

## **CURRICULUM VITAE**

### **PERSONAL DETAILS**

Name: **Faheem Aftab**

Born: December 29, 1966

Academic Qualification: M.Sc (1990), Ph.D (1997)

Post Doc  
Southern Illinois University, USA. 2004-05  
Leibniz Universitaet Hannover, Germany. 2010-2012

Present Employment Status with  
Punjab University: Professor,  
Department of Botany,  
University of the Punjab,  
Q.A. Campus, Lahore 54590,  
Pakistan.

Phone Number: Off: 042-35857587 (Direct line)/  
042-99231152 (Ext 830)  
Cell: 0332-4652489

E-mail: faheem.botany@ pu.edu.pk

## EMPLOYMENT RECORD AT A GLANCE

Designation/ Title	Date/Experience		Name of Organization/ Department/ Institution	Brief job description
	From	To		
Research Fellow, NSRDB Project #UN- LHR-BI-1	01.09.90	30.06.92	Department of Botany, University of the Punjab, Q.A. Campus, Lahore, Pakistan	A research job
Lecturer in Botany	04.10.94	30.05.99	Govt. of the Punjab, Higher Education Department	Teaching/ research at postgraduate level
Assistant Professor of Botany	31.05. 1999	03.02.2000	Govt. of the Punjab, Higher Education Department	Teaching/ administration
Assistant Professor of Botany	04.02. 2000	23.01.2003	Department of Botany, University of the Punjab, Lahore.	Teaching/ research.
Director, PUSC (Additional charge)	10.11. 2006	24.06.2007	Punjab University Seed Centre, University of the Punjab, Lahore.	Administrative
Associate Professor of Botany	24.01. 2003	12.10. 2011	Department of Botany, University of the Punjab, Lahore.	Teaching/ research.
<b>Present Status:</b> Professor	13.10. 2011		Department of Botany, University of the Punjab, Lahore.	Teaching/ research.
Director (Additional charge)	21.02.2017		Centre for Undergraduate Studies, PU	Administrative

## PUBLICATIONS

### Published papers

1. Iqbal, J., Naz, S., Nazir, S., **Aftab, F.** and Ahmad, M.S. 1991. Total phenolics, Phenylalanine Ammonia Lyase and Polyphenol Oxidase in *in vitro* calli of chickpea. Pak. J. Bot., 23: 227-235.
2. **Aftab, F.**, Zafar, Y. and Iqbal, J. 1995. Development of protoplast technology in sugarcane. Proceedings of International Symposium on Biotechnology for Sustainable Development. Dec.15-20, 1993. Eds. Kauser A. Malik, Anwar Nasim & Ahmad M. Khalid. National Institute for Biotechnology and Genetic Engineering (NIBGE), 1995, Faisalabad, Pakistan.
3. **Aftab, F.**, Zafar, Y., Malik, K.A. and Iqbal, J. 1996. Plant regeneration from embryogenic cell suspensions and protoplasts in sugarcane (*Saccharum* spp. *hybrid* cv. CoL-54). Plant Cell, Tissue and Organ Culture, 44: 71-78.
4. **Aftab, F.** and Iqbal, J. 1999. Plant regeneration from protoplasts derived from cell suspension of adventive somatic embryos in sugarcane (*Saccharum* spp. *hybrid* cv. CoL-54 and cv. CP-43/33). Plant Cell, Tissue and Organ Culture, 56: 155-162.
5. **Aftab, F.** and Iqbal, J. 1999. Somatic embryogenesis in protoplast cultures derived from mesophyll and embryogenic callus of sugarcane (*Saccharum* spp. *hybrid* cv. CoL-54). Pak. J. Bot., 31(2): 293-300.
6. **Aftab, F.** and Iqbal, J. 2001. PEG-mediated somatic hybridization studies in sugarcane (*Saccharum* spp. *hybrid* cvs. CoL-54 and CP-43/33). Pak. J. Bot., 33(3): 233-238.
7. **Aftab, F.**, Zafar, Y., and Iqbal, J. 2002. Optimization of conditions for electrofusion in sugarcane protoplasts. Pak. J. Bot., 34(3): 297-301.
8. **Aftab, F.**, Aftab, Z-H and Iqbal J. 2004. Protein changes associated with dedifferentiation and differentiation in *in vitro* callus cultures of sugarcane (*Saccharum* spp. *Hybrid* cv. CP-43/33). Pak. J. Biochem. Mol. Biol., 37(2): 67-73.
9. **Aftab, F.**, Butt, M. K., Munir, N and Iqbal, J. 2004. Quantitative/Qualitative study of azadirachtin and neem oil extracted from various explants and callus cultures of *Azadirachta indica*. Biologia 50(2): 183-194.
10. **Aftab, F.**, Yousaf, S., Munir, N and Iqbal, J. 2005. Maintenance of regeneration potential over successive subcultures in sugarcane (*Saccharum* spp. *hybrid* cv. SPF-213). Biologia 51 (1): 83-91.
11. **Aftab, F.**, Mansouri, K and Preece, J. E. 2005. The influence of environment, media and Zeritol on forcing and *in vitro* establishment of softwood shoots from large stem segments of *Acer saccharinum* L. and *Fraxinus pennsylvanica* Marsh. Propagation of Ornamental Plants, 5(3): 111-116.
12. Akram, M., Afrasiab, H., Mahmood, S., and **Aftab, F.** 2007. Monoterpene contents in *in vitro* cultures and field-grown plants of Japanese mint (*Mentha arvensis* L). Pak. J. Biochem. Mol. Biol., 40 (2): 74-79.
13. Akram, M and **Aftab, F.** 2007. *In vitro* micropropagation and rhizogenesis of teak (*Tectona grandis* L.). Pak. J. Biochem. Mol. Biol., 40 (3): 125-128.
14. **Aftab, F.** and Preece, J. E. 2007. Forcing and *in vitro* establishment of softwood shoots from large stem segments of woody plants. In: Biotechnology and Sustainable Agriculture 2006 and Beyond, Z. Xu et al. (eds.), Springer, 437-444.

