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Academic Record

2006-2009 **PhD in Microbial ecology: (University of Burgundy, Dijon France)**

Title Temporal dynamics of components of the microflora, including *Trichoderma* sp. in relation to patch development of the disease incited by *R. solani* AG2.2 in a sugar-beet field

Laboratory Centre de Microbiologie du Sol et de l'Environnement (CMSE), Unité Mixte de Recherche (UMR) INRA/Université de Bourgogne, Dijon France

Grade "Très honorable" (highly honorable)

2005-2006 **M-Phil: (University of Burgundy, Dijon France)**

Subject Gene, selection and adaptation

Laboratory Laboratoire UMR INRA- Microbiologie et Géochimie des Sols (MGS), Dijon

Grade "Assez bien" (Fairly good)

1997-2001 **Bachelor of Science (Hons) in Agriculture**

Subjects Agronomy; Soil Science; Plant Pathology; Genetics; Plant Breeding

University Arid Agriculture University Rawalpindi, Pakistan

Grade A (85%)- **Gold Medal**

2001-2003 **Master of Information Technology**

Subjects Information Technology

University Arid Agriculture University Rawalpindi, Pakistan

Grade A (82%)- **Third position**

Publications

1. **Anees, M.**, Tronsmo, A., Edel-Hermann, V., Gautheron, N., Faloya, V., and Steinberg, C. 2010. Biotic changes in relation to local decrease in soil conductivity to disease caused by *Rhizoctonia solani*. *European Journal of Plant Pathology*. 126: 29-41.
2. **Anees, M.**, Tronsmo, A., Edel-Hermann, V., Hjeljord, L.G., Héraud, C., and Steinberg, C. 2010. Characterization of field isolates of *Trichoderma* antagonistic against *Rhizoctonia solani*. *Fungal Biology*. 114: 691-701.
3. **Anees, M.**, Edel-Hermann, V., and Steinberg, C. 2010. Build up of disease patches caused by *Rhizoctonia solani*. *Soil Biology & Biochemistry*. 42: 1661-1672.
4. Bano, K., Khan, J., Rifat, Begum, H., Munir, S., ul Akbar, N., Ansari, J.A., and **Anees, M.** 2012. Patterns of antibiotic sensitivity of bacterial pathogens among urinary tract infections (UTI) patients in a Pakistani population. *African Journal of Microbiology Research*. 6(2) : 414-420.
5. Munir, S., Hussain, M., Farooq, U., ZabidUllah, Jamal, Q., Afreen, M., Bano, K., Khan, J., Ayaz, S., Kim, K.Y., and **Anees, M.** 2012. Quantification of antibodies against poultry haemagglutinating viruses by haemagglutination inhibition test in Lahore. *African Journal of Microbiology Research*. 6(21): 4614-4619.
6. Jamil, M., **Anees, M.**, Ur-Rehman, S., and Rha, E.S. 2012. Effect of soil salinity on the growth, amino acids and ion contents of rice transgenic lines. *African Journal of Biotechnology*. 11(86). 15231-15235.
7. Khan, A., Khan, A.M., Ayaz, S., Khan, S., **Anees, M.**, and Khan, S.A. 2012. Molecular detection of *Fasciola hepatica* in water sources of District Nowshera Khyber Pakhtunkhwa Pakistan. *International Journal of Advancements in Research & Technology*. 1 (7): 106-117.
8. Khan, S.A., Ayaz, S., Khan, S., **Anees, M.**, Khan, A.M., and Khan, A. 2012. Prevalence of *Giardia lamblia* in different water sources of District Nowshera, Khyber Pakhtunkhwa Pakistan. *International Journal of Advancements in Research & Technology*. 1 (7): 125-132.
9. Lee, Y.S., **Anees, M.**, Hyun, H.N., Kim, K.Y. 2013. Biocontrol potential of *Lysobacter antibioticus* HS124 against root-knot nematode (*Meloidogyne incognita*) causing disease in tomato. *Nematology*. 15 (5), 545-555.
10. Naing, K.W., **Anees, M.**, Sang, J.K., Nam, Y., Kim, Y.C., Kim, K.Y. 2013. Isolation and characterization of antifungal activity of *Paenibacillus ehimensis* KWN38 against soilborne phytopathogenic fungi belonging to variable taxonomic classes. *Annals of Microbiology*. DOI 10.1007/s13213-013-0632-y
11. Hussain, T., Roohi, A., Hussain, M., Ahmed, I., Hermann, V.E., Kim, K.Y., **Anees, M.** 2013. Biochemical characterization and identification of bacterial strains isolated from drinking water sources of Kohat, Pakistan. *African Journal of Microbiology Research*. 7(16): 1579-1590

