




Faculty Details proforma for DU Web-site

Title	Prof.	First Name	P.	Last Name	Pardha Saradhi	Photograph
Designation		Professor				
Address		Official: Department of Environmental Studies, University of Delhi, Delhi – 110007, INDIA Residential: C-8, 29-31 Probyn Road, Delhi University Staff Quarters, Delhi - 110007				
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Web-Page						
Educational Qualifications						
Degree	Institution	Year				
Ph.D.	University of Delhi	1986				
M.Phil.	University of Delhi	1980				
M.Sc. Botany	University of Delhi	1979				
B.Sc. (H) Botany	University of Delhi	1977				
Any other qualification	---					
Career Profile						
University/Institution	Place	Position held	Duration			
S.V. College University of Delhi	Delhi	Lecturer	01.08.1985 to 02.08.1987			
Jamia Millia Islamia	Delhi	Lecturer	03.08.1987 to 22.04.1991			
Jamia Millia Islamia	Delhi	Lecturer (Senior scale)	23.04.1991 to 15.08.1994			
Jamia Millia Islamia	Delhi	Reader	16.08.1994 to 14.01.2001			
University of Delhi	Delhi	Professor	15.01.2001 till date			

Administrative Assignments
<p>Head of the Department of Environmental Biology, University of Delhi – January 2001-January 2004 Head of the Department of Environmental Biology, University of Delhi – January 2007- April 2008 National Coordinator, Pulse Network, Indo-Swiss Collaboration in Biotechnology, 2001-2006</p>
Areas of Interest / Specialization
<p>Plant Physiology & Biochemistry, Environmental Biotechnology, Environmental Nanobiotechnology, Bioremediation</p>
Subjects Taught
<p>Ecological/Environmental Plant Physiology, Environmental Biotechnology, Molecular Biology of Cell, Eco-Toxicology</p>
Research Guidance
<p><i>List against each head (If applicable)</i></p> <p>Supervision of Doctoral Thesis submitted</p> <ol style="list-style-type: none"> 1. Shabnam Nisha: Ecophysiological adaptations that assist <i>Potamogeton nodosus</i> leaves to counter photodamage and metal toxicity. University of Delhi. 2015 (Ph.D. thesis submitted) <p>Supervision of awarded Doctoral Thesis</p> <ol style="list-style-type: none"> 1. Yamal Gupta: Potential utility of microbial culture media and plants to generate metal nanoparticles. University of Delhi (along with Prof. K.S. Rao) 2014 2. M. Phanindra; Variation in T-DNA processing among <i>Agrobacterium</i> strains. University of Delhi. 2013. 3. Swati Srivastava : Identification of Genetic Signatures in High Altitude stress. University of Delhi. 2013. 4. Kavita Singh : Efficacy of synthetic <i>merB</i> gene as selection marker. University of Delhi. 2012. 5. Pooja Gokhale : Effect of elevated CO₂ concentration on growth, phenology, ultrastructure and quality of grain in three species of wheat belonging to different ploidy levels. University of Delhi. (with Prof. A.K. Bhatnagar). 2010. 6. Anupriya Tyagi : Effective use of hydrophytes for remediating water bodies contaminated with copper and nickel. University of Delhi. 2009. 7. V. Vijayalatha : Structural and functional characterization of carotenoid from <i>Dietzia</i> sp. K44. University of Delhi. (with Dr. R.H. Das as co-guide). 2009. 8. Abhishek Chandra : Traditional agrodiversity management in a Central Himalayan village ecosystem. University of Delhi. (with Dr. K.S. Rao as co-guide). 2008. 9. Priyanka Gaurva : Genetic Transformation of local variety of rice in Haryana for enhancing its Salinity Tolerance. Guru Jambheshwar University of Science and Technology, Hisar. (with Prof. A. Chaudhury as Supervisor). 2008. 10. Monika Bansal : Genetic Transformation of Tomato (<i>Lycopersicon esculentum</i>) for Introduction of Salinity Tolerance. Guru Jambheshwar University of Science and Technology, Hisar. (with Prof. A.

Chaudhury as Supervisor) 2007.

11. Amit Grover : Molecular analysis of genes involved in zinc and copper ion resistance in *Mycobacterium smegmatis*. University of Delhi. (with Dr. Rakesh Sharma as co-guide). 2007.
12. Abbas Shahidi Koumleh : Impact of global CO₂ changes on paddy fields. University of Delhi. (with Dr. D.C. Uprety as co-guide). 2007.
13. Firoz Anwar : Genetic transformation of chickpea with bacterial *codA* gene for enhancing drought tolerance. University of Delhi. 2007.
14. Shipra Gupta : Raising antibiotic marker free *codA* transgenics of *Brassica juncea* cv. Varuna with improved abiotic stress tolerance. University of Delhi. 2006.
15. Anderson Paul K.: Production and characterization of transgenic *Brassica oleracea* carrying δ -endotoxin genes of *Bacillus thuringiensis*. Jamia Millia Islamia. 2002.
16. P. Sivakumar: Salt stress induced alteration in the activities of Ribulose 1,5 bisphosphate carboxylase/oxygenase in *Brassica juncea*. Jamia Millia Islamia. 2001.
17. Jos T. Puthur: Photosynthetic events in *Sesbania sesban* (L.) Merrill in relation to osmotic stress during different developmental stages. Jamia Millia Islamia. 2000.
18. K.V.S.K. Prasad: Production and characterization of osmotic stress tolerant transformants of *Brassica juncea* (L.) Czern with bacterial *codA* gene. Jamia Millia Islamia. 1999.
19. Monu Goel: Influence of light and stress factors on nitrate mediated signal transduction of nitrate reductase gene expression in *Zea mays* L. Jamia Millia Islamia. 1998.
20. B. Vani: Studies on high temperature induced alterations in photochemical activities in *Oryza sativa*. Jamia Millia Islamia. 1998.
21. Sandeep Arora: Light induced enhancement in proline levels in *Vigna radiata* exposed to environmental stresses. Jamia Millia Islamia. 1995.
22. Raja Subramaniam: In-vitro studies on *Phyllanthus fraternus*. Jamia Millia Islamia. 1995.
23. Neena Kumari: Isolation and characterization of NaCl tolerant cell lines in *Origanum vulgare* L. Jamia Millia Islamia. 1994.
24. Neelima Atal: Cadmium induced changes in photosynthetic processes in primary leaves of wheat. Jamia Millia Islamia. 1993.
25. Debashree Choudhury: Pathological investigations on leaf blight of sunflower caused by *Alternaria helianthi*. Jamia Millia Islamia. 1993.
26. Alia: Salt stress induced changes in the levels of proline in *Brassica juncea*. Jamia Millia Islamia. 1992.