15. Tabassum, S., **Aftab, F** and Shoaib, K. 2007. Changes in protein profile under noise stress in Antranum (*Antirrhinum majus* L.), Gram (*Cicer arietinum* L.) and Zinnia (*Zinnia elegans* Jaeg.). Pak. J. Biochem. Mol. Biol., 40 (4): 189-191.
16. **Aftab, F** and Adeeb, T. 2007. *In vitro* micropropagation and callus induction in rose (*Rosa hybrida* cv. Cardinal). Pak. J. Biochem. Mol. Biol., 40 (4): 215-222.
17. Sajid, Z. A. and **Aftab, F**. 2007. Protein and peroxidase contents in *in vitro* cultures of *Solanum tuberosum* L under NaCl stress. Pak. J. Biochem. Mol. Biol., 40 (4): 227-232.
18. Akram, M and **Aftab, F**. 2008. High frequency multiple shoot formation from nodal explants of teak (*Tectona grandis*) induced by thidiazuron. Propagation of Ornamental Plants, 8 (2): 72-75.
19. **Aftab, F.**, Alam, M and Afrasiab, H. 2008. *In vitro* shoot multiplication and callus induction in *Gladiolus hybridus* Hort. Pak. J. Bot., 40(2): 517-522.
20. **Aftab, F.**, Akram, S and Iqbal J. 2008. Estimation of fixed oils from various explants and *in vitro* callus cultures of jojoba (*Simmondsia chinensis*). Pak. J. Bot., 40(4): 1467-1471.
21. Munir, N and **Aftab, F**. 2008. Effect of NaCl stress on soluble protein contents and regeneration potential of sugarcane callus cultures. Proceedings, First Symposium on "Genomics, Proteomics, Metabolomics: Recent trends in Biotechnology". October 22-23, 2007. Department of Microbiology and Molecular Genetics, University of the Punjab, Lahore, 116-126.
22. Sajid, Z. A. and **Aftab, F**. 2008. Changes in regeneration potential, protein and peroxidase contents in callus cultures of *Solanum tuberosum* under NaCl stress. Proceedings, First Symposium on "Genomics, Proteomics, Metabolomics: Recent trends in Biotechnology". October 22-23, 2008. Department of Microbiology and Molecular Genetics, University of the Punjab, Lahore, 141-150.
23. Haroon, A and **Aftab, F**. 2008. Adventitious regeneration of pecan using immature cotyledonary explant. Proceedings, First Symposium on "Genomics, Proteomics, Metabolomics: Recent trends in Biotechnology". October 22-23, 2007. Department of Microbiology and Molecular Genetics, University of the Punjab, Lahore, 352-356.
24. Akram, M and **Aftab, F**. 2008. Role of N<sup>6</sup>-benzylaminopurine in *in vitro* axillary shoot proliferation of teak (*Tectona grandis* L.). Proceedings, First Symposium on "Genomics, Proteomics, Metabolomics: Recent trends in Biotechnology". October 22-23, 2007. Department of Microbiology and Molecular Genetics, University of the Punjab, Lahore, 357-365.
25. Akram, M and **Aftab, F**. 2009. An efficient method for clonal propagation and *in vitro* establishment of softwood shoots from epicormic buds of teak (*Tectona grandis* L.)". Forestry studies in China, 11(2): 105-110.
26. Sajid, Z. A. and **Aftab, F**. 2009. Effect of thidiazuron (TDZ) on *in vitro* micropropagation of *Solanum tuberosum* L. cvs. Desiree and Cardinal. Pak. J. Bot., 41(4): 1811-1815.
27. Mehnaz, S., Weselowski, B., **Aftab, F.**, Zahid, S., Lazarovits, G and Iqbal J. 2009. Isolation, characterization and effect of fluorescent pseudomonads on micro-propagated sugarcane. Canadian Journal of Microbiology 55: 1007-1011.
28. Sajid, Z.A and **Aftab, F**. 2009. Amelioration of salinity tolerance in *Solanum tuberosum* L. by exogenous application of ascorbic acid. *In vitro* Cellular and Developmental Biology-Plant 45 (5): 540-549. DOI: 10.1007/s11627-009-9252-4.
29. Munir, N and **Aftab, F**. 2009. Role of Polyethylene Glycol (PEG) in improving sugarcane's salt (NaCl) tolerance. Turkish Journal of Botany 33: 407-415. DOI: 10.3906/bot-0806-6.
30. Akram, M and **Aftab, F**. 2011. Adventitious shoot regeneration from cotyledons of *Heterophragma adenophyllum* (Wall. Ex. G. Don) Seem. Ex Benth. Seedlings. Propagation of Ornamental Plants 11 (4): 197-203.

