

Curriculum Vitae

1. PERSONAL INFORMATION

Name: DR. HAMID RASHID
Date of Birth: January 2, 1959
Nationality: Pakistani
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Issues From: Islamabad Valid upto 25th Dec. 2014
Languages: Urdu, English and Japanese
Present Address: Professor/Programme Coordinator
Mohammad Ali Jinnah University,
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2. ACADEMIC RECORDS

- **Post -Doctoral Fellowship**
At International Rice Research Institute, Manila, Philippines from May to July in 2000 on the title "Construction of Binary Vector for Xa21 gene."
- **PhD**
In the field of Plant Biotechnology (Plant Genetic Engineering) from Faculty of Agriculture Tohoku University Sendai, Japan in 1996. The title of thesis was "Studies on Tissue Culture and Genetic Transformation of Rice (*Oryza sativa* Sub species *Indica*) and *Moricandia arvensis*"
Pioneering in developing method of *Agrobacterium* mediated transformation for indica rice which is widely used in no. of laboratories internationally.
- **M. Phil**
In Biochemistry/ Molecular Biology from Quaid-e-Azam University Islamabad, Pakistan in 1985.
The title of Thesis was "Studies on pyrophosphatases of *Lens esculentus* seeds (PARC Variety 18-12)".
- **M. Sc.**
In the field of Biological Sciences from Quaid-e-Azam University Islamabad, Pakistan in 1982

3. LANGUAGE COURSE

* Six months "Japanese Intensive Language Course" at Tohoku University, Sendai, Japan.

4. PROFESSIONAL EXPERIENCE

Professor/Program Coordinator

Working as Professor/ Program Coordinator in Bioinformatics Department Mohammad Ali Jinnah University, Islamabad from Dec 15th, 2007 to till date.

Programme Leader

Working as Programme Leader from December 2002 to 2007 at Agricultural Biotechnology Programme (IABGR), NARC, Islamabad

Job Assignment

- Execution and conduction of different research activities of the programme.
- Supervision of scientists working on different aspects of biotechnology in the programme.
- Human resource development.

Senior Scientific Officer

Worked as Senior Scientific Officer from February 2000 to December 2002 at Agricultural Biotechnology Programme (IABGR), NARC, Islamabad.

Job Assignment

- Planning and execution of research regarding plant genetic transformation through Agrobacterium in rice crop.
- Supervision of research scientists and Ph.D/M.Phil students of different universities working in the field of biotechnology.

Scientific Officer

Worked as Scientific Officer from October 1986 to February 2000 at Tissue Culture Lab, PARC, Islamabad.

Worked as Scientific Officer from February 1986 to October 1986 at Soil Microbiology Lab, PARC, Islamabad.

Job Assignment

- Conduction of tissue culture studies on commercially grown date palm cultivars.
- Monitoring of field planted invitro raised date palm plants.

5. Honors/ Awards/Membership

- Focal Point of Eco Biotechnology net work..
- Focal point of SARCC Biotechnology.
- Member of National Biotechnology Committee.
- Member of Institute Biotechnology Committee.
- Honorarium during 1989 on Date Palm Tissue Culture from Pakistan Agricultural Research Council, Islamabad (PARC), Pakistan.
- Awarded a cash prize of Rs. 10,000/- along with a commendation certificate and a Gold Medal was the Hamdard Foundation in recognition of the outstanding research achievements of Date Palm Tissue Culture.
- Co-author in a poster presentation entitled An Improved Method for *in vitro* Multiplication of *Solanum tuberosum* L. in 1st International Symposium on Contemporary Biology held at University Grants Commission Islamabad from Nov. 7-10, 1991 and won the first prize.

- Awarded a shield and a commendation certificate for successful field trials of tissue culture raised date palm plants during 1990-1991 from PARC.

6. PARTICIPATION IN PROFESSIONAL COURSES

1. Post Graduate training course on Nuclear and other Advanced Techniques in Agriculture and Biological Research held at Nuclear Institute of Agriculture and Biology, Faisalabad from Nov 4-8, 1984.
2. Orientation, General Administration and Management Course held at Pakistan Agricultural Research Council (PARC) Islamabad from Dec. 17-31, 1987.
3. Second Regional Training Course on Recombinant DNA Techniques used in Plant Genetic Engineering held at Centre for Advanced Molecular Biology, Univ. of Punjab Lahore, Pakistan from 26th September to 15th October 1987.
4. International Course on Plant Tissue Culture and its Application to Date palm held at Wye College University of London sponsored by FAO of the United Nations from April 9-22, 1988.
5. Training Course on Statistical Software Package M.Stat at National Agricultural Research Centre, Islamabad from Jan 21-26, 1989.
6. A Laboratory Workshop on Identification of Cloned Gene Products held at Centre for Advanced Molecular Biology, University of Punjab, Lahore, Pakistan from Nov. 4-17, 1989.
7. National in-service training course on “Manpower planning and Economic Development” from 22-08-2000 to 02-09-2000 held at Pakistan Manpower institute Lahore, Manpower and overseas Pakistanis Division Islamabad.
8. Participated in Training course for the Project Directors 5-6 March 2004 at Government of Pakistan Planning and Development Division Pakistan Planning and Management Institute, Islamabad
9. Participation in Training course for the Plant Transformation and Detection of GMOs, 28th May -8th June 2006 at Syria.

7. PARTICIPATION IN NATIONAL/INTERNATIONAL CONFERENCES/WORKSHOPS/ SYMPOSIUMS

1. National/International Telecommunication on Plant Biotechnology held at National Agricultural Research Centre, Islamabad from August 16-19, 1990 and presented a paper
2. First National Biochemistry Symposium held at University of Karachi from March 6-9, 1991 and presented a paper.
3. International Symposium on Contemporary Biology held at University Grants Commission, Islamabad from Nov. 7-10, 1991 and presented a poster.
4. National Symposium on Status of Plant Pathology in Pakistan held at University of Karachi from Dec. 1991 and presented a paper.
5. Second International Symposium on New Genetical Approaches for Crop improvement held at Karachi organized by Atomic Energy Agricultural Research Centre, Tandojam from Feb 15-20, 1992 and presented a paper.
6. XV International Botanical Congress held at Yokohama, Japan from August 28- Sept. 3, 1993 and presented a

poster.

