B., Kalra A., Patra, N. K., Kumar, S., Pandey, R., Khanuja, S. P. S. and Shasany, A. K. 2006. A process for the preparation of novel growth media from distillation and other plant wasters for mass multiplication of bio-control fungi. **(Indian Patent No: 197203).**

18. Nautiyal, C.S., Mehta, S., **Singh, H.B.,** Mansighka, S. B., Dawle, S.H., Rajhans, N.E. and Pushpangadan, P. Synergistic fermented plant growth promoting bio-control composition. Indian Patent **2925/DELNP/2004A** (Published on 2007-04-13).

(c) Technologies developed:

1. Developed *Trichoderma viride* (2% W.P.) based biopesticide technology with one year shelf life, toxicological data on primary culture and formulated product, field bioafficacy etc. needed for CIB registration under section 9(3B) and 9 (3) for commercial production.

Date :

Signature

Place :