



CURRICULUM VITAE (C.V.)

EHSAN ULLAH KHAN

PERSONAL DETAILS:

Father's Name: Rustam Khan

Date of Birth: April 12, 1971.

Marital Status: Married

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Nationality: Pakistani

Present position: Senior Scientist,
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ACADEMIC PROFILE:

S. No.	Certificate / Degree	Year of Passing	Major Group/ Subjects	Marks (%)	Board / University
1	SSC	1987	Science	68.71	Board of Inter & Secondary Education, Peshawar, Pakistan.
2	HSSC	1990	Pre-Eng.	64.19	Federal Board of Inter & Secondary Education Islamabad, Pakistan.
3	B.Sc. (Hons.) Agriculture*	1993	Horticulture	73.22	Gomal University, D.I. Khan (Pakistan).
4	M.Sc. (Hons.) Agriculture**	1996	Horticulture	86.20	Gomal University, D.I. Khan (Pakistan).
5	B. Ed.	1997	Science	62.20	Gomal University, D.I. Khan (Pakistan).
6	PhD	2007-Todate	Citrus Genetic Engineering	-	Huazhong Agric. Univ. Wuhan (P.R. China).

* Four Years Degree

** Two Years Degree

LIST OF HONORS AND ACADEMIC AWARDS:

1. First Position in Department of Horticulture, Gomal University, D.I. Khan, N.W.F.P. (Pakistan) (MSc. Hons. Agriculture, Session: 1993-96).
2. Second Position in Faculty of Agriculture, Gomal University, D.I. Khan, N.W.F.P. (Pakistan) (MSc. Hons. Agriculture, Session: 1993-96).
3. Awarded merit scholarships throughout the academic career.
4. Obtained first class (1st division) throughout the academic career.
5. Awarded PhD Merit Scholarship for High Technology by Islamic Development Bank (IDB), Jeddah, Saudi Arabia for 2007-2010.

EMPLOYMENT RECORD:

Sr. No.	Employer's Name	Address of Organization	Pay Scale	Designation	Period of Service
1.	Pakistan Atomic Energy Commission (PAEC), Islamabad.	NIAB, Faisalabad Pakistan.	-	Trainee Research Fellow	03.02.1998 to 07.05.2000
2.	Pakistan Atomic Energy Commission, Islamabad.	NIAB, Faisalabad, Pakistan.	P.A.E.C. (Group-VIII)	Scientific Officer	08.05.2000 to 30.11.2002
3.	Pakistan Atomic Energy Commission, Islamabad.	NIAB, Faisalabad, Pakistan.	P.A.E.C. (Group-IX)	Senior Scientist	1.12.2002 to date

TRAININGS AND COURSES:

- 1998** Attended and successfully completed a practical training course on “Safety Measures in the Use of Radiation in Agriculture & Biology”, organized by PAEC at NIAB, Faisalabad, Pakistan, September 14-18.
- 1998** Attended and successfully completed a practical training course on “Nuclear and Other Advance Techniques in Agriculture and Biological Research” organized by PAEC at NIAB, Faisalabad, Pakistan, November 16-27.
- 2006** Attended and successfully completed a practical training course on “Civil Defence Nuclear, Biological & Chemical Warfare organized” by Civil Defence Academy, Lahore, Pakistan, September, 25 to October, 14.

WORK EXPERIENCE:

A- Work Experience from 1998 – May 2007 in Pakistan:

- Currently working as **Senior Scientist** (Now on study leave) in Tissue Culture Lab, Nuclear Institute for Agriculture & Biology (NIAB), Faisalabad, Pakistan.
- Optimized protocols and developed virus free citrus plants (Kinnow mandarin, most important citrus cultivar in Pakistan) under *in vitro* conditions using various explants.
- **Sprout- grafting:** Used this technique for rapid and mass propagation of elite scions of Kinnow mandarin by grafting onto Rough lemon rootstocks.
- **In-vitro Micro-grafting:** Used this technique for rapid and mass propagation of virus free shoots of kinnow mandarin developed *in vitro* by grafting onto rootstocks that have desirable traits like resistance to soil-borne pathogens and to allow survival of shoots difficult to root.
- **Induced Mutations:** Developed seedless kinnow mandarin plants through gamma radiation of scions cum budding/grafting techniques (Currently plants are supervised and disseminating by colleagues in the lab).
- **Spontaneous Mutations:** Developed seedless kinnow mandarin plants through selection of spontaneous mutations cum sprout- grafting technique (Currently plants are supervised and disseminating by my colleagues in the lab).