7. The NIAR/COE International Symposium "Dynamics of Plant Genome Structure and Function at Tsukuba Centre for Institutes Tsukuba, Japan from Oct 30-31.
8. National Conference on Plant Breeding at Kyoto University from Nov. 4-5 1995 and presented a paper.
9. National Conference on Plant Breeding at Ibraki University from April 1-3, 1995 and presented a paper.
10. National Botanical Conference at Peshawar University from Oct. 20-22, 1998 and presented a paper.
11. Workshop on the Improvement of Date Palm Cultivation and Processing at Pakistan Agricultural Research Council (PARC) Islamabad from Feb 15-16, 1998
12. Workshop to review the first national report of Pakistan on the implementation of the convention on biological diversity at Margalla Motel Islamabad from Sep. 20-21, 1999.
13. 2nd National Symposium on Practical Applications of Plant Tissue and Genetic Engineering at National Agricultural Research Centre (NARC), Islamabad from 1-3rd June, 1999.
14. Second National Conference of Plant Pathology from Sep 27-29, 1999 held at Department of plant Pathology University of Agri. Faisalabad.
15. Participated in International Seminar on Prospects for Saline Agricultural from 10-12, 2000 at Islamabad Pakistan.
16. International Symposium of Mountains of Pakistan – Protection, potential and prospects from Dec 17 – 19, 2002 at Holiday Inn, Islamabad and presented a paper.
17. Participated in Annual Rice Meeting from 9-10, 2002 at CSI, NARC, Islamabad and presented a paper.
18. 1st National conference of biology from March 28-30, 2002 held at Government College, Lahore and presented a paper.
19. International Science Conference from Sep. 17-19, 2002 held at University of Arid Agriculture, Rawalpindi.
20. Second meeting of National Curriculum Revision Committee on Biochemistry held at HEG, Regional Centre, Lahore from March 26-28, 2002.
21. Participated in Golden Jubilee Celebration of Pakistan Academy of Sciences from December 13-15, 2002.
22. Participated in 4th National Conference of Plant Pathology from Oct. 14-16, 2003 held at University of Arid Agriculture, Rawalpindi.
23. Participated in International Conference on Biodiversity from Sep. 8-10, 2003 held at higher Education Commission Islamabad, Organized by Biology Deptt. Q. A. Univ. Islamabad and presented a paper.
24. Participated in 7TH PSBMB International Conference on Current Trends in Biochemistry and Molecular Biology from April 2-5, 2003 held at Biochemistry Department, Punjab Univ. Lahore and presented a poster.
25. Participated in 8th National Conference of plant Scientists, from February 24-28, 2003 at Karachi and presented a paper.
26. Participated in 3rd reunion of former students in Japan from the South-West Asian countries during July 14-19, 2003 at Tokyo, organized by MOFA Japan.

27. Participated in International Workshop on wealth generation through research from December 03,2003 Organized Jointly by Pakistan Science Foundation, National University of Science & Technology
28. Participated in forgoing partnerships for sustainable Development: The road from Johannesburg Water, Energy, Health, Agriculture, Biodiversity at National Library of Pakistan, Constitution Avenue, Islamabad, from Feb. 6 – Feb. 8, 2003.
29. Participated in 2nd International Symposium on Biotechnology, January 16-19, 2004 at Institute of Biotechnology & Genetic Engineering University of Sindh Jamshoro and presented a paper
30. Participated in FSC&RD/AKRSP/DOA, NA's Seminar/work shop on "Seed potato crop management in Northern Areas, Gilgit" from April 8-9, 2004 and presented a paper.
31. Participated in National Conference on 'Sustainable for Rural Development & Poverty Alleviation' 19th & 20th May 2004, at National Library of Pakistan, Islamabad
32. Participated in Ist National Conference on Agricultural Biotechnology, 16-18 August, 2004 at Nathiagali organized by National Commission on Biotechnology and presented a paper
33. Participated in 2nd National conference of Biology, 22-24 April 2004 at Govt. College University Lahore. and presented a paper.
34. Participated in International Symposium on "Medicinal Plants Linkages beyond National Boundaries" on September 7-9, 2004 at National Agricultural Research Center
35. Invited a lecture International Training Workshop on Biomolecular Separation Techniques. Sponsored by Higher Education Commission, Islamabad July 10-15, 2006. Entitled "Advances in tissue culture Techniques" at University of Arid Agriculture Rawalpindi.
36. Participated in "1st International Symposium on Biotechnology; Current Trends" on 2-4 July, 2008 at University of Malakand and presented an invited lecture on Bioinformatics and its Applications in Biotechnology.
37. Participated in "1st International Symposium on Biotechnology; Current Trends" on 2-4 July, 2008 at University of Malakand and presented an invited lecture on Bioinformatics and its Applications in Biotechnology.
38. Participated in "Conference on Advances in Biochemistry and Molecular Biology" at Pir Mehr Ali Shah Arid Agriculture University Rawalpindi and chaired the session on Genomics and Bioinformatics and session on Transgenic Plant Technology.

8. INVITED LECTURE

- Invited lecture at NISTE
- Invited lecture at NISTE
- Invited lecture at Horticulture Society Islamabad
- Invited lecture on "Role of biotechnology approaches in improvement of horticultural crops" at Islamabad Horticultural Society.
- Delivered a National Seminar on Role of Biotechnology on June 4,2004 in Agriculture at National Agricultural Research Center Islamabad

10. TEACHING EXPERIENCE

Following course are taught at BS, MS and PhD level from Spring 2007, Fall 2007 and Spring 2008.

BS Courses:

- **Molecular Biology.**
- **Genetic Engineering.**
- **Cell and Tissue Culture.**
- **Introduction to Biotechnology.**
- **Introduction to Bioinformatics.**
- **Applied Biotechnology.**

MS and PhD Courses:

- **Advanced Molecular Biology.**
- **Applied Biotechnology.**
- **Macro Molecular Structure Synthesis and Regulation.**

9. PUBLICATIONS

i) Impact factors

CHAPTER IN BOOK

1. Toriyama, K., Tanabe, M., and **H. Rashid** (2001). Transgenic Moricandia. In: Biotechnology in Agriculture and Forestry, vol. 48, Transgenic Crops III (ed. By Y.P.S. Bajaj). Springer- Verlag Berlin Heidelberg, P.352- 358.