Publications Profile

Recognition of Published work (as per Google Scholar)

Total citations = 2545

h Index = 26

i10 index = 44

List against each head(If applicable) (as illustrated with examples)

1. Books/Monographs (Authored/Edited)

1. Pardha Saradhi, P. 2001. *Biophysical Processes in Living Systems*. Scientific Publishers, Inc., USA.

2. Research papers published in Refereed/Peer Reviewed Journals

1. Pardha-Saradhi P., Shabnam N., Kashyap A., Yamal G., Sharmila P. 2015. Roots of *Portulaca grandiflora* evolved mechanism to counter excess iron. *Sci. Technol. J.* (in press) ISSN no. 2321-3388
2. Shabnam, N., Sharmila, P, Sharma, A., Strasser, R.J., Govindjee and Pardha-Saradhi, P. 2015. Mitochondrial electron transport protects floating leaves of long leaf pondweed (*Potamogeton nodosus* Poir) against photoinhibition: comparison with submerged leaves. *Photosynth. Res.* 125: 305-319.
3. Pardha-Saradhi, P., Yamal, G., Peddisetty, T., Sharmila, P., Nagar, S., Singh, J., Nagarajan, R. and Rao, K.S. 2014. Reducing Strength Prevailing at Root Surface of Plants Promotes Reduction of Ag^+ and Generation of Ag^0/Ag_2O Nanoparticles Exogenously in Aqueous Phase. *PLoS one* 9 (9): e106715.
4. Goyal N., Pardha-Saradhi P. and Sharma GP Can adaptive modulation of traits to urban environments facilitate *Ricinus communis* L. invasiveness? *Environ. Monit. Assess.* 186: 7941-7948.
5. Bassi, N., Kumar, M.D., Sharma, A. and Pardha-Saradhi, P. 2014. Status of wetlands in India: a review of extent, ecosystem benefits, threats and management strategies. *J. Hydrol.: Region. Stud.* 2: 1-19.
6. Shabnam, N., Pardha-Saradhi, P. and Sharmila, P. 2014. Phenolics impart Au^{3+} -stress tolerance to cowpea by generating nanoparticles. *PLoS ONE* 9(1): e85242.
7. Pardha-Saradhi, P., Yamal, G., Peddisetty, T., Sharmila, P., Singh, J., Nagarajan, R. and Rao, K.S. 2014. Plants fabricate Fe-nanocomplexes at root surface to counter and phytostabilize excess ionic Fe. *Biomaterials* 27: 97-114.
8. Pardha-Saradhi, P., Yamal, G., Peddisetty, T., Sharmila, P., Singh, J., Nagarajan, R. and Rao, K.S. 2014. Root system of live plants is a powerful resource for the green synthesis of Au-nanoparticles. *RSC Adv.* 4: 7361-7367.
9. Shabnam, N. and Pardha-Saradhi, P. 2013. Photosynthetic electron transport system promotes synthesis of Au-nanoparticles. *PLoS ONE* 8(8): e71123.
10. Puthur, J.T., Shackira, A.M., Pardha Saradhi, P. and Bartels, D. 2013. Chloroembryos: A unique photosynthesis system. *J. Plant Physiol.* 170: 1131-1138.
11. Yamal, G., Sharmila, P., Rao, K.S. and Pardha-Saradhi, P. 2013. Inbuilt Potential of YEM Medium and Its Constituents to Generate Ag/Ag_2O Nanoparticles. *PLoS ONE* 8: e61750.
12. Yamal, G., Sharmila, P., Rao, K.S. and Pardha-Saradhi, P. Yeast Extract Mannitol medium and its constituents promote synthesis of Au nanoparticles. (2013) *Process Biochemistry*, 48: 532-538.
13. Venugopalan, V., Tripathi, S.K., Nahar, P., Pardha Saradhi, P., Das, R.H. and Gautam, H.K. 2013. Characterization of canthaxanthin isomers isolated from a new soil *Dietzia* sp. and their antioxidant activities. *J. Microbiol. Biotech.* 23: 237-245.
14. Sharma, P., Bhatt, D., Zaidi, M.G.H., Pardha Saradhi, P., Khanna, P.K. and Arora, S. 2012. Silver nanoparticle mediated enhancement in growth and antioxidant status of *Brassica juncea*. *Appl.*

Biochem. Biotech. 167: 2225-2233.

15. Dhir, B., Sharmila, P., Pardha Saradhi, P., Sharma, S., Kumar, R. and Mehta, D. 2011. Heavy metal induced physiological alterations in *Salvinia natans*. *Ecotoxicol. Environ. Saf.* 74: 1678–1684.
16. Sinha, P.G., Pardha Saradhi, P., Uprety, D.C. and Bhatnagar, A.K. 2011. Effect of elevated CO₂ concentration on photosynthesis and flowering in three wheat species belonging to different ploidies. *Agric. Ecosyst. Environ.* 142: 432-436.
17. Chandra, A., Pardha Saradhi, P., Rao, K.S., Saxena, K.G. and Maikhuri, R.K. 2011. An investigation into the energy use in relation to yield of traditional crops in Central Himalaya, India. *Biomass Bioenergy* 35: 2044-2052.
18. Chandra, A., Pardha Saradhi, P., Maikhuri, R.K., Saxena, K.G. and Rao, K.S. 2011. Traditional Agrodiversity Management: A Case Study of Central Himalayan Village Ecosystem. *J. Mount. Sci.* 8: 62-74.
19. Chandra, A., Pardha Saradhi, P., Rao, K.S., Saxena, K.G. and Maikhuri, R.K. 2010. Assessment of monetary budget in traditional agrobiodiversity management: a case study of Central Himalayan village ecosystem. *Phytomorphology* 60: 137-149.
20. Maheswari, M., Varalaxmi, Y., Vijayalakshmi, A., Yadav, S.K., Sharmila, P., Venkateswarlu, B., Vanaja, M., Pardha Saradhi, P. 2010. Metabolic engineering using *mtlD* gene enhances tolerance to water deficit and salinity in sorghum. *Biol. Plant.* 54: 647-652.
21. Dhir, B., Nasim, S.A., Sharmila, P. and Pardha Saradhi, P. 2010. Heavy metal removal potential of dried *Salvinia* biomass. *Int. J. Phytoremed.* 12: 133-141.
22. Anwar, F., Sharmila, P., Pardha Saradhi, P. 2010. No more recalcitrant: Chickpea regeneration and genetic transformation. *Afr. J. Biotech.* 9: 782-797.
23. Semwal, D. P., Pardha Saradhi, P., Kala C.P. and Sajwan, B.S. 2010. Medicinal plants used by local *Vaidyas* in Ukhimath block, Uttarakhand, India. *Indian J. Trad. Know.* 9: 480-485.
24. Sharmila, P., Phanindra, M.L.V., Anwar, F., Singh, K., Gupta, S. and Pardha Saradhi P. 2009. Targeting prokaryotic choline oxidase into chloroplasts enhance the potential of photosynthetic machinery of plants to withstand oxidative damage. *Plant Physiol. Biochem.* 47: 391-396.
25. Dhir, B., Sharmila, P., Pardha Saradhi, P. 2009. Potential of aquatic macrophytes for removing contaminants from the environment. *Crit. Rev. Environ. Sci. Tech.* 39: 754-781.
26. Anwar, F., Sharmila, P., Pardha Saradhi, P. 2009. No more hurdle: In vitro chickpea rooting and cent percent transplantation. *Aust. J. Basic Appl. Sci.* 3: 2491-2496.
27. Dhir, B., Sharmila, P., Pardha Saradhi, P. and Nasim S.A. 2009. Physiological and antioxidant responses of *Salvinia natans* exposed to chromium-rich wastewater. *Ecotoxicol. Environ. Saf.* 72: 1790-1797.
28. Gupta, S., Srivastava, S. and Pardha Saradhi, P. 2009. Chromium (VI) increases photosystem 2 activity in *Brassica juncea*. *Biol. Plant.* 53:100-104.
29. Venugopalan, V., Verma, N., Gautam, H.K., Pardha Saradhi, P. and Das, R.H. 2009. 9-cis-canthaxanthin exhibits higher pro-apoptotic activity than all-trans-canthaxanthin isomer in THP-1 macrophage cells. *Free Radical Res.* 43:100-105.
30. Gaurva, P., Bansal, M., Sharmila, P., Pardha Saradhi, P., Dilbaghi, N. and Chaudhury, A. 2009. *Agrobacterium*-mediated genetic transformation of an *Indica* variety of rice HKR126 using *codA* gene for enhancing salinity tolerance. *Agric. Biol. Res.* 25: 1-20.
31. Anwar, F., Sharmila, P. and Pardha Saradhi, P. 2008. An optimal protocol for *in vitro* regeneration, efficient rooting and stable transplantation of chickpea. *Physiol. Mol. Biol. Plants*, 14: 329-335.