B- Work Experience from June, 2007-Present in China:

- Currently working as **PhD Scholar** under Merit Scholarship Programme for High Technology of Islamic Development Bank, Saudi Arabia in National Key Laboratory of Crop Genetic Improvement, National Center of Crop Molecular Breeding, Huazhong Agricultural University, Wuhan, China (Supervisor: Professor Dr. Ji-Hong, Liu).
- Optimized protocol and regenerated citrus plants *in vitro* for the first time in the world from leaf discs via direct organogenesis, which will be utilized in *Agrobacterium*-mediated transformation of citrus.
- Conducting *Agrobacterium*-mediated transformation experiments to produce transgenic citrus plants containing stress resistant genes to develop salt, drought and cold tolerant citrus plants by using various explants including calli, epicotyls, and internodal segments etc.

- **Characterization of the transgenic citrus plants through various molecular biology techniques.**
- **Conducting *Agrobacterium*-mediated transformation experiments to develop protocol for leaf disk transformation in citrus, which will be the first in the history of *Agrobacterium*-mediated transformation of citrus.**
- **Conducting experiments on involvement of exogenous polyamines in citrus somatic embryogenesis and stress resistance.**

RESEARCH TECHNIQUES AND SKILLS

Various research techniques are routinely in use in the lab. These include:-

- 1. Tissue culture: Media preparation, tissue sterilization, tissue cultures maintenance, and regeneration techniques for citrus using various explants including nucellus, epicotyls, hypocotyls, protoplast, embryos and multiple shoot meristems etc.**
- 2. DNA extraction from various parts of plants and calli using different protocols including "mini and maxi prep".**
- 3. PCR (Polymerase Chain Reactions), RAPD PCR, (Random Amplified Polymorphic DNA).**
- 4. Starch Gel Electrophoresis for Protein Electrophoresis.**
- 5. DNA cloning, DNA fingerprinting, DNA sequencing.**
- 6. Design Primers and Probes for Molecular Biology Purpose.**
- 7. *Agrobacterium*-mediated transformation.**
- 8. Molecular Characterization of Transgenic Plants.**
- 9. Southern Blot Analysis.**
- 10. Northern Blot Analysis**
- 11. Western Blot Analysis of transgenic plants.**

12. Cell suspension culture.
13. Protoplast isolation and somatic hybridization.
14. Various staining techniques of Protein Gels i.e. silver staining and for Agarose gels Ethidium bromide.
15. Somatic embryogenesis is routinely being used in the lab as an alternative method of propagation.
16. Shoot-tip grafting.
17. In-vitro micro-grafting
18. A-sexual grafting techniques
19. Gamma irradiation technique for induction of mutations.

COMPUTER EXPERIENCE:

1. Gained experience in Microsoft Office (MS Word, MS Excel, and MS PowerPoint).
2. Experienced in using Word perfect.
3. Experienced in using statistic software (SAS, STATISTICA-Version 5.5, and Stats Soft).
4. Experienced in using Photoshop CS.
5. Gained experience in designing screens for multimedia presentations.

MEMBERSHIPS OF PROFESSIONAL SOCIETIES:

1. Member of Horticulture Society of Pakistan.
2. Member of International Society of Citriculture.
3. Member of Botanical Society of Pakistan.
4. Member of International Society for Horticulture Sciences (ISHS), Belgium.
5. Member of Online Science and Technology Forum of SDN (<http://sciencedev.net/forums/>).