JOURNALS PUBLICATION (Impact Factor)

2. Rafique, M. Z., **H. Rashid.**, M. F. Chaudhary., Z. Chaudhry and N. M. Cheema. 2010. Study on callogenesis and organogenesis in local cultivars of rice (*Oryza sativa* L.). Pakistan Journal of Botany , June issue
3. Chaudhry, Z., **H. Rashid** and H. Ahmed. (2010) An Improved Agrobacterium Mediated Transformation in Tomato Using Hygromycin as a Selective Agent. African Journal of Biotechnology , February issue
4. Manzoor, S., **H. Rashid.**, Z. Chaudhry and M. Ismail. (2010). Protien structure prediction of UROS gene in congenital erytheiopoitic porphyria. BMC Bioinformatics (submitted).
5. Zahra, S., **H. Rashid** and Z. Chaudhry (2010). Residual Comparison of a Novel Protein Causing Visual Disparity in Humans Based Upon Secondary Structure Using Bioinformatics Tools.Pakistan journal of Zoology
6. Bano, R., M. H. Khan., R. S. Khan., **H. Rashid** and Z. A. Swati. 2010. Development of an efficient regeneration protocol for three genotypes of *Brassica juncea*. Pakistan Journal of Botanty, 42(2). February Issue.

7. Afzal, A., **H. Rashid**., M. H. Khan., Z. Chaudhry and S. A. Malik. 2010. High frequency regeneration system optimization for wheat cultivar inqilab-91. Pakistan Journal of Botany. 42(3). June Issue.
8. Hussain, Z., M. H. Khan., R. Bano., **H. Rashid** and Z. Chaudhry. 2010. Protocol optimization for efficient callus induction and regeneration in thee Pakistani rice cultivars. Pakistan Journal of Botany. 42(2).
9. **H. Rashid**, M. H. Khan and Z. Chaudhry. (2009). Effect of Age of Embryogenic Callus on Plant Regeneration in Local Cultivars of Wheat (*Triticum aestivum*). Pakistan Journal of Botany. 41(6): 2801 - 2806.
10. Bashir, M. A., M.A. Anjum, Z. Chaudhry and **H. Rashid**. (2009). Response of Jojoba (*Simmondsia chinensis*) Cuttings to Various Concentrations of Auxins. Pakistan Journal of Botany 41(6) December Issue.
11. Chaudhry, Z., S. Abbas, A, Yasmin and **H. Rashid**. (2010) Tissue culture studies in tomato (*Lycopersicon esculentum*) var. moneymaker. Pakistan Journal of Botany 41(6): 2831 - 2840.
12. Nyla J., B. Mirza., Z. Chaudhary., **H. Rashid** and M. Gulfraz. (2009). Study of the factors affecting *Agrobacterium* mediated gene transformation in tomato (*Lycopersicon esculentum* Mill.) cv. Riogrande using rice chitinase (*cht-3*) gene. Pakistan Journal of Botany. 41(5): 2605-2614, 2009.
13. Ali, Amjad., M. H. Khan., R. Bano., N. I. Raja., **H. Rashid** and Z. Chaudhry (2009) Screening of Pakistani Rice (*Oryzae sativa*) cultivars against *Xanthomonas oryzae* pv. *Oryzae*. Pakistan Journal of Botany. 41(5): 2595-2604, 2009.
14. Khan, S.A, **H. Rashid**, M. Fayyaz Chaudhry, Z. Chaudhry, Z. Fatima and S.U Siddiqui. (2009). Effect of Cytokinins on Shoot Multiplication in three elite sugarcane varieties. Pakistan Journal of Botany, 41(4):1651-1658
15. Khan, S.A, M. Zia., M. Fayyaz Chaudhry., Z. Hanif., Z. Chaudhry and **H. Rashid**. (2009). Callus induction and regeneration in elite sugarcane cultivar HSF-240. Pakistan Journal of Botany, 41(4):1645-1649.
16. Amber Afroz, Zubeda Chaudhry, Rasheed Khan and **Hamid Rashid** (2009). Effect of GA3 on regeneration response of three tomato cultivars (*Lycopersicon esculantum* M). Pakistan Journal of Botany. 41(1):143-151.
17. Khan S A; **H Rashid**; M. F Chaudhary; Z Chaudhry and A Afroz (2008). Rapid micropropagation of three elite Sugarcane (*Saccharum officinarum* L.) varieties by shoot tip culture. African Journal of Biotechnology, 7(13): 2174-2180
18. Bashir, M, A; M. A. Anjum and **H. Rashid** (2008). In Vitro propogation of some promising genotypes of jojoba (*Simmondsia chinensis*). African Journal of Biotechnology, 7(21): 3878–3886.
19. Munir, M; **H. Rashid**; M. Rauf; Z. Chaudhry and M.S.Bukhari (2008). Callus formation and plantlet regeneration from hypocotyl of Brassica Napus by using different media combinations. Pak. J. Botany, 40(1): 309-315
20. Muhammad .A, **H. Rashid**, I. Hussain and S.M.S. Naqvi (2007). Proliferation rate effects of BAP and Kinetin on banana (*Musa* spp.) cv. Basrai. Hort Science. 42(5): 1253-1255
21. Asghar, A., **H. Rashid**, M. Ashraf, Z. Chaudhry and M. H. Khan. (2007). Improvement of basmati rice against fungal infection through gene transfer technology. Pakistan J. Botany, 39(4): 1277-1283
22. Khan, M. H., **H. Rashid**, Z. A. Sawati and Z. Chaudhry. (2007). *Agrobacterium*