12. Jamil, M., Zeb, S., **Anees, M.**, Roohi, A., Ahmed, I., ur Rehman, S. and Rha, E.S. (2013) Role of *Bacillus Licheniformis* in phytoremediation of nickel contaminated soil cultivated with rice. *International Journal of Phytoremediation*. 16 (6): 554-571.
13. Nguyen, X.H., Naing, K.W., Lee, Y.S., Jung, W.J., **Anees, M.**, and Kil Yong Kim. 2013. Antagonistic potential of *Paenibacillus elgii* HOA73 against root-knot nematode (*Meloidogyne incognita*). *Nematology*. 15 (8): 991-1000.
14. Hong, S.H., **Anees, M.**, and Kim, K.Y. 2012. Integrated use of *Paenibacillus ehimensis* RS820 and the artificially prepared mixed compost against the root-knot nematodes causing disease in tomato. *Biocontrol Science and Technology*. 23(9) : 1024-1039.
15. Lee, Y.S., **Anees, M.**, Park, Y.S., Kim, S.B., Jung, W.J., and Kim, K.Y. 2013. Purification and properties of a *Meloidogyne*-antagonistic chitinase from *Lysobacter capsici* YS1215. *Nematology*. 10.1163/15685411-00002745
16. Khan, A., Munir, S., Jamal, Q., **Anees, M.**, Shah, S.A., Sherwani, S.K., Basit, A., Ali, G., Asadullah, and Hussain, M. 2013. Biomass production of *Pasteurella multocida* using biofermenter. *International Journal of Advanced Research*. 1 (5): 142-151
17. Hayat, M., Ahmad, I., Afaq, U., Jan, S., **Anees, M.**, Hussain, T., Munir, M., Sherwani, S.K., Ayaz, S., and Hussain, M. 2013. Prevalence and molecular diagnosis of cutaneous leishmaniasis in local population of dir district, khyber pakhtunkhwa, pakistan. *International Journal of Pharmaceutical Sciences Review and Research*. 21 (2): 359-364.
18. Lee, Y.S., Park, Y.S., **Anees, M.**, and Kim, K.Y. 2013. Nematicidal activity of *Lysobacter capsici* YS1215 and the role of gelatinolytic proteins against root-knot nematodes. *Biocontrol, Science and Technology*. 23(12): 1427-1441
19. Naing, K.W., **Anees, M.**, Kim, S.J., Kim, M.H., and Kim, K.Y. 2013. Biocontrol of late blight disease (*Phytophthora capsici*) of pepper and the plant growth promotion by *Paenibacillus ehimensis* KWN38. *Journal of Phytopathology*. DOI: 10.1111/jph.12198
20. Ur Rehman, F., Munir, S., Sherwani, S.K., Omme-e-Hany, Jamal, Q., Rehmanullah, Khan, A., and **Anees, M.** 2013. Isolation and identification of *Salmonella* sp. And *E.coli* from broilers from the open market shops in Peshawar, Pakistan. *Pakistan Journal of Health Research*. 1(3): 01-03.

Manuscripts in communication

1. Ahmed, Z., ur Rehman, A., and Anees, M. Microcosmic study of Nickel stress towards soil bacteria and their biochemical characterization. Submitted in Journal of Biomolecular Sciences.
2. Jamal, Q., Khan, K., Munir, S., Hussain, S., Durani, P., Munir, K., and Anees, M. Heavy metals accumulation and toxic effects: Review. Submitted in Journal of Biomolecular Sciences.
3. Munir, S., Zabdullah, Jamal, Q., Afreen, M., Nisa, I., and Anees, M. Chitinolytic activity of indigenous *Trichoderma* spp. against different fungal phytopathogens. Submitted in Annals of Microbiology