31. Munir, N and **Aftab, F.** 2011. Enhancement of salt tolerance in sugarcane by ascorbic acid pretreatment. *African Journal of Biotechnology* 10(80), 18362-18370.
32. Akram, M and **Aftab, F.** 2012. Effect of auxins on axillary and de-novo shoot regeneration from in vitro shoot cultures derived from forced epicormic buds of teak (*Tectona grandis* L.). *Forestry Studies in China* 14(3): 180-186.
33. **Aftab, F.** 2012. Progress and prospects for an efficient micropropagation of woody plants. In: Crop production for agricultural improvement. Ashraf M., Öztürk M., Ahmad MSA., Aksoy, A. (Eds.). Springer. 363-377.
34. Sajid, Z. A and **Aftab, F.** 2012. Role of salicylic acid in amelioration of salt tolerance in *Solanum tuberosum* L. *Pak. J. Bot.*, 44 (special issue): 37-42.
35. Akram, M. and **Aftab, F.** 2012. Efficient micropropagation and rooting of King white mulberry (*Morus macroura* Miq.) Var. *Laevigata* from nodal explants of mature trees. *Pak. J. Bot.*, 44 (special issue): 285-289.
36. Ejaz, B, Sajid, Z. A and **Aftab, F.** 2012. Effect of exogenous application of ascorbic acid on antioxidant enzyme activities, proline contents and growth parameters of *Saccharum* spp. *hybrid* cv. HSF-240 under salt stress. *Turk J Biol.* 36: 630-640.
37. Munir, N and **Aftab, F.** 2012. Improvement of salt tolerance in sugarcane by tissue culture- An approach towards crop improvement. Lambert Academic Publishing, Saarbrücken, Germany.
38. Munir, N and **Aftab, F.** 2013. Changes in activities of antioxidant enzymes in response to NaCl stress in callus cultures and regenerated plants of sugarcane. *J. Anim. Plant Sci.* 23(1): 203-209.
39. Munir, N and **Aftab, F.** 2013. Effect of NaCl stress on callus morphology and growth of sugarcane callus cultures (cv. SPF 234 and cv. HSF 240). *Pakistan Journal of Science* 65(4): 473-477.
40. Ali, J., Chaudhry, NY and **Aftab, F.** 2014. In vitro development and improvement of chromium (VI)-affected adventitious roots of *Solanum tuberosum* L. with GA<sub>3</sub> and IAA application. *Pak. J. Bot.*, 46(2): 687-692.
41. Sajid, Z. A and **Aftab, F.** 2014. Plant regeneration from *in vitro*-selected salt tolerant callus cultures of *Solanum tuberosum* L. *Pak J Bot.*, 46(4): 1507-1514.
42. Akram, M and **Aftab, F.** 2015. High frequency in vitro morphogenesis of groundcherry (*Physalis minima* L.): a threatened medicinal plant by thidiazuron. *International Journal on Agricultural Sciences* 6 (2): 214-222.
43. Sajid, Z. A and **Aftab, F.** 2015. Enhanced salinity tolerance in field-grown potato (*Solanum tuberosum* L.) treated with Ascorbic acid. *International Journal of Advances in Science and Technology* ISSN 2348-5426, 28-39.
44. Akram, M and **Aftab, F.** 2015. Somatic embryogenesis from cotyledons of *Heterophragma adenophyllum* Seem (Wall. P. Dop): an important medicinal and ornamental tree. *International Journal on Agricultural Sciences* 6 (2): 289-296.
45. Akram, M and **Aftab, F.** 2015. Efficient plant regeneration via shoot organogenesis from explants of in vitro seedlings of a recalcitrant woody species of teak (*Tectona grandis* L. f.). *Proc. VIIIth IS on In Vitro Culture and Horticultural Breeding*. Eds.: J. M. Canhoto and S. I. Correia. *Acta Horticulturae* 1083, ISHS 2015: 53-60.

46. Akram, M and **Aftab, F.** 2015. Effect of Cytokinins on *In vitro* seed Germination and Changes in Chlorophyll and Soluble Protein Contents of Teak (*Tectona grandis L.*). *Biochem Physiol* 4: 166. doi: 10.4172/2168-9652.1000166
47. Khalid A and **Aftab F.** 2016. Effect of exogenous application of 24-Epibrassinolide on growth, protein contents and antioxidant enzyme activities of in vitro-grown *Solanum tuberosum L.* under salt stress. *In vitro cellular and Developmental Biology-Plant* 52(1): 81-91. DOI. 10.1007/s11627-015-9745-2.
48. Akram, M and **Aftab, F.** 2016. Fruit size and sampling sites affect dormancy, viability and germination of teak (*Tectona grandis L.*) seeds. *Pakistan Journal of Botany* 48 (2): 511-518.
49. Sajid, Z. A and **Aftab, F.** 2016. An efficient method for the establishment of cell suspension cultures in potato (*Solanum tuberosum L.*). *Pakistan Journal of Botany* 48 (5): 1993-1997.
50. Sajid, Z. A and **Aftab, F.** 2016. Foliar Spray of Ascorbic acid improves salinity tolerance in *Solanum tuberosum L.*, *Acta Hort.* 1145: 69-74.
51. Akram, M. and Aftab, F. 2017. Somatic embryogenesis and plant regeneration from calluses derived from shoot-tips of forced softwood shoots of teak (*Tectona grandis L. f.*). *Horticultural Plant Journal* 2(5): 293-301.
52. Sadiq , M, Shehzad, A, Fayyaz, M, Ali, GM and Aftab, F. 2017. Seedling and durable resistance to stripe rust in two segregating wheat populations. *Int. J. Biosci.* 11(6), 231-237.
53. Rizwan, S and Aftab, F. 2018. Effect of different pretreatments on breaking seed dormancy and *in vitro* germination in *Jatropha curcas L.* *Pak J Bot.* 50(2), Mans. Nr. 13-061. Accepted.
54. Rizwan, S and Aftab, F. 2018. Morphological and biochemical responses of *Jatropha curcas* under water stress. *International Journal of Agriculture and Biology.* Accepted and published online. DOI: 10.17957/IJAB/15.0711