32. Dhir, B., Sharmila, P. and Pardha Saradhi, P. 2008. Photosynthetic performance of *Salvinia natans* exposed to chromium and zinc rich wastewater. *Braz. J. Plant Physiol.*, 20: 61-70.
33. Bansal, M., Gaurva, P., Sharmila, P., Pardha Saradhi, P., Dilbaghi, N. and Chaudhary, A. 2008. Agrobacterium-Mediated Genetic Transformation of Tomato for Enhanced Salt Tolerance. *Icfai J. Biotech.* 2: 34-51.
34. Semwal, D. P. and Pardha Saradhi, P. 2007. Ethnobotanical Studies in the Villages of the KedarNath Sanctuary, Central Himalayas, India. *J. Econ. Taxon. Bot.* 32: 48-57.
35. Koumeleh, A.S., Sharmila, P., Uprety, D.C. and Pardha Saradhi, P. 2007. Impact of Elevated CO₂ on Nutrient Uptake of Rice Cultivars (*Oryza sativa* L). *Indian J. Crop Sci.* 2: 87-90.
36. Semwal, D.P., Pardha Saradhi, P., Nautiyal, B.P. and Bhatt, A.B. 2007. Current Status, distribution and conservation of rare and Endangered Medicinal Plants (REMP) of Kedarnath Wild Life Sanctuary, Central Himalayas, India. *Curr. Sci.* 92: 1733-1738.
37. Bansal, M., Gaurva, P., Sharmila, P., Pardha Saradhi, P., Dilbaghi, N. and Chaudhury, A. 2007. High frequency plant regeneration from cotyledonary explants of tomato (*Lycopersicon esculentum* Mill.) cv. Pusa Ruby. *Ann. Agri-Bio Res.* 12: 101-106.
38. Gaurva, P., Bansal, M., Sharmila, P., Pardha Saradhi, P., Dilbaghi, N. and Chaudhury, A. 2007. Genotypic variation in callus induction and regeneration of five popular varieties of rice grown in Haryana. *Ann. Agri-Bio Res.* 12: 107-112.
39. Semwal, D.P., Pardha Saradhi, P. and Bhatt, A.B. 2007. Dominance-diversity, Community coefficient and niche width relations of woody species in moist temperate forests of Central Himalaya, India. *Int. J. Biol. Chem. Sci.* 2: 35-42.
40. Semwal, D.P., Pardha Saradhi, P. and Bhatt, A.B. 2006. Comparing structure and composition of *Taxus baccata* sub sp *wallichiana* Zucc. With other associates in a part of Garhwal Himalaya, Uttaranchal. *Phytomorphology* 56: 127-128.
41. Sharmila, P., Reddy, B.V.P. and Pardha Saradhi, P. 2005. Efficient somatic embryogenesis from root segments of *Sesbania sesban* by fine-tuning the levels of auxin and cytokinin. *Physiol. Mol. Biol. Plants* 11: 121-126.
42. Paul, A., Sharma, S.R., Sresty, T.V.S., Shantibala Devi, Suman Bala, Kumar, P.S., Pardha Saradhi, P., Frutos, R., Altosaar, I. and Ananda Kumar, P. 2005. Transgenic cabbage (*Brassica oleracea* var. *capitata*) resistant to Diamondback moth (*Plutella xylostella*) *Indian J. Biotechnol.* 4: 72-77.
43. Puthur, J.T., and Pardha Saradhi, P. 2004. Developing embryos of *Sesbania sesban* have unique potential to photosynthesize under high osmotic environment. *J. Plant Physiol.* 161: 1107-1118.
44. Prasad, K.V.S.K and Pardha Saradhi, P. 2004. Enhanced tolerance to photoinhibition in transgenic plants through targeting of glycinebetaine biosynthesis into the chloroplasts. *Plant Sci.* 166: 1197-1212.
45. Bhupinder Dhir, Sharmila, P. and Pardha Saradhi, P. 2004. Hydrophytes Lack Potential to Exhibit Cadmium Stress Induced Enhancement in Lipid Peroxidation and Accumulation of Proline. *Aquatic Toxicol.* 66: 141-147.
46. Sivakumar, P., Sharmila, P. Jain, V. and Pardha Saradhi, P. 2002. Compatible sugars and sugar-alcohols curtail oxygenase activity of rubisco as a strategy for stress adaptation. *Biochem. Biophys. Res. Commun.* 298: 247-250.
47. Arora, S. and Pardha Saradhi, P. 2002. Non-photosynthetic events regulate light promoted stress induced proline accumulation in *Vigna radiata*. *Biol. Plant.* 45: 629-632.
48. Paul, A.K., Anand Kumar, P. and Pardha Saradhi, P. 2002. Genetic transformation of vegetable