4. Hussain, A., Awan, M.S., Morari, F., Anees, M., and Iqbal, S.M. Pathogenic diversity of potato sclerotial isolates of *Rhizoctonia solani* and integrated management of black scurf in Gilgit-Baltistan Pakistan. Submitted in Journal of Plant Diseases and Plant Protection.
5. Naing, K., Anees, M., and Kim, K.Y. Biocontrol of Fusarium wilt disease in tomato by *Paenibacillus ehimensis* KWN38. Submitted in Journal of Phytopathology.
6. Munir, S., Bano, K., Sherwani, S.K., Abdrabo, N., Jamal, Q., Khan, R.A., Anees, M. Biocontrol ability of *Trichoderma*. Submitted in International Journal of Agricultural and Crop Sciences.

Conference Proceedings and Bulletins

1. Anees M, Tronsmo A, Edel-Hermann V, Gautheron N, Faloya V, and Steinberg C. 2009. Mechanisms involved in spatial and temporal mobility of disease patches caused by *Rhizoctonia solani* in sugar beet field: Induction of antagonists within disease patch, in: Steinberg C, Edel-Hermann V, Friberg H, Alabouvette C, Tronsmo A (Eds), *Multitrophic Interactions in Soil, Bulletin IOBC/WPRS*, Dijon, pp. 1-5.
2. Anees, M., Tronsmo, M., Edel-Hermann, V., Hjeljord, L.G., Héraud, C., Steinberg, C. 2011. Functional characterization of *Trichoderma* isolates antagonistic against *Rhizoctonia solani*. in: Steinberg C, Edel-Hermann V, Friberg H, Alabouvette C, Tronsmo A (Eds), *Multitrophic Interactions in Soil, Bulletin IOBC/WPRS*, Uppsala, Vol. 63, pp. 1-5.
3. Yong Seong Lee, MuhammadAnees, Yun SerkPark, Sun Bae Kim, Woo Jin Jung, Kil Yong Kim (2013). Role of purified chitinase produced by *Lysobacter capsici* YS1215 in biocontrol of root-knot nematodes. Korean Society of Soil Sciences and Fertilizer. 5: 168-169.
4. Yun Serk Park, Yong Seong Lee, Muhammad Anees, Sun Bae Kim, Kil Yong Kim (2013). Characterization and role of gelatinolytic proteins secreted by *Lysobacter capsici* YS1215 in biocontrol of root-knot nematodes. Korean Society of Soil Sciences and Fertilizer, 5: 170-171.
5. Kyaw Wai Naing, MuhammadAnees, Xuan Hoa Nguyen, Sang Jun Kim, Myung Hee Kim, Kil Yong Kim (2013). Biocontrol of late blight disease (*Phytophthora capsici*) of pepper and the plant growth promotion by *Paenibacillus ehimensis* KWN38. Korean Society of Soil Sciences and Fertilizer, 5: 164-165.
6. Xuan Hoa Nguyen, Kyaw Wai Naing, Young Seong Lee, Woo Jin Jung, Muhammad Anees, Kil Yong Kim (2013). Antagonistic potential of *Paenibacillus elgii* HOA73 against root-knot nematode (*Meloidogyne incognita*). Korean Society of Soil Sciences and Fertilizer, 5: 162-163.
7. Xuan Hoa Nguyen, Kyaw Wai Naing, MuhammadAnees, Young Seong Lee, Woo Jin Jung, Jae Hak Moon, Kil Yong Kim (2013). Antagonistic Effects of *Streptomyces griseus* H7602 on *Phytophthora capsici*. Korean Society Of Soil Sciences And Fertilizer. 5: 160-161.
8. Muhammad Anees, Kil-Yong Kim (2013). Biocontrol of *Colletotrichum* spp. causing anthracnose disease in plants by chitinolytic bacteria. Korean Society Of Soil Sciences And Fertilizer. 5: 158-159.

Oral / poster conference presentations

1. Anees, M., Tronsmo, A., Edel-Hermann, V., Gautheron, N. and Steinberg, C. Mechanisms involved in mobility of disease patches caused by *Rhizoctonia solani* in sugar beet field (Oral communication) In IOBC “Multitrophic Interactions in Soil”, Dijon, France: 24–27 Jun, 2007.