- mediated transformation to build resistance against bacterial blight in rice. Pakistan J. Botany, 39(4): 1285-1292
23. Chaudhry, Z., A. Afroz and **H. Rashid**. (2007). Effect of variety and growth regulators on callus proliferation and regeneration of three tomato cultivars (*Lycopersicon esculentum* M.). Pakistan J. Botany, 39(3): 857-869.
 24. Chaudhry, Z., S. Abbas, A. Yasmin and **H. Rashid**. (2007) Tissue culture studies in tomato (*lycopersicon esculentum*) var. moneymaker. Pakistan J. Botany (Accepted)
 25. Noor, A., Z. Chaudhry, **H. Rashid** and B. Mirza. (2006) Evaluation of resistance of rice varieties against bacterial blight caused by *Xanthomonas Oryzae* pv. *Oryzae*. Pakistan J. Botany, 38(1): 193-203.
 26. Hussain, I., Z. Chaudhry, A. Muhammad, R. Asghar, S.M.S. Naqvi and **H. Rashid**. (2006) Effect of chlorocholine, sucrose and BAP on *in vitro* tuberization in potato (*Solanum tuberosum*). Pakistan J. Botany, 38(1): 275-282.
 27. Noor, A., **H. Rashid**, Z. Chaudhry and B. Mirza. (2005) High frequency regeneration from *scutellum* derived calli of basmati rice cv. Basmati 385 and super basmati. Pakistan J. Botany, 37(3): 673-684
 28. Hussain, I., A. Muhammad, Z. Chaudhry, R. Asghar, S.M. S. Naqvi and **H. Rashid**. (2005) Morphogenic potential of three potato (*Solanum tuberosum*) cultivars from diverse explants, a prerequisite in genetic manipulation. Pakistan J. Botany, 37(4): 889-898.
 29. Jabeen, N., Z. Chaudhry, **H. Rashid** and B. Mirza. (2005) Effect of genotype and explant type on *in vitro* shoot regeneration of tomato (*Lycopersicon esculentum* Mill). Pakistan J. Botany, 37(4): 899-903
 30. Saqlan, S.M. N., R. Sultana and **H. Rasheed**. (2005) Tissue culture studies in *Oryza sativa* L. cvs. Basmati 385 and Super Basmati. Pakistan J. Botany, 37(4): 823-828
 31. Muhammad, A., I. Hussain, S.M.S Naqvi and **H. Rashid** (2004). Banana plantlet production through tissue culture. Pakistan J. Botany, 36(3) "617-620".
 32. Malik S.M. **H. Rashid**, T. Yasmin and N. M. Minhas (2004). Plant regeneration by somatic embryogenesis from callus of mature seed explants of bread wheat (*Triticum aestivum* L) Pakistan J. Botany 36(3) "629-634"
 33. Khan, M. R., Ansar M., **H. Rashid** and Z. Chaudhry (2003). High frequency shoot regeneration and *Agrobacterium*-mediated DNA transfer in Canola (*Brassica napus* L.). Pl. Cell Tiss & Org. Cult. 75: 223-231.
 34. Quraishi A., I. Hussain, M. Ahmed, **H. Rashid** and M. Latif (1997): Sustained multiplication of long term embryogenic cultures of date palm and their field performance: Pak. J. Bot. 19(1): 135-141.
 35. **Rashid, H.** S. Yokoi, K. Toriyama and K. Hinata. (1996). Transgenic plant production mediated by *Agrobacterium* in *Indica* rice. Plant Cell Reports, 15:727-730.
 36. **Rashid, H.**, K. Toriyama and K. Hinata. (1996). Transgenic plant production from leaf discs of *Moricandia arvensis* using *Agrobacterium tumefaciens*. Plant Cell Reports, 15: 799-803.
 37. Rehman, A., **H. Rashid**, A. Quraishi and I. John (1988). Effect of GA₃ on shoot proliferation in different date palm varieties. Pakistan J. of Bot. 20(2): 221-225.

ii) HEC recognized Journals

1. Bashir, M.A., H. Rashid and M.A. Anjum. 2007b. *In vitro* shoot initiation from nodal explants of jojoba (*Simmondsia chinensis*) strains. *Biotechnology*, 6: 165 - 174.
2. Bashir, M.A., H. Rashid and M.A. Anjum. 2007c. *In vitro* shoot multiplication of six promising strains of jojoba (*Simmondsia chinensis*). *Biotechnology*, 6: 309 - 315.
3. Bashir, M.A., M.A. Anjum and H. Rashid. 2007d. *In vitro* root formation in micropropagated shoots of jojoba (*Simmondsia chinensis*). *Biotechnology*, 6: 465-472.
4. Khan, S.A, H. Rashid, M. Fayyaz Chaudhry and Z. Chaudhry (2007). Optimization of explant sterilization condition in sugarcane cultivars. *Pakistan Journal of Agricultural Research*. 20 (3-4):119-123.
5. Raja, N. I., H. Rashid., A. Bano., and Z. Chaudhry (2008). Effect of growth regulators on enhanced plant regeneration from embryo derived calli of wheat (*Triticum aestivum* L.). *Pak. J. Agric. Res.* 21(1-2).
6. Malik S.I., **H. Rashid**, T. Yasmin and N.M. Minhas (2004). Effect of 2,4-dichlorophenoxyacetic Acid on callus Induction from Mature Wheat (*Triticum aestivum* L.) Seeds. *International Journal of Agriculture and Biology*.
7. **Rashid, H.**, A. Noor and Z. Chaudhry. (2006) Improvement of basmati rice for disease resistance by *Agrobacterium* mediated transformation. *Plant Tissue Cult.* 15(2): 165-174
8. Ullah, I., **H. Rashid** and M. R. Khan (2004). Establishment of tissue culture protocol in Brassica (*B. napus* L.). *Pakistan Journal of Biological Sciences* 7 (2): 277-278.
9. **Rashid, H.**, M. Saleem, Z. Chaudhry, S. T. Gilani and A. S. Qureshi (2004). Studies on developing a high regeneration from seed derived calli of rice (*Oryza sativa* L.), c.v. Super Basmati. *Pakistan J. of Biol. Sci.* 7(2):273-276.
10. Farooq M., **H. Rashid**, I. Ullah, Z. Chaudhry and K. B. Marwat (2004). Comparative tissue culture response of wheat cultivars and evaluation of regenerated plants. *Pakistan J. of Biol. Sci.* 7(3):406-408.
11. Chaudhry Z., D. Habib, **H. Rashid** and A. S. Qureshi (2004). Regeneration from various explants of *in vitro* seedling of tomato (*Lycopersicon esculentum*. L., c.v. Roma). *Pakistan J. of Biol. Sci.* 7(2):269-272.
12. Muhammad, A., I. Hussain, M. F. Akbar and **H. Rashid** (2003). Enhanced rate of multiplication of tissue cultured raised banana (*musa*) plants in the field. *Pakistan J. of Biol. Sci.* 6(6): 587-588.
13. **Rashid, H.**, S. N. Rahim, Z. Chaudhry, S. M. S. Naqvi (2003). Studies on genotype response to callus induction from three Basmati cultivars of rice (*oryza sativa* L.). *Pakistan J. of Biol. Sci.* 6(5): 445-441.
14. Baisakh, N.Datta, K. **Rashid,H.** Olive and Datta, S.K. (2002). *Agrobacterium tumefactions*-mediated transformation of an elite indica rice maintain rice IR 68899 B with a reconstructed T-DNA carrying multiple genes. *Rice Genetics News letter*, 17:122-125.
15. Khan, M.R., **H. Rashid** and A. Quraishi (2002). High frequency shoot regeneration from hypocotyl explants of *Brassica napus*. *Pl. Tiss. Cult.* 12(2).
16. Khan, M.R., **H. Rashid** and A. Quraishi (2002). Effects of various growth regulators on callus formation and regeneration in *Brassica napus* c.v. Oscar. *Pak. J. of Biol. Sci.* 5(6): 693-695.
17. Naqvi, S.M.S., T.Yasmin, **H. Rashid**, Z. Chaudhry and A. Quraishi (2002). Callus induction from seeds of zee mays Var. EV-2097. *Pakistan J. of Biol. Sci.* 5(9): 956-958.
18. Hussain, I. A. Muhammad, **H. Rashid** and A. Quraishi (2001). *In vitro* multiplication of gladiolus (*gladiolus crassifolius*). *Plant Tissue Culture* 11(2): 121-126.