#### **Presented papers/Posters in Conferences/Symposia and published Abstracts**

1. Iqbal, J. and **Aftab, F.** 1990. Polyphenol oxidase content of *in vitro* propagated calli of chickpea (*Cicer arietinum L.*). Abstract. National/International Telecommunication Symposium on Plant Biotechnology. Aug. 16-19, 1990. Organized by National Agricultural Research Center, Park Road, Islamabad. (Abstract).
2. Iqbal, J., **Aftab, F.** and Siddiqui, F.A. 1992. Sugarcane cell culture: Embryogenic colony formation in *Saccharum officinarum L.* All Pakistan Science Conference, held at Khanspur. May 16-21, 1992. Organized by Science International, Lahore, Pakistan. (Abstract).
3. Iqbal, J., **Aftab, F.** and Siddiqui, F.A. 1992. Isolation of protoplasts from leaf, establishment of culture conditions and embryo formation in *Saccharum officinarum L.* Paper presented by F.A. at All Pakistan Science Conference, held at Khanspur, May 16-21, 1992. Organized by Science International, Lahore, Pakistan.
4. **Aftab, F.** and Iqbal, J. 1993. Sugarcane cell cultures: Embryogenic colony formation and regeneration from cells. Poster presented at Fourth National Conference of Plant Sciences, February 16-18, 1993. Ayyub Agricultural Research Institute, Faisalabad, organized by Pakistan Botanical Society.
5. **Aftab, F.** and Iqbal, J. 1993. Establishment of optimum conditions for the isolation of protoplasts from leaf, callus cultures and embryogenic cell suspension cultures in *Saccharum officinarum L. cv. CoL-54.* Paper presented by F.A. at the Third National Meeting of Plant Tissue

Culturists. Organized by Botany Department, University of Peshawar, August 2-5, 1993 at Baragali Summer Campus, Baragali, NWFP.

6. Siddiqui, F.A., **Aftab, F.** and Iqbal, J. 1993. Sugarcane improvement through *in vitro* techniques. Poster presented at International Symposium on Biotechnology for Sustainable Development. Dec. 15-20, 1993, National Institute for Biotechnology and Genetic Engineering (NIBGE), Faisalabad, Pakistan.

7. **Aftab, F.** and Iqbal, J. 1993. Factors affecting protoplast culture and regeneration in sugarcane (*Saccharum officinarum* L. cv. CoL-54). International Symposium on Biotechnology for Sustainable Development, held at National Institute for Biotechnology and Genetic Engineering (NIBGE), Faisalabad, Pakistan, December 15-20, 1993.

8. **Aftab, F.**, and Iqbal, J. 1998. Somatic embryogenesis in protoplast cultures of sugarcane (*Saccharum* spp. *hybrid* cvs. CoL-54) a) from mesophyll-derived protoplasts, b) from embryogenic callus culture-derived protoplasts. Sixth National Conference of Plant Scientists, October 20-22, 1998, University of Peshawar. (Abstract).

9. **Aftab, F.**, Zafar, Y. and Iqbal, J. 2000. Optimization of conditions for electrofusion in sugarcane protoplasts. 7<sup>th</sup> Plant Science Conference, 14<sup>th</sup> – 16<sup>th</sup> November 2000 at Department of Botany, University of the Punjab, Lahore, Pakistan, organized by Pakistan Botanical Society.

10. **Aftab, F.**, Aftab, Z-H. and Iqbal, J. 2003. Protein changes associated with dedifferentiation and differentiation in *in vitro* callus cultures of sugarcane (*Saccharum* spp. *Hybrid* cv. CP-43/33). Paper presented by F. A. in 7<sup>th</sup> International Conference, Trends in Biochemistry and Molecular Biology, April 2-5, 2003. Organized by Pakistan Society for Biochemistry and Molecular Biology, held at Institute of Biochemistry and Molecular Biology, University of the Punjab, Lahore.

11. **Aftab, F.**, Yousaf, S., Munir, N and Iqbal, J. 2004. Maintenance of regeneration potential over successive subcultures in sugarcane (*Saccharum* spp. *hybrid* cv. SPF-213). Second National Conference of Biology, April 22-24, 2004 at Biology Block, G. C. University, Lahore. Organized by Biological Society of Pakistan (Paper No. P 34).