2. Anees, M., Tronsmo, A., Edel-Hermann, V., Gautheron, N. and Steinberg, C. Mechanisms involved in spatial and temporal mobility of disease patches caused by *Rhizoctonia solani* in sugar beet field (Oral communication) In Journée Jean Chevaugéon, Aussois, Savoie, France: 20-24 Jan, 2008.
3. Anees, M., Edel-Hermann, V., Tronsmo, A., Gautheron, N. and Steinberg, C. Can *Rhizoctonia solani* disease be naturally controlled in a sugar beet field? (Oral communication) In 4th International Symposium on Rhizoctonia, Berlin, Germany: 20-22 Aug, 2008.
4. Anees, M., Tronsmo, A., Edel-Hermann, V., Hjeljord, L.G., and Steinberg, C. Characterization of field isolates of *Trichoderma* antagonistic against *Rhizoctonia solani* (Poster) In Phytopathologie 2009 - 7ème Colloque National de la Société Française de Phytopathologie Lyon, France: 8-11 Jun, 2009.
5. Anees, M., Tronsmo, A., Edel-Hermann, V., Hjeljord, L.G., and Steinberg, C. Characterization of field isolates of *Trichoderma* antagonistic against *Rhizoctonia solani* (Poster) In IOBC "Multitrophic Interactions in Soil", Uppsala, Sweden: 10-13 Jun, 2009.
6. Steinberg, C., Alabouvette, C., Edel-Hermann, V., Gautheron, N., Janvier, C., Anees, M., Friberg, H. 2008. "Multitrophic interactions in the soil"; (keynote lecture, abstract, slides); Novel technologies for management of beneficial and harmful microbes in the root system. - The Fourth Baltic Sea Region Symposium; Tune, Denmark; 30 nov-3 Dec 2008.
7. Anees, M., Tronsmo, A., Edel-Hermann, V., Hjeljord, L.G., Steinberg, C. 2011. Field isolates of *Trichoderma* spp. isolated from soil antagonistic towards *Rhizoctonia solani* (Oral communication). 3rd Bio-Asia Regional Conference, April 6-8 2011. Korea Research Institute of Bioscience and Biotechnology (KRIBB), Ochang Campus, South Korea.
8. Munir, S., Zabidullah, Afreen, Z., Banoori, N., Nisa, I., Jamal, Q., Khan, R.A., Anees, M. 2012. Chitinolytic activity of indigenous *Trichoderma* spp. against different fungal phytopathogens (Oral communication). 12th National and 3rd International Conference of Botany, Quaid-e-Azam University, Islamabad, Pakistan; 3 to 5 Sep 2012.

NCBI accessions

1. Anees, M. and Kim, K.Y. 2012. Isolation of chitinolytic bacteria from soil. *Paenibacillus ehimensis* strain MA2012 16S ribosomal RNA gene, partial sequence. NCBI Accession Number: JX997950
2. Jamal, Q., Ahmed, I. and Anees, M. 2012. Isolation and characterization of Bacteria from the coal mines of Dara Adam khel Khyber Pakhtoonkhwa. *Bacillus* sp. NCCP-772 gene for 16S ribosomal RNA, partial sequence. NCBI Accession Number: AB753822
3. Nisa, I., Ahmed, I. and Anees, M. 2012. Effect of chromogenic bacteria on plant growth. *Bacillus* sp. NCCP-552 gene for 16S rRNA, partial sequence. NCBI Accession: AB719402
4. Jamal, Q., Ahmed, I. and Anees, M. 2012. Isolation and characterization of Bacteria from the coal mines of Dara Adam khel Khyber Pakhtoonkhwa. *Arthrobacter* sp. NCCP-773 gene for 16S ribosomal RNA, partial sequence. NCBI Accession Number: AB753823.
5. Jamal, Q., Ahmed, I. and Anees, M. 2012. Isolation and characterization of Bacteria from the coal mines of Dara Adam khel Khyber Pakhtoonkhwa. *Kocuria* sp. NCCP-771 gene for 16S ribosomal RNA, partial sequence. NCBI Accession Number: AB753821.
6. Jamal, Q., Ahmed, I. and Anees, M. 2012. Isolation and characterization of Bacteria from the coal mines of Dara Adam khel Khyber Pakhtoonkhwa. *Bacillus* sp. NCCP-767 gene for 16S ribosomal RNA, partial sequence. NCBI Accession Number: AB753820.
7. Jamal, Q., Ahmed, I. and Anees, M. 2012. Isolation and characterization of Bacteria from the coal mines of Dara Adam khel Khyber Pakhtoonkhwa. *Kocuria* sp. NCCP-766 gene for 16S ribosomal RNA, partial sequence. NCBI Accession Number: AB753819.