- Brassicas: A Review. Plant cell Biotech. Mol. Bio. 3: 1-10.
49. Dhir, B. Sharmila, P., Singh, R.P. and Pardha Saradhi, P. 2002. Nitrogen -Sulfur Interactions in Plants. Physiol. Mol. Biol. Plants 8: 213-220.
 50. Sivakumar, P., Sharmila, P. and Pardha Saradhi, P. 2001. Proline suppresses Rubisco activity by dissociating smaller subunits from holoenzyme. Biochem. Biophys. Res. Commun. 282: 236-241.
 51. Sharmila, P., Ansari, N.A. and Pardha Saradhi, P. 2001. Production of a somaclonal variant of *Solanum melongena* with enhanced tolerance to low temperature stress. Physiol. Mol. Biol. Plants 7: 75-79.
 52. Vani, B., Pardha Saradhi, P. and Mohanty, P. 2001. Alteration in chloroplast structure and thylakoid membrane composition due to in vivo heat treatment of rice seedlings: correlation with functional changes. J. Plant Physiol. 158: 583-592.
 53. Vani, B., Pardha Saradhi, P. and Mohanty, P. 2001. Characterization of high temperature induced stress impairments in thylakoids of rice seedlings. Indian J. Biochem. Biophys. 38: 220-229.
 54. Sivakumar, P., Sharmila, P. and Pardha Saradhi, P. 2000. Proline alleviates salt stress induced enhancement in ribulose 1,5-bisphosphate oxygenase activity. Biochem. Biophys. Res. Commun. 279: 512-515.
 55. Prasad, K.V.S.K., Sharmila, P., Kumar, P.A. and Pardha Saradhi, P. 2000. Transformation of *Brassica juncea* (L.) Czern with bacterial *codA* gene enhances its tolerance to salt stress. Mol. Breed. 6: 489-499.
 56. Prasad, K.V.S.K., Sharmila, P. and Pardha Saradhi, P. 2000. Enhanced tolerance of transgenic *Brassica juncea* to choline confirms successful expression of the bacterial *codA* gene. Plant Sci. 159: 233-242.
 57. Pardha Saradhi, P., Suzuki, I., Katoh, A., Sakamoto, A., Sharmila, P., Shi, D.-J. and Murata, N. 2000. Protection of the photosystem II complex by abscisic acid against photoinduced-inactivation. Plant Cell Environ. 23: 711-718.
 58. Datt, N., Pardha Saradhi, P., Sengupta, L.K. and Bisen, P.S. 2000. Isolation and characterization of NaCl tolerant cell lines in *Origanum vulgare* L. Physiol. Mol. Biol. Plants 6: 45-52.
 59. Prasad, K.V.S.K., Pardha Saradhi, P. and Sharmila, P. 1999. Correlative changes in the activities of antioxidant enzymes under zinc toxicity in *Brassica juncea*. Environ. Exptl. Bot. 42: 1-10.
 60. Alia, Kondo, Y., Sakamoto, A., Nonaka, H., Hayashi, H., Pardha Saradhi, P., Chen, T.H.H. and Murata, N. 1999. Enhanced tolerance to light stress in transgenic plants of *Arabidopsis* expressing the *codA* gene for bacterial choline oxidase. Plant Mol. Biol. 44: 279-288.
 61. Sivakumar, P., Sharmila, P. and Pardha Saradhi, P. 1998. Proline suppresses Rubisco activity in higher plants. Biochem. Biophys. Res. Commun. 252: 428-432.
 62. Subhan, S., Sharmila, P. and Pardha Saradhi, P. 1998. *Glomus fasciculatum* alleviates transplantation shock of micropropagated *Sesbania sesban*. Plant Cell Rep. 17: 268-272.
 63. Puthur, J.T., Prasad, K.V.S.K., Sharmila, P. and Pardha Saradhi, P. 1998. Vesicular arbuscular mycorrhizal fungi improves establishment of *Leucaena leucocephala* plantlets. Plant Cell Tissue Organ Cult. 53: 41-47.
 64. Alia, Pardha Saradhi, P. and Mohanty, P. 1997. Involvement of proline in protecting thylakoid membranes against free radical-induced photodamage. J. Photochem. Photobiol. B: Biology 38: 253-257.
 65. Rajasubramaniam, S. and Pardha Saradhi, P. 1997. Rapid multiplication of *Phyllanthus fraternus* : an anti-hepatitis viral activity. Indust. Crops Prod. 6: 35-40.

66. Vani, B., Pardha Saradhi, P. and Mohanty, P. 1996. Effect of short-term heat treatment of rice seedlings on sensitivity of thylakoid membranes to photoinhibition. *Biol. Plant.* 38: 501-509.
67. Pardha Saradhi, P., Arora, S., Vani, B. and Puthur, J.T. 1996. Alteration in NAD⁺/NADH ratio regulates salt stress induced proline accumulation in *Vigna radiata*. *Proc. Nat. Acad. Sci. (India)* 66 (B): 89-100.
68. Arora, S. and Pardha Saradhi, P. 1995. Light induced enhancement in proline levels in *Vigna radiata* exposed to environmental stresses. *Australian J. Plant Physiol.* 22: 383-386.
69. Pardha Saradhi, P., Alia, Arora, S. and Prasad, K.V.S.K. 1995. Proline accumulates in plants exposed to UV radiation and protect them against UV induced peroxidation. *Biochem. Biophys. Res. Com.* 209: 1-5.
70. Pardha Saradhi, P. and Alia 1995. Production and selection of somaclonal variants of *Leucaena leucocephala* with high carbon dioxide assimilating potential. *Energy Convers. Mgmt.* 36: 759-762.
71. Alia, Prasad, K.V.S.K. and Pardha Saradhi, P. 1995. Zinc induced changes in the levels of free radicals and proline in *Brassica juncea* and *Cajanus cajan*. *Phytochemistry* 39: 45-47.
72. Rajasubramaniam, S. and Pardha Saradhi, P. 1994. Organic nitrogen stimulates caulogenesis from hypocotyl callus of *Phyllanthus fraternus*. *Plant Cell Rep.* 13: 619-622.
73. Alia and Pardha Saradhi, P. 1993. Suppression in mitochondrial electron transport is the prime cause behind stress induced proline accumulation. *Biochem. Biophys. Res. Commun.* 193: 54-58.
74. Pardha Saradhi, P., Alia and Vani, B. 1993. Inhibition of mitochondrial electron transport is the prime cause behind proline accumulation during mineral deficiency in *Oryza sativa*. *Plant Soil* 156: 465-468.
75. Alia, Pardha Saradhi, P. and Mohanty, P. 1993. Proline in relation to free radical production in seedlings of *Brassica juncea* raised under sodium chloride stress. *Plant Soil* 156: 497-500.
76. Alia, Pardha Saradhi, P. and Mohanty, P. 1992. Enhancement of photosystem II photoreaction and high pH stability in thylakoids from cotyledonary leaves of *Brassica juncea* raised under sodium chloride stress. *Physiol. Plant.* 86: 189-196.
77. Neena Kumari and Pardha Saradhi, P. 1992. Regeneration of plants from callus cultures of *Origanum vulgare* L. *Plant Cell Reports.* 11: 476-479.
78. Alia, Mohanty, P. and Pardha Saradhi, P. 1992. Effect of sodium chloride on primary photochemical activities in cotyledonary leaves of *Brassica juncea*. *Biochem. Physiol. Pflanzen.* 188: 1-12.
79. Alia, Pardha Saradhi, P. and Mohanty, P. 1991. Proline enhances primary photochemical activities in isolated thylakoid membranes of *Brassica juncea* by arresting photoinhibitory damage. *Biochem. Biophys. Res. Commun.* 181: 1238-1244.
80. Alia and Pardha Saradhi, P. 1991. Proline accumulation under heavy metal stress. *J. Plant Physiol.* 138: 554-558.
81. Atal, N., Pardha Saradhi, P. and Mohanty P. 1991. Inhibition of chloroplast photochemical reactions by treatment of wheat seedlings with low concentrations of cadmium: Analysis of electron transport activity and changes in fluorescence yield. *Plant Cell Physiol.* 32: 943-951.
82. Pardha Saradhi, P. and Mohan Ram, H.Y. 1989. Prolongation of vase-life of *Chrysanthemum* blooms by cobalt chloride and its reversal by IAA. *Acta Hort.* 261: 287-292.
83. Mohan Ram, H.Y. and Pardha Saradhi, P. 1989. Levels of cationic macroelements, sodium and phosphorus during development and senescence of ray florets in *Chrysanthemum*. *Acta Hort.* 261: 309-312.

84. Pardha Saradhi, P. and Mohan Ram, H.Y. 1987. Correlated changes in carbohydrate levels and associated enzyme activities during development and senescence of ray florets in *Chrysanthemum*. Proc. Indian Acad. Sci. (Plant Sci.) 97: 377-384.
85. Pardha Saradhi, P. and Mohan Ram, H.Y. 1982. Correlated promotion of ray-floret growth in *Chrysanthemum* by potassium chloride, gibberellic acid and sucrose. Proc. Indian Acad. Sci. (Plant Sci.) 91: 101-106.
86. Pardha Saradhi, P. and Mohan Ram, H.Y. 1981. Some aspects of floral biology of *Cassia fistula* Linn. (The Indian Laburnum) Part I. Curr. Sci. 50: 802-805.