12. **Aftab, F.**, Butt, M. K., Munir, N and Iqbal, J. 2004. Quantitative/Qualitative study of azadirachtin and neem oil extracted from various explants and callus cultures of *Azadirachta indica*. Second National Conference of Biology, April 22-24, 2004 at Biology Block, G. C. University, Lahore. Organized by Biological Society of Pakistan. Presented by NM on 23<sup>rd</sup> April 2004 in the Biochemistry, Tissue culture morning session as paper No. TC 5

13. **Aftab, F.**, Mansouri, K and Preece, J. E. 2005. The Influence of Environment, Media, and Zeritol on Forcing and In Vitro Establishment of Softwood Shoots from Large Stem Segments of *Acer saccharinum* and *Fraxinus pennsylvanica*. ASHS Annual Conference 2005. Poster 172, session No. 6. Topic: Propagation – 1, Date: Monday, July 18, 2005, Time: 12:00 PM - 12:45 PM, Location: Poster Hall - Ballroom E/F. American Society for Horticultural Science, 18-21 July 2005. Las Vegas, Nevada, USA.

14. Sajid, Z. A. and **Aftab, F.** 2005. Biochemical characterization and associated growth parameters in *in vitro* cultures of *Solanum tuberosum* L. (cvs. Diamant and Desiree) under NaCl stress. Abstract (No. PD1-44). Federation of Asian and Oceanic Biochemists and Molecular Biologists. 18<sup>th</sup> FAOBMB Symposium on Genomics and Proteomics in health and Agriculture at Lahore, Pakistan. November 20-23, 2005. Host: Pakistan Society for Biochemistry and Molecular Biology. Co-Host: University of the Punjab, Lahore, Pakistan. Pp 152.

15. Akram, M. and **Aftab, F.** 2005. A comparative study of monoterpene contents in *in vitro* cultures and field-grown plants of Japanese mint (*Mentha arvensis* L.) Abstract (No. PD1-47). Federation of Asian and Oceanic Biochemists and Molecular Biologists. 18<sup>th</sup> FAOBMB Symposium

on Genomics and Proteomics in health and Agriculture at Lahore, Pakistan. November 20-23, 2005. Host: Pakistan Society for Biochemistry and Molecular Biology. Co-Host: University of the Punjab, Lahore, Pakistan. Pp 154.

16. Akram, M. and **Aftab, F.** 2006. Micropropagation of teak (*Tectona grandis* L.). Abstract. 1<sup>st</sup> International Conference on Biotechnology & Informatics. April 10-12, 2006. Faculty of Biotechnology and Informatics, Balochistan University of Information Technology and Management Sciences, Quetta, Pakistan.

17. Sajid, Z. A. and **Aftab, F.** 2006. Protein and peroxidase contents in *in vitro* cultures of *Solanum tuberosum* L (cvs. Desiree and Cardinal) under NaCl stress. Abstract. 1<sup>st</sup> International Conference on Biotechnology & Informatics. April 10-12, 2006. Faculty of Biotechnology and Informatics, Balochistan University of Information Technology and Management Sciences, Quetta, Pakistan.

18. Sajid, Z. A. and **Aftab, F.** 2006. The effect of thidiazuron (TDZ) on *in vitro* micropropagation of *Solanum tuberosum* L. cvs. Desiree and Cardinal. International Symposium on application of plant sciences in emerging scenario. Paper read by ZAS on March 20, 2006 in the technical session "Plant Physiology". March 20-22, 2006. GCU, Faisalabad, Pakistan. Pp 27.

19. Munir, N. and **Aftab, F.** 2006. Changes in protein and peroxidase contents in callus cultures of sugarcane (*Saccharum* spp. hybrid) under NaCl stress. International Symposium on application of plant sciences in emerging scenario. Paper presented by FA on March 20, 2006 in the technical session "Plant Physiology". March 20-22, 2006. GCU, Faisalabad, Pakistan. Pp 25.

20. Akram, M, Ali, A., Mahmud, S., Afrasiab, H. and **Aftab, F.** 2006. A comparative evaluation of monoterpene contents of field grown and *in vitro* propagated plants of *Mentha arvensis* L. (Japanese mint). Abstract. 9<sup>th</sup> National Conference of Plant Scientists. Pakistan Botanical Society. Held at Institute of Botany, University of Sindh, Jamshoro, Pakistan, February 13-15, 2006.

21. Sajid, Z. A., Ali, A, Afrasiab, H. and **Aftab, F.** 2006. A study of some biochemical changes (protein and peroxidase contents) in *in vitro* cultures of *Solanum tuberosum* L. (cvs. Diamant and Desiree) under salt (NaCl) conditions. Abstract. 9<sup>th</sup> National Conference of Plant Scientists. Pakistan Botanical Society. Held at Institute of Botany, University of Sidh, Jamshoro, Pakistan, February 13-15, 2006.

22. **Aftab, F** and Preece, J. E. 2006. Forcing and *in vitro* establishment of softwood shoots from large stem segments of woody plants. Proceedings of the 11<sup>th</sup> IAPTC&B Congress of Plant Tissue Culture and Biotechnology. August 13-18, 2006. Beijing, China.

23. Akram, M and **Aftab, F.** 2006. Micropropagation and acclimatization of Teak (*Tectona grandis* L.). Poster 1502. Session: Regeneration, Micropropagation and Industrialization. 11<sup>th</sup> IAPTC&B Congress of Plant Tissue Culture and Biotechnology. August 13-18, 2006. Beijing, China.

24. Sajid, Z. A. and **Aftab, F.** 2006. A study of protein and peroxidase contents in *in vitro* cultures of *Solanum tuberosum* L under salt stress. Poster 1537. Session: Regeneration, Micropropagation and Industrialization. 11<sup>th</sup> IAPTC&B Congress of Plant Tissue Culture and Biotechnology. August 13-18, 2006. Beijing, China.