8. Jamal,Q., Ahmed,I. and Anees,M. 2012. Isolation and characterization of Bacteria from the coal mines of Dara Adam khel Khyber Pakhtoonkhwa. *Janibacter* sp. NCCP-765 gene for 16S ribosomal RNA, partial sequence. NCBI Accession Number: AB753818
9. Jamal,Q., Ahmed,I. and Anees,M. 2012. Isolation and characterization of Bacteria from the coal mines of Dara Adam khel Khyber Pakhtoonkhwa. *Bacillus* sp. NCCP-763 gene for 16S ribosomal RNA, partial sequence. NCBI Accession Number: AB753795
10. Jamal,Q., Ahmed,I. and Anees,M. 2012. Isolation and characterization of Bacteria from the coal mines of Dara Adam khel Khyber Pakhtoonkhwa. *Bacillus* sp. NCCP-762 gene for 16S ribosomal RNA, partial sequence. NCBI Accession Number: AB753794
11. Jamal,Q., Ahmed,I. and Anees,M. 2012. Isolation and characterization of Bacteria from the coal mines of Dara Adam khel Khyber Pakhtoonkhwa. *Brachybacterium* sp. NCCP-761 gene for 16S ribosomal RNA, partial sequence. Accession Number: AB753793.
12. Nisa,I., Ahmed,I. and Anees,M. 2012. Effect of chromogenic bacteria on plant growth. *Acinetobacter* sp. NCCP-551 gene for 16S rRNA, partial sequence. NCBI Accession Number: AB719401
13. Nisa,I., Ahmed,I. and Anees,M. 2012. Effect of chromogenic bacteria on plant growth. *Acinetobacter* sp. NCCP-550 gene for 16S rRNA, partial sequence. NCBI Accession Number: AB719400
14. Nisa,I., Ahmed,I. and Anees,M. 2012. Effect of chromogenic bacteria on plant growth. *Chryseobacterium* sp. NCCP-549 gene for 16S rRNA, partial sequence. NCBI Accession Number: AB719399
15. Anees,M., Tronsmo,A., Edel-Hermann,V., Hjeljord,L.G., Heraud,C. and Steinberg,C. 2010. Characterization of field isolates of *Trichoderma* antagonistic against *Rhizoctonia solani*. *Trichoderma gamsii* isolate MIAE00029 18S ribosomal RNA gene, partial sequence; internal transcribed spacer 1, 5.8S ribosomal RNA gene, and internal transcribed spacer 2, complete sequence; and 28S ribosomal RNA gene, partial sequence. NCBI Accession Number: HM176559.
16. Anees,M., Tronsmo,A., Edel-Hermann,V., Hjeljord,L.G., Heraud,C. and Steinberg,C. 2010. Characterization of field isolates of *Trichoderma* antagonistic against *Rhizoctonia solani*. *Trichoderma gamsii* isolate MIAE00029 18S ribosomal RNA gene, partial sequence; internal transcribed spacer 1, 5.8S ribosomal RNA gene, and internal transcribed spacer 2, complete sequence; and 28S ribosomal RNA gene, partial sequence. NCBI Accession Number: HM176559.
17. Anees,M., Tronsmo,A., Edel-Hermann,V., Hjeljord,L.G., Heraud,C. and Steinberg,C. 2010. Characterization of field isolates of *Trichoderma* antagonistic against *Rhizoctonia solani*. *Trichoderma gamsii* isolate MIAE00030 18S ribosomal RNA gene, partial sequence; internal transcribed spacer 1, 5.8S ribosomal RNA gene, and internal transcribed spacer 2, complete sequence; and 28S ribosomal RNA gene, partial sequence. NCBI Accession Number: HM176560.
18. Anees,M., Tronsmo,A., Edel-Hermann,V., Hjeljord,L.G., Heraud,C. and Steinberg,C. 2010. Characterization of field isolates of *Trichoderma* antagonistic against *Rhizoctonia solani*. *Trichoderma gamsii* isolate MIAE00034 18S ribosomal RNA gene, partial sequence; internal transcribed spacer 1, 5.8S ribosomal RNA gene, and internal transcribed spacer 2, complete sequence; and 28S ribosomal RNA gene, partial sequence. NCBI Accession Number: HM176564.
19. Anees,M., Tronsmo,A., Edel-Hermann,V., Hjeljord,L.G., Heraud,C. and Steinberg,C. 2010. Characterization of field isolates of *Trichoderma* antagonistic against *Rhizoctonia solani*. *Trichoderma gamsii* isolate MIAE00037 18S ribosomal RNA gene, partial sequence; internal transcribed spacer 1, 5.8S ribosomal RNA gene, and internal