3. a) Research papers published in Academic Journals other than Refereed/Peer Reviewed Journals/Magazines

1. Semwal, D. P., P. Pardha Saradhi and A.B. Bhatt (2005). Rhododendrons in the Garhwal Himalaya, Uttaranchal - Conservation Needs. The Botanica 55: 17-24.
2. Puthur, J.T., Sharmila, P., Prasad, K.V.S.K. and Pardha Saradhi, P. 1997. Proline overproduction: a means to improve stress tolerance in crop plants. Botanica 47: 163-169.
3. Pardha Saradhi, P. 1995. Micropropagation of fast growing tree species with high CO₂ assimilating potential and their establishment through mycorrhizal association in barren lands. RITE Now 16: 15.
4. Neena, K. and Pardha Saradhi, P. 1987. Plant tissue culture and potential applications. Biol. Education 3: 166-175.
5. Pardha Saradhi, P. 1980 *Dendrocalamus strictus* Nees. : A multipurpose bamboo. Botanica 30: 75-78.

b) Research papers published in Refereed/Peer Reviewed Conferences

1. Tyagi, A., Sharmila, P. and Pardha Saradhi, P. (2007). *Salvinia natans* is an ideal system for phytoremediation. In Environmental Science and Technology. Eds: S.K. Starrett, J.J. Hong, R.J. Wilcock, Q. Li, J.H. Carson and S. Arnold, 234-241. American Science Press, Houston.
2. Koumeleh, A.S., Sharmila, P., Uprety, D.C. and Pardha Saradhi, P. 2006. Impact of elevated CO₂ on nutrient bioavailability in paddy fields. In Environmental Science and Technology. Eds: S.K. Starrett, J.J. Hong and W. G. Lyon, Vol II.: 217-223. American Science Press, Houston, ISBN: 0-9768853-7-9.
3. Gupta, S., Sharmila, P., Burma. P.K. and Pardha Saradhi, P. 2006. Raising antibiotic marker free abiotic stress tolerant Brassica juncea transgenics. In: Environmental Science and Technology. Eds: S.K. Starrett, J.J. Hong and W. G. Lyon, Vol II: 501-507. American Science Press, Houston, ISBN: 0-9768853-7-9.
4. Pardha Saradhi, P., Sivakumar, P. and Sharmila, P. 2005. Compatible solutes curtail oxygenase activity of Rubisco as a strategy for stress adaptation. In Photosynthesis: Fundamental Aspects to Global Perspectives. Eds: A. van der Est and D. Bruce , 651-652. International Society of Photosynthesis, USA.
5. Gupta, S., Srivastava, S. and Pardha Saradhi, P. 2005. Chromium (VI) promotes photosystem II activity in Brassica juncea. In Photosynthesis: Fundamental aspects to global perspectives. Eds:

A. van der Est and D. Bruce, 2: 649-651. Alliance Communications Group, USA.

6. Puthur, J.T., Sharmila, P. and Pardha Saradhi, P. 1998. Photosynthetic machinery of cotyledons of *Sesbania sesban* performs better under high osmotic environment. In: Photosynthesis: Mechanisms and Effects, Ed.: G. Garab, IV: 2629-2632. Kluwer Acad. Publ., Dordrecht.
7. Vani, B., Pardha Saradhi, P. and Mohanty, P. 1998. Differential sensitivities of thylakoid photofunctions to in vivo elevated temperature stress in *Oryza sativa* seedlings. In: Photosynthesis: Mechanisms and Effects, Ed.: G. Garab, V: 3841-3844. Kluwer Acad. Publ., Dordrecht.
8. Alia, Pardha Saradhi, P. and Mohanty, P. 1995. Salt stress induced proline accumulation protects thylakoid membranes against photodamage. In Photosynthesis: from Light to Biosphere. Ed.: P. Mathis, IV: 705-708. Kluwer Academic Publishers, Dordrecht.
9. Pardha Saradhi, P. and Alia 1995. Alleviation of salt stress induced suppression in growth by ethephon is associated with decline in proline accumulation. In The Proceedings of the Plant Growth Regulator Society of America. 22nd Annual Meeting. Ed.: D.W. Greene, 365-370. Plant Growth Regulator Society of America, NC.
10. Pardha Saradhi, P., Shaji, S. and Pant, N. 1995. Induction of embryoids from root segments of *Sesbania sesban* by benzylaminopurine. In The Proceedings of the Plant Growth Regulator Society of America. 22nd Annual Meeting. Ed.: D.W. Greene, 371-376. Plant Growth Regulator Society of America, NC.
11. Pardha Saradhi, P., Mukerji, K.G. and Alia 1994. Micropropagation of fast growing tree species with high CO₂ assimilating potential and their establishment through mycorrhizal association in barren lands. In Proceedings of RITE's Workshop, 1-31-35. RITE, Kyoto.
12. Pardha Saradhi, P., Alia and Vani, B. 1993. Inhibition of mitochondrial electron transport is the prime cause behind proline accumulation during mineral deficiency in *Oryza sativa*. In Plant Nutrition - from Genetic Engineering to Field Practice. Ed. N.J. Barrow, 689-692. Kluwer Academic Publishers, Dordrecht.
13. Alia, Pardha Saradhi, P. and Mohanty, P. 1993. Proline in relation to free radical production in seedlings of *Brassica juncea* raised under sodium chloride stress. In Plant Nutrition - from Genetic Engineering to Field Practice. Ed. N.J. Barrow, 731-734. Kluwer Academic Publishers, Dordrecht.
14. Atal, N., Pardha Saradhi, P. and Mohanty, P. 1993. Effect of iron on photosystem II mediated photochemical activities and proline levels in wheat seedlings during Cd²⁺ stress. In Proceedings of DAE Symposium on Photosynthesis and Plant Molecular Biology. 1-5. Bhabha Atomic Research Centre, Bombay.
15. Pardha Saradhi, P. and Mohan Ram, H.Y. 1989. Physiology of development and senescence of capitula in *Chrysanthemum*. In. Plant Reproduction: From Floral Induction to Pollination. Eds.: E.M. Lord and G. Bernier. The American Society of Plant Physiologists, U.S.A.

c) Research papers Published in Conferences/Seminar other than Refereed/Peer Reviewed Conferences

1. Chandra, A., Sharmila, P., Pardha Saradhi, P., Saxena, K.G. and Rao, K.S. 2009. Sustainability of selected traditional pulses with native *Rhizobial* strains: A case study of Nanda Devi Biosphere

Reserve, Uttarakhand. In Functional Biodiversity & Ecophysiology of Animals., Eds. D. Kumar, N. Rastogi and M. Singaravel, pp. 135-146. Proceedings of the Symposium.

2. Chandra, A., Sharmila, P., Pardha Saradhi, P., Rao, K.S., Saxena, K.G. Kandari, L.S., Payal. K.C. and Maikhuri, R.K. 2009. Assessment of biological yield of some selected *Vigna* sps. with native Rhizobial Strain in traditional agroecosystem of Central Himalaya. In Proceedings of the International Conference on Changing Environmental Trends and Sustainable Development. 217-221. CETAS-2009.