19. **Rashid, H.**, K. Toriyama, A. Quraishi, K. Hinata and K.A. Malik (2000). An improved method for shoot regeneration from calli of *Indica* rice (Basmati). Pak. J. of Biol. Sci. 3(12): 2229-2231.
20. Ullah, I., **H. Rashid** and A. Quraishi (2000). Varietal response of wheat, *Triticum aestivum* L. to tissue culture and assessment of somaclonal variation. Pak. J. Biol. Sci. 3(10): 1598-1600.
21. Muhammad, A., I. Hussain, **H. Rashid** and A. Quraishi (2000). Enhanced *in vitro* multiplication of banana. Plant Tissue Cult. 10: 2. 111-117.
22. **Rashid, H.** S. Yokoi, K. Toriyama and K. Hinata. (1995). Production of transgenic plants mediated by *Agrobacterium* in *Indica* rice. Breeding Sci. 45 suppl. 1: 72.
23. **Rashid, H.**, K. Toriyama and K. Hinata. (1995). Transgenic plant production by *Agrobacterium* in *Moricandia arvensis*, a C3-C4 intermediate plant. Breeding Sci. 45 suppl. 2:
24. Khaliq, A., **H. Rashid**, A. Quraishi (2002). Tissue culture studies of tea (*camellia sinensis* L.). Pakistan J. Agric. Res., 17 (3): 297-301.
25. **Rashid, H.**, R. A. Ghani, Z. Chaudhry, S.M.S. Naqvi and A. Quraishi (2002). Effect of media, growth regulators and genotypes on callus induction and regeneration in (*Triticum aestivum*): Biotechnology, 1 (1). 49-54.
26. Tahir, F. **H. Rashid**, Z. Chaudhry and A. Quraishi (2002). Protein estimation of embryogenic calli as a monitor of salt tolerance. Pak. J. of Agri. Research. 17(1): 55-56.
27. Abbasi, F.M., **H. Rashid** and A. Quraishi (2000). Regeneration efficiency and embryogenic callus production of three cultivars of rice: Pak. J. Agric. Res. 16(2): 97-99.
28. Tahir, F., **H. Rashid**, Z. Chaudhry and A. Quraishi (2000). Protein estimation of embryogenic calli as a monitor of salt tolerance; Pak. J. Agric. Res. 16(34).
29. Quraishi, A., F. Tahir and **H. Rashid** (2000). Effect of NaCl on callogenesis of *Triticum aestivum* L. Pak. J. Agric. Res. 16(1): 28-29.
30. Quraishi, A., Z. Chaudhary, **H. Rashid** and P. Khaliq (1994). Pre-basic seed potato production through tissue culture. Pak. J. Agric. Res. 15(1) P. 8-13.
31. **Rashid H.**, and A. Quraishi (1994). Micropropagation of date palm (*Phoenix dactylifera* L. c.v. Dhakki) through tissue culture. Pak. J. Agric. 15(1): 1-7.
32. **Rashid H.**, and A. Quraishi (1994). Micropropagation of date palm (*Phoenix dactylifera* L. c.v. Dhakki) through tissue culture. Pak. J. Agric. 15(1): 1-7.
33. Chaudhry, Z., **H. Rashid** and A. Quraishi (1994). Somatic embryogenesis in *Citrus reticulata* L. c.v. Blanco. Pak. J. Agric. Res. 15(1): 14-18.
34. Hussain, I., **H. Rashid**, Z. Chaudhry, A. Quraishi, S.S. Arjumand and S. Amin (1994). Effect of explant source and age of seedlings on callus formation of carnation. Pak. J. Agric. Res. 15(1): 49-53.
35. Mahmood, S., **H. Rashid**, A. Quraishi, N. Iqbal, S.S. Arjumand and M.N. Malik (1994). Clonal propagation of strawberry through tissue culture. Pak. J. Agric. Res. 15(1): 54-59.
36. **Rashid, H.**, and A. Quraishi (1994). Biodiversity in wheat using tissue culture technologies. Pak. J. Agric. Res. 15(1): 78-82.
37. Aziz, A.N., **H. Rashid**, K. Sultana and A. Quraishi (1994). Heat shock proteins in embryogenic calli of wheat. Pak. J. Agric. Res. 15(1): 83-88.
38. Tahir, F., **H. Rashid** and A. Quraishi (1994). Biochemical studies in stressed cultures (sodium chloride) of wheat. Pak. J. Agric. Res. 15(1): 89-96.
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iii) Other Journals