- transcribed spacer 2, complete sequence; and 28S ribosomal RNA gene, partial sequence. NCBI Accession Number: HM176567.
20. Anees,M., Tronsmo,A., Edel-Hermann,V., Hjeljord,L.G., Heraud,C. and Steinberg,C. 2010. Characterization of field isolates of *Trichoderma* antagonistic against *Rhizoctonia solani*. *Trichoderma gamsii* isolate MIAE00040 18S ribosomal RNA gene, partial sequence; internal transcribed spacer 1, 5.8S ribosomal RNA gene, and internal transcribed spacer 2, complete sequence; and 28S ribosomal RNA gene, partial sequence. NCBI Accession Number: HM176570.
 21. Anees,M., Tronsmo,A., Edel-Hermann,V., Hjeljord,L.G., Heraud,C. and Steinberg,C. 2010. Characterization of field isolates of *Trichoderma* antagonistic against *Rhizoctonia solani*. *Trichoderma tomentosum* isolate MIAE00031 18S ribosomal RNA gene, partial sequence; internal transcribed spacer 1, 5.8S ribosomal RNA gene, and internal transcribed spacer 2, complete sequence; and 28S ribosomal RNA gene, partial sequence. NCBI Accession Number: HM176561.
 22. Anees,M., Tronsmo,A., Edel-Hermann,V., Hjeljord,L.G., Heraud,C. and Steinberg,C. 2010. Characterization of field isolates of *Trichoderma* antagonistic against *Rhizoctonia solani*. *Trichoderma tomentosum* isolate MIAE00032 18S ribosomal RNA gene, partial sequence; internal transcribed spacer 1, 5.8S ribosomal RNA gene, and internal transcribed spacer 2, complete sequence; and 28S ribosomal RNA gene, partial sequence. NCBI Accession Number: HM176562.
 23. Anees,M., Tronsmo,A., Edel-Hermann,V., Hjeljord,L.G., Heraud,C. and Steinberg,C. 2010. Characterization of field isolates of *Trichoderma* antagonistic against *Rhizoctonia solani*. *Trichoderma velutinum* isolate MIAE00033 18S ribosomal RNA gene, partial sequence; internal transcribed spacer 1, 5.8S ribosomal RNA gene, and internal transcribed spacer 2, complete sequence; and 28S ribosomal RNA gene, partial sequence. NCBI Accession Number: HM176563.
 24. Anees,M., Tronsmo,A., Edel-Hermann,V., Hjeljord,L.G., Heraud,C. and Steinberg,C. 2010. Characterization of field isolates of *Trichoderma* antagonistic against *Rhizoctonia solani*. *Trichoderma velutinum* isolate MIAE00035 18S ribosomal RNA gene, partial sequence; internal transcribed spacer 1, 5.8S ribosomal RNA gene, and internal transcribed spacer 2, complete sequence; and 28S ribosomal RNA gene, partial sequence. NCBI Accession Number: HM176565.
 25. Anees,M., Tronsmo,A., Edel-Hermann,V., Hjeljord,L.G., Heraud,C. and Steinberg,C. 2010. Characterization of field isolates of *Trichoderma* antagonistic against *Rhizoctonia solani*. *Trichoderma velutinum* isolate MIAE00036 18S ribosomal RNA gene, partial sequence; internal transcribed spacer 1, 5.8S ribosomal RNA gene, and internal transcribed spacer 2, complete sequence; and 28S ribosomal RNA gene, partial sequence. NCBI Accession Number: HM176566.
 26. Anees,M., Tronsmo,A., Edel-Hermann,V., Hjeljord,L.G., Heraud,C. and Steinberg,C. 2010. Characterization of field isolates of *Trichoderma* antagonistic against *Rhizoctonia solani*. *Trichoderma velutinum* isolate MIAE00038 18S ribosomal RNA gene, partial sequence; internal transcribed spacer 1, 5.8S ribosomal RNA gene, and internal transcribed spacer 2, complete sequence; and 28S ribosomal RNA gene, partial sequence. NCBI Accession Number: HM176568.
 27. Anees,M., Tronsmo,A., Edel-Hermann,V., Hjeljord,L.G., Heraud,C. and Steinberg,C. 2010. Characterization of field isolates of *Trichoderma* antagonistic against *Rhizoctonia solani*. *Trichoderma velutinum* isolate MIAE00039 18S ribosomal RNA gene, partial sequence; internal transcribed spacer 1, 5.8S ribosomal RNA gene, and internal transcribed spacer 2, complete sequence; and 28S ribosomal RNA gene, partial sequence. NCBI Accession Number: HM176569.