6. Other publications (Edited works, Book reviews, Festschrift volumes, etc.)

Chapters in Edited Books

1. Sharmila, P., Anwar, F., Sharma, K.R. and Pardha Saradhi, P. (2008). Management of abiotic stresses in grain legumes through manipulation of genes for compatible solutes. *In: Handbook of New Technologies for Genetic Improvement of Legumes*. Ed. P. B. Kirti, CRC Press, Taylor & France Group, USA, pp. 577-603.
2. Sharmila, P., Singh, R.P. and Pardha Saradhi, P. 2006. Nitrogen in interactions with sulfur metabolism in plants. *In: Biotechnological Approaches to Improve Nitrogen Use Efficiency in Plants*. Eds: R.P. Singh and P.K. Jaiwal, Studium Press, USA, 241-256.
3. Sharmila, P., Gupta, S., Anwar, F. and Pardha Saradhi, P. 2006. Introduction of glycinebetaine pathway through genetic engineering enhances potential of plants to withstand abiotic stress. *In: Current Concepts in Botany*. Eds. K.G. Mukerji and C. Manoharachary, I.K. International, India, 471-491.
4. Pardha Saradhi, P. and Sharmila, P. 2003. Improvement of crop plants for abiotic stress tolerance through introduction of glycinebetaine pathway. *In: Plant Genetic Engineering*. Eds: R.P. Singh and P.K. Jaiwal, Sci Tech Publishing Lic, U.S.A., 147-177.
5. Sharmila, P. and Pardha Saradhi, P. 2002. Proline accumulation in heavy metal stressed plants: An adaptive strategy. *In: Physiology and Biochemistry of Metal Toxicity and Tolerance in Plants*. Eds: M.N.V.Prasad and Kazimierz Strzalka, Kluwer Acad. Publ., Dordrecht, 179-199.
6. Sharmila, P. and Pardha Saradhi, P. 2002. Evaluating Performance of Plants Infected with Vesicular Arbuscular Mycorrhizal Fungi for Alleviating Abiotic Stresses. *In: Techniques in Mycorrhizal Studies*. Eds: K.G. Mukherji et al. Kluwer Acad. Publ., Dordrecht, 469-492.
7. Sivakumar, P., Yadav, S. and P. Pardha Saradhi, P. 2001. Rubisco folding - A model system for the functional investigation of molecular chaperones. *In: Biophysical Processes in Living Systems*, Ed. P. Pardha Saradhi, Scientific Publishers, Inc., USA, p 91-116.
8. Sharmila, P., Puthur, J.T. and Pardha Saradhi, P. 2000. Vesicular arbuscular mycorrhizal fungi improves establishment of micropropagated plants. *In: Mycorrhizal Biology*, Ed. K.G. Mukerji, Kluwer Academic/Plenum Publishers, New York : 235-250.
9. Saxena, D. and Pardha Saradhi, P. 1998. Sodium chloride induced changes in the level of proline, sugars and activities of certain enzymes in chickpea. *In: Advances in Genes and Genome Biology*, Ed.: Arif Ali, Venus Publishing House, New Delhi, 99-109.
10. Mohan Ram, H.Y., Ramanuja Rao, I.V. and Pardha Saradhi, P. 1986. Physiology of ornamental flowers. *In: K.L. Chadha, Chowdhury (Eds.) Ornamental Horticulture in India*, PP 181-190. ICAR, New Delhi.

List against each head (If applicable)

1. Organization of a Conference/Workshop/Symposium

- (i) Course Incharge for Refresher Course in Environmental Studies, organized by Center for Professional Development in Higher Education at Institute of Life Long Learning, Academic Research Centre, University of Delhi. February 25- to March 17, 2008.
- (ii) Organized Interaction Workshop on "Ecological Modelling and Valuation of Ecosystem Services" organized along with Prof. K.S. Rao (Department of Botany, University of Delhi) and ZALF (Germany), held at Department of Environmental Biology, University of Delhi, February 12, 2008.
- (iii) Organized Workshop for providing practical training to college teachers involved in Environmental Science programme. sponsored by University of Delhi, held at Department of Environmental Biology, University of Delhi August 20-21, 2007.
- (iv) Organized Indo-Swiss Collaboration in Biotechnology (ISCB) Annual Pulse Network Meeting 2006. Sponsored by Swiss Agency for Development Co-operation (SDC), Switzerland and DBT, India. December 05-07, 2006.
- (v) Organized Practical Training Workshop on "Physiological characterization of transgenic pulses for abiotic stress tolerance" Sponsored by Swiss Agency for Development Co-operation (SDC), Switzerland and DBT, India. November 27- December 02, 2006.
- (vi) Organized Workshop on "Less-Known Ethnomedicinal Plants of Okhimath Block, Uttaranchal - Their Abundance, Distribution and Conservation Issues" held at Okhimath (Uttaranchal) sponsored by National Medicinal Plants Board, Govt. of India, New Delhi. June 22-24, 2006.
- (vii) Organized a Symposium on "How safe is 'safe' drinking water?" sponsored by University of Delhi, held at Department of Environmental Biology, University of Delhi, February 02, 2001.

2. Participation as Paper/Poster Presenter (Abroad)

- (i) 10th Asia Pacific Conference on Sustainable Energy & Environmental Technologies held at University of Seoul from 2nd to 5th July 2015 (Invited Speaker and Chairperson of two Technical Sessions)
- (ii) International Conference on Environmental Science and Technology (held from August 19-22, 2006 at Wyndham Greenspoint Hotel, Houston, Texas, USA.
- (iii) Gordon Research Conference on the "Metabolic Basis of Ecology and Evolution" July 9-14, 2006 held at Bates College, Maine, USA.
- (iv) Seminar entitled "Evolution of metabolic pathways for synthesis of compatible solutes in plants". August 29, 2006 Department of Chemistry, Georgia State University, Atlanta, USA.
- (v) Meeting for collaboration on Mercury detoxification and application of *mer* genes, August 30, 2006, Department of Genetics, University of Georgia, Athens, USA.
- (vi) Gordon Research Conference on "CO₂ Assimilation in Plants: Genome to Biome" September 11-16, 2005 held at Aussois (France).
- (vii) Meeting on "Patenting the *codA* gene as a Selection Marker", September 17, 2005. Entelechon

GmbH, Bioinformatics, Regensburg, Germany.