25. Akram, M. and **Aftab, F.** 2007. Rooting and *in vitro* establishment of softwood shoots of *Tectona grandis* L. Oral presentation at 5<sup>th</sup> International Conference, 'Propagation of Ornamental Plants' 5-8 September, 2007, Sofia, Bulgaria. Abstract. Oral presentation No. 9, Page 36 in Book of Abstracts.

26. Akram, M. and **Aftab, F.** 2007. High frequency multiple shoot formation from nodal explants of teak (*Tectona grandis*) induced by thidiazuron. Poster presentation at 5<sup>th</sup> International Conference, 'Propagation of Ornamental Plants' 5-8 September, 2007, Sofia, Bulgaria. Abstract. Poster No. 1, Page 86 in Book of Abstracts.

27. Munir, N. and **Aftab, F.** 2007. Effect of NaCl stress on soluble protein contents and regeneration potential of sugarcane callus cultures. Paper presented by NM at First Symposium on "Genomics, Proteomics, Metabolomics: Recent trends in Biotechnology". October 22-23, 2007. Department of Microbiology and Molecular Genetics, University of the Punjab, Lahore, Pakistan.
28. Haroon, A. and **Aftab, F.** 2007. Adventitious regeneration of pecan using immature cotyledonary explant. Poster presentation. First Symposium on "Genomics, Proteomics, Metabolomics: Recent trends in Biotechnology". October 22-23, 2007. Department of Microbiology and Molecular Genetics, University of the Punjab, Lahore, Pakistan.
29. Akram, M. and **Aftab, F.** 2007. Role of N<sup>6</sup>-benzylaminopurine in *in vitro* axillary shoot proliferation of teak (*Tectona grandis* L.). Paper presented by MA at First Symposium on "Genomics, Proteomics, Metabolomics: Recent trends in Biotechnology". October 22-23, 2007. Department of Microbiology and Molecular Genetics, University of the Punjab, Lahore, Pakistan.
30. Sajid, Z. A. and **Aftab, F.** 2007. Changes in regeneration potential, protein and peroxidase contents in callus cultures of *Solanum tuberosum* under NaCl stress. Paper presented by ZAS at First Symposium on "Genomics, Proteomics, Metabolomics: Recent trends in Biotechnology". October 22-23, 2007. Department of Microbiology and Molecular Genetics, University of the Punjab, Lahore, Pakistan.
31. Haroon, A and **Aftab, F.** 2008. Immature bark explants: an excellent source for callus induction in Pecan (*Carya illinoensis* (Wangenh.) C. Koch). ICPS 2008, International Conference of Plant Scientists (10<sup>th</sup> National Meeting of Plant Scientists). April 21 to 24, 2008. Department of Botany, University of Agriculture, Faisalabad, Pakistan. (Poster presentation, ICPS-141).
32. Shafiq, M and **Aftab, F.** 2008. The influence of environment and log diameter on forcing and establishment of softwood shoots from large stem segments of *Araucaria heterophylla*. ICPS 2008, International Conference of Plant Scientists (10<sup>th</sup> National Meeting of Plant Scientists). April 21 to 24, 2008. Department of Botany, University of Agriculture, Faisalabad, Pakistan. (Oral presentation of ICPS-066 by MS in technical session III-II-Ecology and Conservation, April 21, 2008).
33. Batool, N and Aftab, F. 2008. Thidiazuron induces embryogenesis from mature bark explants in Norfolk Island pine (*Araucaria heterophylla* (Salisb.) Franco). ICPS 2008, International Conference of Plant Scientists (10<sup>th</sup> National Meeting of Plant Scientists). April 21 to 24, 2008. Department of Botany, University of Agriculture, Faisalabad, Pakistan. (Poster presentation, ICPS-193).
34. Akram, M and **Aftab, F.** 2008. Development of *in vitro* axillary and *de-novo* shoots in teak (*Tectona grandis* L.): Effect of indole-3-butyric acid and naphthalene acetic acid. ICPS 2008, International Conference of Plant Scientists (10<sup>th</sup> National Meeting of Plant Scientists). April 21 to 24, 2008. Department of Botany, University of Agriculture, Faisalabad, Pakistan. (Oral presentation of ICPS-103 by MA in technical session I-II-Biotechnology, Molecular and Bioinformatics-I on April 22, 2008).
35. Sajid, Z. A. and **Aftab, F.** 2008. The effect of thidiazuron (TDZ) on *in vitro* micropropagation of *Solanum tuberosum* L. cvs. Desiree and Cardinal. ICPS 2008, International Conference of Plant Scientists (10<sup>th</sup> National Meeting of Plant Scientists). April 21 to 24, 2008. Department of Botany, University of Agriculture, Faisalabad, Pakistan. (Poster presentation, ICPS-125).
36. **Aftab, F.**, Akram, S and Iqbal J. 2008. Estimation of fixed oils from various explants and *in vitro* callus cultures of jojoba (*Simmondsia chinensis*). ICPS 2008, International Conference of