1. **Rashid, H.**, and A. Quraishi (1987). Biotechnology a tool to generate variability in plants. Somaclonal variation. Sci. Tech. & Develop. 6(4): 38-41
2. **Rashid, H** and A. Quraishi (1990). *In vitro* manipulation of 2,4-D for callus induction and its subsequent regeneration in selected wheat and rice cultivars. Pak. J. Weed Sci. Res. 3(1): 26-30.
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4. Khan, M. R., **H. Rashid** and A. Quraishi (2002). Development of aseptic protocols in olive (*Olea europa* L.) cv. Pantaloon. Asian j. of Plant Sci. 2(3): 220-221.
5. Khan M.R., **H. Rashid** and A. Quraishi (2002). *In vitro* shoot development from juvenile cuttings of field-grown olive (*Olea europaea* L.) cv. Leccino. OnLine J. of Biol. Sci. 2(7): 438-440.
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iv) BOOKS

1. Quraishi, A. and H. Rashid (1994). Technical editors: Pakistan Journal of Agricultural Research, special issue on Biotechnology (49 technical papers on all aspects of biotechnology). P. 319

v) INTERNATIONAL PROCEEDINGS

1. **Rashid, H.**, Hussain, I and Chaudhry, Z. (2003). Application of Tissue Culture Techniques for Seed Potato Production in Northern Areas. Proceeding of an International Symposium held at Higher Education, Islamabad.Pakistan.Sep.8-10, 2003.PP.76-80.
2. Hussain, I., **H. Rashid** and A. Quraishi (2001). *In vitro* multiplication of date palm: In Second International Conference on Date Palm: 24-27th March, Al-Alin, U.A.E.

3. **Rashid, H.**, K. Toriyama, Z. Chaudhry, A. Quraishi and K.A. Malik (2000). Developing transgenic basmati rice by *Agrobacterium* mediated transformation: In: Fourth International Rice Genetics Symposium Oct. 22-27, IRRI, Philippines
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5. **Rashid, H.**, K. Toriyama, Z. Chaudhry, A. Quraishi and K.A. Malik (2000). Developing transgenic Basmati rice by *Agrobacterium* mediated transformation: In: Fourth International Rice Genetics Symposium Oct. 22-27, IRRI, Philippines.
6. Quraishi, A., **H. Rashid**, S.M.S. Naqvi, A. Muhammad, I Hussain and M. Bhatti (1999). Tissue culture: Research and development at the agricultural biotechnology institute, NARC: **In: Second National Symposium on Plant Tissue Culture and Genetic Engineering.** (June 1-3), Islamabad.
7. **Rashid H.**, A. Quraishi and F. Tahir (1998). Varietal response and the effect of explant source on embryogenic callus induction, growth and regeneration: In Syed Shamshad Mehdi (ed.). **New Genetical Approaches to Crop Improvement II:** p. 73-80.
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11. **Rashid, H.**, and A. Quraishi (1990). Establishment of long term embryogenic callus cultures for stress selection in wheat (*Triticum aestivum* L. c.v. Lyp-73, Pak-81 and Pavon-76). In: **International Conference on Current Developments in Salinity and Drought Tolerance of Plants.** Jan.7-11, AEARC Tandojam, Pakistan.
12. **Rashid, H.**, A. Quraishi and F. Tahir. (1992) Varietal response and the effect of explant source on embryogenic callus induction, growth and regeneration in wheat. Proceedings of the Second International Symposium held at Karachi, Pakistan, February 15-20, 1992
13. **Rashid, H.**, and A. Quraishi (1989). High frequency embryogenic callus induction and its regeneration in three wheat cultivars. In: Mujeeb Kazi and A.L.A.Sitch (eds) Review of Advances in Plant Biotechnology; Second International Symposium on Genetic Manipulation in Crops. Mexico, D.F. and Manila, Philippines. CIMMYT and IRRI. p.

14. **Rashid, H.**, and A. Quraishi (1989). A sexual embryogenesis in *Phoenix dactylifera* L. c.v. Dhakki. In: **International Symposium on Genetic Engineering and Biotechnology**, Jan.2-4, at University of Karachi, Karachi.
15. **Rashid, H.**, and A. Quraishi (1988). Factors affecting callus induction and plantlet regeneration in IR-6 and KS-282. In: Ihsan Ilahi and Karen Hughs (eds). **International Conference on In vitro Selection and Propagation of Economic Plants**. p. 126-127.

vi) **NATIONAL PROCEEDINGS**

1. **Rashid H.**, A. Faroz and Z. Chaudhry (2003) *Agrobacterium* mediated transformation in Basmati Rice for Bacterial Blight Resistance. In **8th National conference of Plant Scientists at Karachi from Feb. 24-28, 2003**.
2. Chaudhry Z., I. Feroz, M. Ayaz, **H. Rashid** and A. Quraishi (2000). Callus induction and regeneration from different varieties of tomato: *Lycopersicon* L. c.v. mill: **In: Fourth National Botanical Conference; Dec.14-16, Lahore**.
3. Hussain, I., **H. Rashid** and A. Quraishi (2000). Studies on *in vitro* multiplication and somatic embryogenic potential of long termed maintained cultures of date palm: **In: Fourth National Botanical Conference, Dec. 14-16, Lahore**.
4. Ullah, I., **H. Rashid** and A. Quraishi (1999). Genotype and hormonal effect on callus formation and regeneration in wheat (*Triticum aestivum* L.). **In: Second National Symposium on Plant Tissue Culture and Genetic Engineering**. (June 1-3), Islamabad.
5. **Rashid, H.**, A. Quraishi, Z. Chaudhry and I. Hussain (1999). Somatic embryogenesis, regeneration and field studies in date palm. **In: Second National Symposium on Plant Tissue Culture and Genetic Engineering**. (June 1-3), Islamabad.
6. Hussain, I., **H. Rashid** and A. Quraishi (1999). *In vitro* plantlet production from ten years old cultures through somatic embryogenesis in date palm (*Phoenix dactylifera*). **In: Second National Symposium on Plant Tissue Culture and Genetic Engineering**. (June 1-3), Islamabad.
7. Aziz, A.N., **H. Rashid**, A. Quraishi and K. Sultana (1992). Comparison on heat shock response in embryogenic calli and seedlings of wheat (*Triticum aestivum*) L. c.v. Lyallpur-73. In: **Proc. First National Biochemistry Symposium**. March 6-7, Univ. of Karachi: 209-213.
8. Chaudhry, A., **H. Rashid** and A. Quraishi (1992). Biochemical analysis of proteins from embryogenic and non embryogenic calli of *Citrus reticulata* L. **In: Proc. the First National Biochemistry Symposium**. March 6-7. **Univ. of Karachi**. p. 201-203.
9. **Rashid, H.**, A. Quraishi and A. Chaudhry (1991). Establishment of long term

embryogenic cultures and their subsequent regeneration in date palm. In: **First International Symposium on Contemporary Biology Nov. 7-10, U.G.C., Islamabad.**