- (viii) International Conference on "Biotechnology for Drought and Salinity Tolerance in Plants" from March 28-31, 2005 at Islamabad, Pakistan.
- (ix) 13th International Photosynthesis Congress. August 29-September 03, 2004, Montreal, Canada.
- (x) Gordon Research Conference on "Mitochondria & Chloroplast" July 25-30, 2004 held at Kimball Union Academy, Meriden, New Hampshire, USA.
- (xi) Meeting for collaboration on Use of antibodies against specific cell wall polysaccharides. July 20-24, 2004 Athens Complex Carbohydrate Research Center, University of Georgia, Athens, USA.
- (xii) Meeting for collaboration on Molecular mechanisms associated with abiotic stress tolerance. July 9-20, 2004, Texas A & M University, College Station, Texas, USA.
- (xiii) Gordon Research Conference on "Metabolic Basis of Ecology and Evolution" July 4-9, 2004 held at Bates College, Lewiston, Maine M.E., USA.
- (xiv) Gordon Research Conference on "Salt & Water Stress in Plants" June 13-18, 2004 held at Hong Kong.
- (xv) Gordon Research Conference on "CO₂ Fixation & Metabolism in Green Plants" August 11-16, 2002 held at Massachusetts, USA.
- (xvi) Meeting for Collaboration under Indo-Swiss Collaboration in Biotechnology Program, September 10-12, 2000 at Bioenergetics lab, University of Geneva, Geneva, Switzerland.
- (xvii) Gordon Research Conference on "Salt and Water Stresses in Plants" in August 20-25, 2000 held at Tilton, NH, USA.
- (xviii) 61st Annual Meeting of the Botanical Society. Sep. 18-20, 1997. Chiba, Japan.
- (xix) Plant Biology' 97, August 2-7, 1997. Vancouver, BC, Canada.
- (xx) Photosynthetic Membranes: Biogenesis and Adaptation. July 31-Aug. 2, 1997. University of British Columbia, Vancouver, B.C., Canada.
- (xxi) 36th Symposium of The Japanese Society of Plant Physiologists. March 27-29, 1996. Khagoshima, Japan.
- (xxii) Seminar on "Somaclonal variants with superior capacity to fix carbon dioxide" July 21, 1995 at National Renewable Energy Laboratory, Golden, Colorado, USA.
- (xxiii) 22nd Annual Meeting of the Plant Growth Regulator Society of America. July 18-20, 1995, Minneapolis, Minnesota, USA.
- (xxiv) 15th International Conference on Plant Growth Substances. July 14-18, 1995. Minneapolis, Minnesota, USA.
- (xxv) RITE's Workshop. October 31-November 02, 1994. Research Institute for Innovative Technology for the Earth, Kyoto, Japan.
- (xxvi) Seminar on "Significance of proline accumulation in plants under abiotic stress" October 28-29, 1994, at National Institute of Basic Biology, Okazaki, Japan.
- (xxvii) Second International Conference on Carbon dioxide Removal. October 24-27, 1994. Kyoto, Japan.
- (xxviii) Twelfth International Plant Nutrition Colloquium. September 21-26, 1993, The University of

Western Australia, Perth, Australia.

- (xxix) International Symposium on Zinc in Soils and Plants, held from September 27-28, 1993; and 33rd Annual General Meeting of Australian Society of Plant Physiologists. September 27-30, 1993. The University of Western Australia, Perth, Australia.
- (xxx) XIIth Annual Symposium in Plant Physiology on Plant Reproduction: From Floral Induction to Pollination, January 12-14, 1989. University of California, Riverside, USA.
- (xxxi) Fourth International Symposium on Post-harvest Physiology of Ornamental Plants. March 20-25, 1988. Herzliya, Israel.

Research Projects (Major Grants/Research Collaboration)

A1. Projects completed at University of Delhi

- 1) Title of the Project : Development of Transgenic chickpea with Enhanced Tolerance to Drought/Frost using *codA* Gene
Funding Agency : ISCB, Department of Biotechnology (Govt. of India) and Swiss Agency for Development and Co-operation (Govt. of Switzerland)
Duration : 2004- 2008
Grant for our group : ~Rs.73 Lacs
- 2) Title of the Project : Production and Characterization of Osmotic Stress Tolerant Transgenic Plants of *Brassica juncea* with Potential to Synthesize Glycinebetaine
Duration : 2001-2004
Funding Agency : Department of Biotechnology (Govt. of India)
Grant : Rs. 23 Lacs
- 3) Title of the Project : Enhancing Tolerance of Sorghum to Abiotic Stresses through Genetic Manipulation
Funding Agency : Andhra Pradesh-Netherlands Biotechnology Programme Office, Hyderabad
Duration : 2001-2007
Grant : ~Rs. 22 Lacs
- 4) Title of the Project : Enhancing Tolerance To Drought, Freezing And Low Temperature In Chickpea Through Genetic Transformation
Funding Agency : ISCB, Department of Biotechnology (Govt. of India) and Swiss Agency for Development and Co-operation (Govt. of Switzerland)
Duration : 2001-2004
Grant for our group : ~Rs. 78 Lacs
- 5) Title of the Project : Net Work activities of ISCB Pulse Network projects
Funding Agency : ISCB, Department of Biotechnology (Govt. of India) and Swiss Agency for Development and Co-operation (Govt. of Switzerland)
Duration : 2001-2006
Grant for our group : ~Rs. 17 Lacs

6) Title of the Project : Enhancement in Abiotic Stress Tolerance Plants of *Brassica juncea* through genetic manipulation.
Funding Agency : Department of Biotechnology (Govt. of India)
Duration : 2001-2004
Grant : Rs. 9 Lacs

A2. Projects completed at Jamia Millia Islamia

1) Title of Project : Salt stress induced alteration in the activities of ribulose 1,5-bisphosphate carboxylase/oxygenase in *Brassica juncea*.
Duration : 1998-2002
Funding Agency : Department of Science and Technology (Govt. of India)
Total Approved cost of the Project (in Rs.) : ~ 40,00,000

2) Title of Project : Production and characterization of salt-tolerant transgenic plants with potential to overproduce compatible solutes.
Duration : 1997-2000
Funding Agency : Department of Science and Technology (Govt. of India) under India-Japan Cooperative Science Program
Total Approved cost of the Project (in Rs.) : 9,60,000

3) Title of Project : Micropropagation of fast growing tree species with high CO₂ assimilating potential and their establishment through mycorrhizal association in barren lands
Duration : 1993-1996
Funding Agency : Research Institute of Innovative Technology for the Earth, Kyoto, Japan (Govt. of Japan)
Total Approved cost of the Project (in Rs.) : 21,43,225

4) Title of Project : Isolation and characterization of sodium chloride tolerant cell-lines in *Origanum*.
Duration : 1990-1994
Funding Agency : Department of Science and Technology (Govt. of India)
Total Approved cost of the Project (in Rs.) : 3,51,526

5) Title of Project : Cell and organ expansion in relation to flower growth
Duration : 1989-1992
Funding Agency : University Grants Commission (Govt. of India)
Total Approved cost of the Project (in Rs.) : 2,27,250

Awards and Distinctions

- i) National Bioscience Award for Career Development (2000).
- ii) Short term Japanese Society for the Promotion of Science (JSPS) Fellowship (January 15, 1996-March 30, 1996).
- iii) Short term Japanese Society for the Promotion of Science (JSPS) Fellowship (December 15, 1996-

March 14, 1997).

- iv) Long term Japanese Society for the Promotion of Science (JSPS) Fellowship (April 01, 1997 to January 20, 1998).
- v) Indian Coordinator for Indo-Swiss Collaboration in Biotechnology Pulse Network projects {Jointly supported by the Department of Biotechnology (Govt. of India) and Swiss Agency for Development and Co-operation (Govt. of Switzerland)} (2001-2006)}.
- vi) First from India to be awarded an internationally competitive research grant from Research Institute for the Innovative Technology for the Earth (RITE), Ministry of International Trade and Industry (MITI) (Govt. of Japan), Kyoto (Japan).

Association With Professional Bodies

1. *Editing*

Member, Editorial Board, Phytomorphology, International Society of Plant Morphologists, Delhi

Member, Editorial Board, Physiology & Molecular Biology of Plants, Prof. H.S. Srivastava Foundation for Science and Society, Lucknow.