- Plant Scientists (10<sup>th</sup> National Meeting of Plant Scientists). April 21 to 24, 2008. Department of Botany, University of Agriculture, Faisalabad, Pakistan. (Poster presentation, ICPS-103).
37. Munir, N. and **Aftab, F.** 2008. Enhancement of salt tolerance in sugarcane by ascorbic acid pretreatment. ICSC 2008. 5<sup>th</sup> International Crop Science Congress & Exhibition. April 13-18, 2008. International Convention Center, Jeju, Korea. (CS1-S1, P35, pp 10 Abstract book).
38. Sajid, Z.A. and **Aftab, F.** 2008. Effect of ascorbic acid pretreatment on antioxidant enzymes activity and regeneration potential of callus cultures of *Solanum tuberosum* L. under NaCl stress. ICSC 2008. 5<sup>th</sup> International Crop Science Congress & Exhibition. April 13-18, 2008. International Convention Center, Jeju, Korea. (CS3-S1, P11, pp 72 Abstract book).
39. Munir, N. and **Aftab, F.** 2008. Role of Polyethylene glycol (PEG) in improving salt tolerance of sugarcane. ICSC 2008. 5<sup>th</sup> International Crop Science Congress & Exhibition. April 13-18, 2008. International Convention Center, Jeju, Korea. (CS3-S2, P5, pp 120 Abstract book).
40. **Aftab, F.** 2008. Forced epicormic shoots: an excellent source material for an efficient micropropagation of woody plants. Sixth International Symposium on In Vitro Culture and Horticultural Breeding, 2020 Vision for in vitro horticultural breeding, 24-28 August 2008, Brisbane, Queensland, Australia (Abstract).
41. Akram, M and **Aftab, F.** 2008. Softwood shoot forcing from epicormic buds of *Tectona grandis* L. Sixth International Symposium on In Vitro Culture and Horticultural Breeding, 2020 Vision for in vitro horticultural breeding, 24-28 August 2008, Brisbane, Queensland, Australia (Abstract).
42. Akram, M and **Aftab, F.** 2008. In vitro approaches to the establishment and multiplication of teak (*Tectona grandis* L.). Poster presentation by MA. BioVision Alexandria held at Bibliotheca Alexandria, Alexandria, Egypt. April 12-16, 2008.
43. **Aftab, F.** 2010. Micropropagation of woody plants by in vitro establishment of softwood shoots. Invited speaker at Symposium on 'Current Agro Biotechnology and Transgenic Plants' at PC, Lahore on Monday, June 21, 2010. Organized by Department of Microbial and Molecular Genetics, University of the Punjab, Lahore.
44. **Aftab, F.** 2011. An overview of plant tissue culture research at Punjab University, Lahore, Pakistan. Seminar at Institute of Floriculture and Woody Plant Science, Tree Nursery Science Section, Leibniz University Hannover, Germany. January 11, 2011.
45. **Aftab, F** and Winkelmann, T. 2011. Physiological and proteomic characterization of somatic embryogenesis in *Pinus* species of economic significance for Pakistan. Presentation by FA at the Network Meeting of the 'Alexander von Humboldt Foundation', February 2-4, 2011 at Göttingen, Germany.
46. Akram, M. and **Aftab, F.** 2011. Efficient micropropagation and rooting of King white mulberry (*Morus macroura* Miq.) Var. Laevigata from nodal explants of mature trees. PTC-9 presented by MA at Second International Conference of Plant Scientists and 11<sup>th</sup> National Meeting of Plant Scientists, 22-24<sup>th</sup> February, 2011 at GC University Lahore, Pakistan.
47. Sajid, Z. A. and **Aftab, F.** 2011. Role of salicylic acid in amelioration of salt tolerance in *Solanum tuberosum* L. Presented by ZAS at Second International Conference of Plant Scientists and 11<sup>th</sup> National Meeting of Plant Scientists, 22-24<sup>th</sup> February, 2011 at GC University Lahore, Pakistan.
48. Munir, N. and **Aftab, F.** 2011. Effect of NaCl stress on some antioxidant enzymes in callus cultures and regenerated plants of Sugarcane (*Saccharum spp.* Hybrid). Presented by NM at Second International Conference of Plant Scientists and 11<sup>th</sup> National Meeting of Plant Scientists, 22-24<sup>th</sup> February, 2011 at GC University Lahore, Pakistan.