10. **Rashid, H.,** A. Quraishi and Z. Chaudhary (1991). Development of protocols for quick propagation of superior cultivars of date palm. In: A. Ghaffar and S. Shahzad (eds). **Status of Plant Pathology in Pakistan.** p. 335-341.
11. Chaudhry, A., **H. Rashid** and A. Quraishi (1991). Virus elimination, meristem tip culture and *in vitro* multiplication of potato. In: A. Ghaffar and S. Shahzad (eds). **Status of Plant Pathology in Pakistan.** p.323-328.
12. Hussain, I., **H. Rashid,** Z. Chaudhary and A. Quraishi (1991). Mass propagation of healthy carnation through shoot tip culture. In: A. Ghaffar and S. Shahzad (eds). **Status of Plant Pathology in Pakistan.** p.329-333.
13. Quraishi, A and **H. Rashid** (1988). Date palm tissue culture; **In: Workshop on the Improvement of Date palm Cultivation and Processing;** Feb. 15-16, PARC, Islamabad. Pakistan.

10. TRAINING OFFERED (SUPERVISED THESIS RESEARCH)

S. No	Thesis Title	Degree	Student Name	University
YEAR 2008				
1	Understanding Co-Regulation of Gene Expression through Hierarchical Clustering.	BS (Hons)	Sadaf Aqil & Sabeena Humayun	Mohammad Ali Jinnah University, Islamabad.
2	PCAT: Principal Component Analysis Tool for gene expression analysis	BS (Hons)	Syeda Zahra Hassan & Wilayat Hussain	Mohammad Ali Jinnah University, Islamabad.
3	Protein structure prediction of UROS gene in congenital erythropoietic porphyria	BS (Hons)	Samra Manzoor	Mohammad Ali Jinnah University, Islamabad.
YEAR 2002				
1	Comparative callus induction studies in three Basmati cultivars of rice (<i>Oryza sativa</i> L.)	M. Sc.	Syeda Nazrat Rahim Bokhari	Univ. of Arid Agriculture, Rawalpindi
2	Effect of different concentration of 2,4-D on callus induction in <i>Triticum aestivum</i> L. CVs. Rawal 87 and Chakwal 97 and their	M. Sc. Biochemistry	Saima Muzaffar	Univ. of Arid Agriculture, Rawalpindi

	Comparison			
3	Effect of media, growth regulators and genotypes on callus induction and regeneration in wheat (<i>Triticum aestivum</i>)	M. Sc. Biochemistry	Rizwana Abdul Ghani	Univ. of Arid Agriculture, Rawalpindi
4	Callus induction and plant regeneration from seeds of <i>Zea mays</i> var. Ev-2097	M. Sc. (Biochemistry)	Tayyaba Yasmin	Univ. of Arid Agriculture, Rawalpindi
5	Special problem on tissue culture techniques for callus induction in rice (<i>O. sativa</i>) Varieties Basmati -370 and Basmati-385	B. Sc (Hons)	Hidayat Ullah	N.W.F.P Agricultural Univ. Peshawar
6	Effect of media and genotype on callus induction and regeneration in Wheat.	M. Sc (Biochemistry)	Miss Rizwana Abdul Ghani	University of Arid Agriculture, Rawalpindi
7	Tissue Culture studies in maize	M. Sc (Biochemistry)	Miss Tayyaba	University of Arid Agriculture, Rawalpindi
8	Effect of media and genotype on callus induction and regeneration in rice.	M. Sc Biochemistry	Zaeem Akhter	University of Arid Agriculture, Rawalpindi
9	Genetic transformation of canola (<i>Brassica napus L.</i>) by <i>Agrobacterium tumefaciens</i>	M. Phil Biochemistry/ Molecular biology	Muhammad Ramzan Khan	Quaid-I- Azam University Islamabad
10	<i>Agrobacterium</i> mediated transformation in rice	M. Phil (Genetics)	Amber Afroz	Quaid-I- Azam University Islamabad
11	Maize	Biochemistry	Asiya Kiran	University of Arid Agriculture, Rawalpindi
12	Establishment of an Efficient protocol of Regeneration systems for some local Wheat (<i>Triticum aestivum L.</i>) Cultivars of Pakistan	M. Sc. (Botany)	M. Naveed Iqbal Raja	Department of Biological Sciences University of Arid Agriculture, Rawalpindi
13	Establishment of an efficient protocol of regeneration system in <i>Brassica napus L.</i> (Canola)	M.Sc. Botany	Muhammad Ejaz	Faculty of Sciences University pf Arid Agri. Rawalpindi
14	Micropropagation and Callus Initiation of Virus resistance (cv-21) of chilli (<i>Capsicum annum L.</i>)	B.Sc. (Hons)	Faisal Rafique Khan	University collage of Agriculture Rawalacot Azad Jammu and Kashmir
Year 2003				
15	Studies on developing transgenic Basmati rice	M. Phil (Genetics)	Mehreen Saleem	Q. A. Univ. Islamabad