28. Anees,M., Tronsmo,A., Edel-Hermann,V., Hjeljord,L.G., Heraud,C. and Steinberg,C. 2010. Characterization of field isolates of *Trichoderma* antagonistic against *Rhizoctonia solani*. *Trichoderma velutinum* isolate MIAE00041 18S ribosomal RNA gene, partial sequence; internal transcribed spacer 1, 5.8S ribosomal RNA gene, and internal transcribed spacer 2, complete sequence; and 28S ribosomal RNA gene, partial sequence. NCBI Accession Number: HM176571.
29. Anees,M., Tronsmo,A., Edel-Hermann,V., Hjeljord,L.G., Heraud,C. and Steinberg,C. 2010. Characterization of field isolates of *Trichoderma* antagonistic against *Rhizoctonia solani*. *Trichoderma velutinum* isolate MIAE00043 18S ribosomal RNA gene, partial sequence; internal transcribed spacer 1, 5.8S ribosomal RNA gene, and internal transcribed spacer 2, complete sequence; and 28S ribosomal RNA gene, partial sequence. NCBI Accession Number: HM176573.
30. Anees,M., Tronsmo,A., Edel-Hermann,V., Hjeljord,L.G., Heraud,C. and Steinberg,C. 2010. Characterization of field isolates of *Trichoderma* antagonistic against *Rhizoctonia solani*. *Trichoderma velutinum* isolate MIAE00044 18S ribosomal RNA gene, partial sequence; internal transcribed spacer 1, 5.8S ribosomal RNA gene, and internal transcribed spacer 2, complete sequence; and 28S ribosomal RNA gene, partial sequence. NCBI Accession Number: HM176574.
31. Anees,M., Tronsmo,A., Edel-Hermann,V., Hjeljord,L.G., Heraud,C. and Steinberg,C. 2010. Characterization of field isolates of *Trichoderma* antagonistic against *Rhizoctonia solani*. *Trichoderma harzianum* isolate MIAE00042 18S ribosomal RNA gene, partial sequence; internal transcribed spacer 1, 5.8S ribosomal RNA gene, and internal transcribed spacer 2, complete sequence; and 28S ribosomal RNA gene, partial sequence. NCBI Accession Number: HM176572.
32. Anees,M., Tronsmo,A., Edel-Hermann,V., Hjeljord,L.G., Heraud,C. and Steinberg,C. 2010. Characterization of field isolates of *Trichoderma* antagonistic against *Rhizoctonia solani*. *Trichoderma hamatum* isolate MIAE00454 18S ribosomal RNA gene, partial sequence; internal transcribed spacer 1, 5.8S ribosomal RNA gene, and internal transcribed spacer 2, complete sequence; and 28S ribosomal RNA gene, partial sequence. NCBI Accession Number: HM176576.
33. Anees,M., Tronsmo,A., Edel-Hermann,V., Hjeljord,L.G., Heraud,C. and Steinberg,C. 2010. Characterization of field isolates of *Trichoderma* antagonistic against *Rhizoctonia solani*. *Trichoderma atroviride* isolate MIAE00220 18S ribosomal RNA gene, partial sequence; internal transcribed spacer 1, 5.8S ribosomal RNA gene, and internal transcribed spacer 2, complete sequence; and 28S ribosomal RNA gene, partial sequence. NCBI Accession Number: HM176575.
34. Anees,M., Tronsmo,A., Edel-Hermann,V., Hjeljord,L.G., Heraud,C. and Steinberg,C. 2010. Characterization of field isolates of *Trichoderma* antagonistic against *Rhizoctonia solani*. *Trichoderma velutinum* isolate MIAE00044 translation elongation factor 1 alpha (tef1 alpha) gene, partial sequence. NCBI Accession Number HM176592
35. Anees,M., Tronsmo,A., Edel-Hermann,V., Hjeljord,L.G., Heraud,C. and Steinberg,C. 2010. Characterization of field isolates of *Trichoderma* antagonistic against *Rhizoctonia solani*. *Trichoderma velutinum* isolate MIAE00043 translation elongation factor 1 alpha (tef1 alpha) gene, partial sequence. NCBI Accession Number HM176591
36. Anees,M., Tronsmo,A., Edel-Hermann,V., Hjeljord,L.G., Heraud,C. and Steinberg,C. 2010. Characterization of field isolates of *Trichoderma* antagonistic against *Rhizoctonia solani*. *Trichoderma velutinum* isolate MIAE00041 translation elongation factor 1 alpha (tef1 alpha) gene, partial sequence. NCBI Accession Number HM176589
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Professional experience