2. *Reviewing*

Referee for number of International scientific journals which include Environmental & Experimental Botany, New Phytologist, Physiologia Plantarum, Plant Science, Physiology & Biochemistry of Plants, Plant Biology, International Journal of Phytoremediation, Ecotoxicology & Environmental Safety, Chemosphere, Journal of Hazardous Materials, Biologia Plantarum, Plant & Soil, Acta Physiologiae Plantarum, Toxicological & Environmental Chemistry, European Journal of Soil Biology, Plant Cell Tissue & Organ Culture, Journal of Plant Breeding and Crop Science, Current Science, Physiology & Molecular Biology of Plants, Indian Journal of Plant Physiology, Indian Journal of Experimental Biology, Indian Journal of Biotechnology, Phytomorphology.

Referee for some research project proposals submitted to DST, DBT, CSIR, DRDO, MoEF etc.

3. *Advisory*

As an Expert and/or a Member of various Committees and Boards listed in the following section.

4. *Committees and Boards*

Expert, Uttarakhand Public Service Commission (2014).

Expert, The interface meeting with candidates under the Scheme of Post Doctoral Fellowship for Women, University Grants Commission (Govt. of India) (2013).

External Expert for evaluating a mega program "Development of specific technologies to meet the fresh food requirements of armed forces under different operational environments" undertaken by

DRDO Life Science Institutes, DIHAR (Leh), DIBER (Haldwani) and DRL (Tezpur) (2011 onwards).

External Member, School Board, School of Earth Sciences & Natural Resource Management, Mizoram University, Aizwal (2010 onwards).

Expert, Selection Committee for Recruitment and Assessment of Scientists, DRDO Life Science Laboratories, Ministry of Defence (Govt. of India) (2004 onwards).

Expert, CSIR SRF/RA Selection Committee in the area of Agro-, Bio-, Physics-, Chemical and Food Technology (Sub. Code: ENG/42) (2007 onwards).

Expert, CSIR Senior Research Associateship (Scientists' Pool Scheme) (2004-2007).

Expert, Environmental Sciences, Various committees of UGC NET Examination (2008 onwards)

Expert, Environmental Sciences, Public Service Commission, Uttarakhand (2005 onwards)

Expert Member, Expert Panel on Life Sciences and Biotechnology of the Knowledge Management System, National Research Development Corporation, Govt. of India Enterprise, New Delhi (2007 onwards)

Expert, Environmental Science/Ecology, Expert Committee for evaluating suitability of Major and Minor Research Projects (submitted by teachers across India) for funding by University Grants Commission, New Delhi, 2007.

Chancellor's Nominee, Environmental Sciences, Sambalpur University, Sambalpur, Orissa

Expert, Selection Committees, Environmental Sciences, The Babasaheb Bhimrao Ambedkar University (Central University), Lucknow

Expert, Selection Committees, Biotechnology and Botany at Jamia Hamdard, New Delhi

Expert, Selection Committees, Environmental Sciences, MDU, Rothak

Expert, Selection Committee for Recruitment and Promotion of Scientists, Ministry of Environment and Forest (Govt. of India)

External Member, The Special Committee of the School of Environmental Sciences, Jawaharlal Nehru University, New Delhi

External Expert of Postgraduate Board of Studies in Biotechnology, MDU, Rothak

External Expert of Postgraduate Board of Studies in Environmental Sciences, MDU, Rothak

President's Nominee, Academic Council, TERI School of Advanced Studies, New Delhi

External Expert of Postgraduate Board of Studies, High Altitude Plant Physiology, Hemwati Nandan Bahuguna Garhwal University, Srinagar, Garhwal

External Member, Post-Graduate Board of Studies, Department of Botany, Kurukshetra University, Kurukshetra

Expert for selection of Teachers (Lecturers and Readers) in Botany, Biochemistry, Toxicology and Environmental Sciences for Common Wealth Fellowship and DAD Fellowships through University

Grants Commission, New Delhi.

Expert for selection of research students for undergoing higher Studies (Master, Doctoral and Post Doctoral Studies) under various International Programmes under the MHRD, Govt. of India in the field of Environmental Sciences.

Indian Expert - video conference between Moscow and New Delhi entitled "Indian and Russian Experience in Environment Protection" held by Russian Information Centre in Delhi, September, 25, 2008.

Expert, Curriculum Development Committee, appointed by the University of Delhi, to visit and restructure Environmental Science course for Sherubtse College, Kanglung, Bhutan, 2006.

Member, Board of Studies, Department of Biosciences, Jamia Millia Islamia (August, 1987-January, 2001)

Member, Inspection Commission, constituted to inspect & report on the infrastructure facilities made available at DIPAS and INMAS for registering students for Ph.D. in Life sciences (FT/PT), Bharathiar University, Coimbatore, 2008.

Convener of an Inspection Commission, constituted to inspect & report on the infrastructure facilities made available at DIPAS for the grant of permanent increase in intake for Ph.D. in Life sciences (FT/PT), Bharathiar University, Coimbatore, 2010.

External Expert, various peer review meetings related to recommendation/sanction of research grants, to improve infrastructure, to build Ultra modern greenhouse etc. in various DRDO laboratories such as DRDE, Gwalior; DIHAR, Leh; DIPAS, Delhi; INMAS, Delhi (Since 2003 onwards).

Member, Academic Council, University of Delhi (January, 2001- January, 2004; January 2007-April 2008).

Member, Faculty Committee, Faculty of Science, University of Delhi (January, 2001 onwards)

Member, Board of Studies, Faculty of Science, University of Delhi (January, 2001 – April, 2008)

Member, University Court, University of Delhi (January, 2001 onwards)

5. *Memberships*

- (i) Life Member (elected) of "Plant Tissue Culture Association (India)".
- (ii) Life member of "Society for Plant Biochemistry and Biotechnology".
- (iii) Life Member of International Society of Plant Morphologists.
- (iv) Life member of "Indian Chapter of the International Centre for Theoretical Physics".
- (v) Life Member of Prof. H.S. Srivastava Foundation for Science and Society.
- (vi) Life Member of Delhi University Botanical Society.

Other Activities

Subject Expert for three programmes on “Plasma Membrane: Structure and Function” for UGC Nation wide Educational Telecast.

List of Patents Granted:

1. Selection marker system and method for screening a choline tolerant plant cell. US 8,101,410B2 24.01.2012.
2. Selection marker system and method for screening a choline tolerant plant cell. EP 1795611B1, 02.5.2012.
3. Selection marker system and method for screening a choline tolerant plant cell. US 20090170093A1, 02.7.2009.
4. Selection marker system and method for screening a choline tolerant plant cell. WO/2007/065697, 14.6.2007.
5. Selection marker system and method for screening a choline tolerant plant cell. EP 1795611A1, 13.6.2007.

Owns following Full length functional genes:

1. Gupta S., Sharmila P., Pardha Saradhi P. 2004. Extreme Variation in the Amino Acid Sequence of *Arthrobacter globiformis* (STRAIN=MTCC 944) Choline Oxidase from an Earlier Japanese Report. Submitted (APR-2004) to the EMBL/GenBank/DDBJ databases. AY589052.
2. Saradhi P.P., Elangbam J., Sharmila P. 2004. Isolation and characterization of mannitol-1-phosphate dehydrogenase gene from *Halobacterium salinarium*. Submitted (JAN-2004) to the EMBL/GenBank/DDBJ databases. AY523631.
3. Elangbam J., Sharmila P., Saradhi P.P. 2004. Isolation and characterization of mtID gene from an Indian strain of *Escherichia coli*. Submitted (JAN-2004) to the EMBL/GenBank/DDBJ databases. AY523630.