	resistant to bacterial blight by <i>Agrobacterium</i> mediated transformation			
16	Developing a high frequency regeneration system from mature embryo derived calli of wheat	M. Phil (Genetics)	Humera Naz	Q. A. Univ. Islamabad
17	Wheat	M. Sc Botany	Shama Malik	University of Arid Agriculture, Rawalpindi
18	Varietal Response from Tissue Culture Studies of some Local Wheat (<i>Triticum aestivum</i> L.) Cultivars	M. Sc. Biochemistry	Uzma Rani	University of Arid Agriculture, Rawalpindi
19	Transgenic plant production by <i>Agrobacterium</i> mediated transformation in Tobacco	M. Sc (Biology)	Iffat Naheed	University of Arid Agriculture, Rawalpindi
20	Virus-free seed Potato Production (Variety-Cardinal)	M. Sc Biology	Sumera Noor	University of Arid Agriculture, Rawalpindi
21	Virus Free Potato Seed Production (Variety- Desiree)	M.Sc. (Biology)	Sadaf Naseer	University of Arid Agriculture, Rawalpindi
22	Callus Production, Embryogenesis and Regeneration of plants in three Local Cultivars of Rice (<i>Oryza sativa</i> L.)	M. Sc. Botany	Kishwar Sultana	University of Arid Agriculture, Rawalpindi
23	Factors Affecting callus induction regeneration and transformation using <i>Agrobacterium</i> in Rice (<i>Oryza sativa</i> L. cv. Basmati 2000)	M. Sc. Botany	Raheela Kausar	University of Arid Agriculture, Rawalpindi
24	Somaclonal Variation in Wheat (<i>Triticum aestivum</i> .L) var. Inqilab-91	M.Sc. (Biochemistry)	Syeda Afifa Batool	University of Arid Agriculture, Rawalpindi
25	Studies on Regeneration and Genetic Transformation of Indica Rice (<i>Oryza Sativa</i> L. cv. Basmati 385)	M. Phil Genetic	Farzana Afridi	Quaid-I- Azam University Islamabad
Year 2004				
26	Regeneration from callus of banana cultivars dwarf Cavendish (<i>Musasp</i>)	M. Sc. (Hons) Horticulture	Nadia Saleem	University of Arid Agriculture, Rawalpindi
27	Tissue culture studies in rice	B.Sc. (Hons)	Robina Akram	Department of Plant Breeding and Genetics University of Agri. Faisalabad
28	Callus Induction, Multiplication and	B.Sc. (Hons)	Rashid Minhas	Department of Plant Breeding and Genetics

	transformation in rice			University of Agri. Faisalabad
29	Micropropagation in Sugarcane	B.Sc. (Hons)	Saima Umbreen	Department of Plant Breeding and Genetics University of Agri. Faisalabad
30	Tissue culture (Callus Induction, Multiplication) and transformation (<i>Agrobacterium</i> Mediated) in Rice	B.Sc. (Hons)	Akhlaq Fareed	Department of Plant Breeding and Genetics University of Agri. Faisalabad
31	Effects of different plant hormones and salts on callus induction and regeneration of sugarcane (<i>Saccharum Officinarum</i> L.)	M. Phil	Muhammad Ejaz	Department of Biological Sciences Quaid-i-Azam University Islamabad
Year 2005				
32	<i>Agrobacterium</i> mediated transformation to build resistance against bacterial blight in rice	M. Phil	M. Haroon Khan	Institute of biotechnology & Genetic Engineering NWFP Agricultural University Peshawar
33	Studies on <i>Agrobacterium tumefaciens</i> mediated transformation in sugarcane (<i>Saccharum Officinarum</i> L.)	M. Phil	Sabaz Khan	Faculty of Biological Sciences Quaid-i-Azam University Islamabad
34	Introduction of disease resistance gene into rice for developing resistance to bacterial blight disease caused by <i>Xanthomonas oryzae</i>	M. Phil	Ghousia Suleman	Department of Biological Sciences Quaid-i-Azam University Islamabad

11. PH.D SUPERVISED

S. No	Thesis Title	Degree	Student Name	University	Years
1	Transgenic plant production for bacterial blight resistance in rice and their analysis (Awarded)	Ph.D.	Amna Noor	Department of Biological Sciences QAU, Islamabad	2003-2007
2	Tissue Culture and transformation studies in Banana Biochemistry (Awarded)	Ph.D.	Aish Muhammad	Department of Biochemistry UAAR, Rawalpindi	2002-2008
3	Development of fungal	Botany	Iqbal Hussain	Department of	2002-

	resistance in potato (Awarded)			Botany, UAAR, Rawalpindi	2007
4	Development of gene transfer technology in wheat (In Progress)		Zahid Mahmood		2005-2009
5	Induction of disease resistance in rice through genetic manipulation (In Progress)	Bioinformatics	M. Haroon Khan	Mohammad Ali Jinnah University, Islamabad.	2008-2011
6	Analysis of gene expression of mutated genes. (In Progress)	Bioinformatics	Raisa Bano	Mohammad Ali Jinnah University, Islamabad.	2008-2011
7	<i>Agrobacterium</i> mediated transformation of wheat for thermo tolerance (In Progress)		Raja Naveed Iqbal	Department of Microbiology QAU, Islamabad	2005-2008

12. AREAS OF INTEREST

Plant biotechnology particularly in agricultural agronomy with molecular biology/biochemistry and plant genetic engineering

- a) Improvement of cereal crops and other monocots particularly in Rice through basic and applied research technologies like, genetic manipulation, genomic and transgenic approaches.
- b) To engineer Basmati rice for resistance to bacterial blight and blast and their evaluation.
- c) Improvement of the problems with traditional plant breeding by genetic engineering, particularly by introducing insect\disease resistance into higher plants.
- d) Studies related with the biotic stresses like chilling/ salinity in rice and other cereals and production of transgenic plants.
- e) Exploitation of Biochemical levels of the transformed plants as gene silencing, molecular characterization and field evaluation.

13. OTHER ACTIVITIES

- 1) Co-supervised many postgraduate theses in tissue culture studies of various crops.
- 2) Co-organized two-national/international symposium on Plant Biotechnology.
- 3) Co-principal Investigator of a project on Micropropagation of date palm through tissue culture from 1989-1994 funded by Agricultural Research Funds of PARC, Islamabad, Pakistan.

- 4) Principal Investigator of a project on development of transgenic Basmati rice resistant to bacterial blight funded by COMSTECH, Islamabad, Pakistan.
- 5) External Co-Examiner to conduct practical examination in the subject of organic chemistry thesis for the annual examination 2002 at Department of Chemistry on 24-10-03 held at University of Azad jammu and Kashmir, Muazaffarabad.

14. EXPERTISE

- Laboratory and field handling
- Research goals/ time line setting
- Communication skill
- Computer and software handling

15. REFEREES

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