Mar 2010–Present.	Assistant Professor , Department of Microbiology, Kohat University of Science and Technology, Kohat Pakistan
Jun 2012–Jun 2013	Post doctoral fellow Chonnam National University, Gwangju in Division of Applied Bioscience and Biotechnology, Institute of Environmentally-Friendly Agriculture, Chonnam National University, Gwangju, 500-757, Korea.
Dec 2009–Mar 2010	Assistant Professor , National Institute of Biotechnology and Genetic Engineering Faisalabad, Pakistan
Feb 2004–Jun 2005.	Agriculture Extension Officer , Sehla Rawalpindi, Department of Agriculture, Govt. of Pakistan

Administrative Experience

- Chairman Department of Microbiology, Kohat University of Science and Technology, Kohat Pakistan
- Member Board of Faculty of Biological Sciences, Kohat University of Science and Technology, Kohat Pakistan
- Member Academic Council, Kohat University of Science and Technology, Kohat Pakistan
- Convener Board of Studies, Department of Microbiology, Kohat University of Science and Technology, Kohat.
- Convener Graduate/Research Committee, Department of Microbiology, Kohat University of Science and Technology, Kohat.

Teaching and Research Supervision

Courses taught to BS/M-Phil/ PhD classes

- Soil Microbiology
- Marine and Freshwater Microbiology
- Microbial Ecology
- Mycology
- Microbial techniques in Agriculture
- Enzyme Technology
- Research Methodology
- Agricultural Microbiology

Research Students Detail

<i>No. of PhD students supervised and awarded degrees</i>	1
<i>No. of M-Phil supervised and awarded degrees</i>	12

No. of BS students supervised and awarded degrees	7
No. Of M-Phil students under supervision	4
No. Of BS students under supervision	3

Research Projects Completed as Principal Investigator

- “**Biocontrol Potential of *Trichoderma* spp. towards the potato disease and their genetic diversity in Pakistan**” funded by Higher Education Commission Pakistan (2010-2012)
- “**Antibiosis and chitinolysis by indigenous *Trichoderma* spp. against different plant pathogens**” funded by Directorate of Science and Technology, Govt. of Khyber Pakhunkhwa, Pakistan (2011-2013)

Foreign Languages

- English (Academic language)
- French

References

May be provided in case of demand.