49. **Aftab, F.** 2011. Physiological and proteomic characterization of somatic embryogenesis in *Pinus* species. Invited speaker at ZAP-Applied Plant Biotechnology. 7<sup>th</sup> Workshop Plant Science, April 6, 2011. Blaue Grotte, Harrenhaeuser Str.2, Leibniz Universitaet Hannover, Germany.
50. **Aftab, F.** and Winkelmann, T. 2011. Somatic embryogenesis in *Pinus* species of economic significance for Pakistan. 2011. 7<sup>th</sup> International Symposium on *In Vitro* Culture and Horticultural Breeding, Biotechnological advances in *In Vitro* Horticultural Breeding. Ghent, Belgium, 18-22 Sept, 2011.
51. **Aftab, F.** 2012. Induction of somatic embryogenesis in *Pinus* species. In house seminar at Abteilung Baumschule Institut für Zierpflanzen- und Gehölzwissenschaften, Leibniz Universität Hannover, Germany on January 26, 2012.
52. Sajid, Z. A. and **Aftab, F.** 2012. Plant regeneration from in vitro-selected salt tolerant callus cultures of *Solanum tuberosum* L. Poster presented by ZAS at Twelfth National and third International Conference of Botany. Organized by Pakistan Botanical Society, held at QAU, Islamabad.
53. Akram, M. and **Aftab, F.** 2012. Fruit size and sampling sites reveal useful information on seed dormancy, viability and germination in Teak (*Tectona grandis*L.). Poster presented by MA at Twelfth National and third International Conference of Botany. Organized by Pakistan Botanical Society, held at QAU, Islamabad.
54. Rizwan, S. and **Aftab, F.** 2012. Effect of different pretreatments on breaking seed dormancy and in vitro germination in *Jatropha curcas* L. Poster presented by SR at Twelfth National and third International Conference of Botany. Organized by Pakistan Botanical Society, held at QAU, Islamabad.
55. Ali, J., Choudhury, N. Y. and **Aftab, F.** 2012. *In vitro* development and improvement of Chromium (VI)-affected adventitious roots of *Solanum tuberosum* L. with GA<sub>3</sub> AND IAA application. Oral presentation by JA at Twelfth National and third International Conference of Botany. Organized by Pakistan Botanical Society, held at QAU, Islamabad.
56. Sajid, Z. A. and **Aftab, F.** 2012. An efficient method for the establishment of cell suspension cultures in Potato (*Solanum tuberosum* L). Oral presentation by ZAS at International Conference on Advances in Plant Sciences (ICAPS 2012), November 14-18, 2012, Chiang Mai, Thailand.
57. Akram, M. and **Aftab, F.** 2012. Somatic embryogenesis from cotyledons of *Heterophragma adenophyllum* Seem (Wall. P. Dop): an important medicinal and ornamental tree. Oral presentation by MA at International Conference on Advances in Plant Sciences (ICAPS 2012), November 14-18, 2012, Chiang Mai, Thailand.
58. Gul, M. **Aftab, F.** 2012. Alleviation of Salt Stress in *Solanum tuberosum* L. by Exogenous Application of IAA and Tryptophan. Presented by FA at International Conference on Advances in Plant Sciences (ICAPS 2012), November 14-18, 2012, Chiang Mai, Thailand.

59. Akram, M. and **Aftab, F.** 2013. Efficient plant regeneration via shoot organogenesis from explants of in vitro seedlings of a recalcitrant woody species of teak (*Tectona grandis* L.f.). Oral presentation by FA at '8<sup>th</sup> International Symposium on in vitro culture and Horticultural Breeding', June 2-7, 2013. Coimbra, Portugal.

60. Khalid, A and Aftab, F. 2013. Effect of exogenous application of 24-Epibrassinolide on morphological and biochemical characteristics of *Solanum tuberosum* L. (Cvs. Cardinal and Desiree) under in vitro conditions. Poster Presentation at 11<sup>th</sup> Biennial Conference, 'Molecular Biosciences - Challenges and Opportunities' Pakistan Society for Biochemistry and Molecular Biology. November 25-28, 2013, University of the Punjab Lahore, Pakistan.

61. Aftab, F. 2014. Prospects of Mass Scale Propagation of Economically Important Pinus Species of Pakistan. Presentation by FA in 29<sup>th</sup> International Horticultural Congress (IHC), 2014, at Brisbane Convention and Exhibition Centre, Brisbane, Queensland, Australia, August 17-22, 2014.

62. Aftab, F. 2018. Somatic embryogenesis in Pinus species of Pakistan. Presentation in International Association for Plant Biotechnology (IAPB) Congress 2018 August 19-24, 2018. Dublin Convention Centre, Dublin, Ireland.

#### **RESEARCH SUPERVISION**

Five scholars have already completed research with me and awarded with PhDs on various topics. Five more are currently working on their respective PhD projects. In addition, 11 MPhil, 14 MSc (Hons.)/MS, two at BS and 33 students at MSc level have already completed their research thesis in my lab.

#### **RESEARCH/TECHNICAL PROJECTS COMPLETED:**

a. Worked in the capacity of Research Fellow in UGC's NSRDB-Project No. UN-LHR-BI-1 from 01.07.1990 to 30.06.1992 entitled "Sugarcane cell cultures: Isolation of protoplasts, regeneration of cell cultures, embryos and somatic hybridization". Place of work: Department of Botany, University of the Punjab, Lahore.

b. Establishment of Punjab University Seed Center (2000 –2001). Worked as a Member, Technical Committee during the establishment of the center. Also worked in the capacity of Collaborating Scientist at PU Seed Centre for many years.

c. **As Principal Investigator:** Title: "Biochemical characterization of *in vitro* salt-tolerant cell lines and regenerated plants of potato (*Solanum tuberosum*) and subsequent establishment under *ex-vitro* conditions" A project approved by Higher Education Commission (HEC) at a cost of Rs. 1,714,000.00 vide HEC's No. 20-143/(R & D)/ Acad/03/450 dated April 30, 2004. This project was initiated in 2005. Completed.

d. **As Principal Investigator:** Title: "In vitro approaches to the establishment and multiplication of teak *Tectons grandis* L.)". A research project awarded under National Research Program for Universities by Higher Education Commission (HEC) at a cost of Rs.1, 222,980.00 vide HEC's No. 20-1155/R & D/ 08 2752 dated December 01, 2008.

## **POST-DOCTORAL STUDIES ABROAD**

- 1) Department of Plant Soil and Agricultural Systems, Southern Illinois University at Carbondale, Illinois 62901-4415, USA (2004-2005).
- 2) Institute of Floriculture and Woody Plant Science, Leibniz Universität Hannover, Herrenhaeuser Str. 2, D-30419, Hannover, Germany. Funded by Alexander von Humboldt-Stiftung's George Forster Research Fellowship for Experienced Researchers (2010-2012).

(Dr. Faheem Aftab)  
Professor  
Department of Botany  
University of the Punjab  
Lahore 54590, Pakistan.