LIST OF PUBLICATIONS:

1. Altaf, N., E.K. Marwat, S.A. Khalil and I. A. Bhatti (2000). Effect of gamma radiation on nucellar embryogenesis of various *Citrus* cultivars. *Pak. J. Biol. Sci.* 3 (5): 887- 889.
2. Altaf, N., E.K. Marwat, S.A. Khalil and I.A. Bhatti (2000). Callus responses of explants from *Citrus* cultivars. *J. Agric. Res.* 38 (1): 53-60.
3. Altaf, N., S.A. Khalil, E.K. Marwat and I.A. Bhatti (2000). Effect of radiation on nucellar embryogenesis in Sweet orange cultivars. *Pak. J. Biol. Sci.* 3 (10): 1612-1614.
4. Iqbal, M.M., N. Altaf, E.K. Marwat, I.A. Hafiz and I.A. Bhatti (2001). A marker for seedlessness in Kinnow Mandarin. *Pak. J. Biol. Sci.* 4 (1): 69.
5. Altaf, N., E.K. Marwat, I.A. Bhatti and M.M. Iqbal (2001). Nucellar regeneration and polyembryony of *Citrus* cultivars. *J. Bot.* 33(2): 211-215.
6. Altaf, N., M.M. Iqbal, E.K. Marwat and I.A. Bhatti (2001). Effect of gamma radiation on secondary somatic embryogenesis in nucellus culture of *Citrus* cultivars. *Pak. J. Bot.* 33 (4): 419- 422.
7. Khattak, G.S.S., M.A. Haq, M. Ashraf, G.R. Tahir, and E.K. Marwat (2001). Detection of epistasis and estimation of additive and dominance components of genetic variation for synchrony in pod maturity in Mungbean (*Vigna radiata* (L.) Wilczek). *Field Crops Res.* 72: 211- 219.
8. Marwat, E. U. K., and A. A. Alizai (2002). Effect of weeding intervals on yield and yield components of Chilies (*Capsicum annum* L.). *Indus J. Plant Sci.* 1 (1): 176-179.
9. Altaf, N., M.M. Iqbal, E.K. Marwat, A. Gulnaz, G. A. Chaudhary, I.A. Hafiz and M. Ashraf (2002). Towards a seedless cultivar of Kinnow mandarin. 1. Embryogenesis of low seeded/seeded fruits. *J. Agric. Res.* 40 (1): 29-35.

10. Khattak, G. S. S., M. A. Haq, M. Ashraf, P. Srinives, and E. K. Marwat (2002). Genetic analysis of photoperiod-sensitivity, flowering and maturity response in Mungbean (*Vigna radiata* L.) Wilczek). *J. ISSAAS*. 7 (2): 31 – 36.
11. Khattak, G.S.S., M.A. Haq, E.U.K. Marwat, M. Ashraf and P. Srinives (2002). Heterosis for seed yield and yield components in Mungbean (*Vigna radiata* L. Wilczek). *Sci. Asia* 28: 345 – 350.
12. Altaf, N., M.M. Iqbal, A. Gulnaz and E.U. Khan (2003). Towards a seedless cultivar of Kinnow mandarin. 2. Variation in seed shape and seed size. *Pak. J. Bot.* 35 (1): 79-87.
13. Khan, E. U (2003). Growth and yield response of Chilies (*Capsicum annuum* L.) to weeding intervals. *Baloch. J. Agric. Sci.*, 4 (1): 37-39.
14. Altaf, N., M.M. Iqbal and E.U. Khan (2004). Towards a seedless cultivar of Kinnow mandarin. IV. Natural and induced variability. *Pak. J. Bot.* 36 (1): 93-102.
15. Altaf, N., M. M. Iqbal and E.U. Khan (2004). Development of seedless clones of Kinnow mandarin. *1st Natl. Conf. Agric. Biotech.* (Aug. 16 – 18, 2004), Nathiagali (Pakistan.), pp. 94. Program and Abstracts).
16. Khan, E.U., and N. Altaf (2005). Somatic embryogenesis and regeneration of plants from nucellar tissue of Kinnow mandarin (*Citrus reticulata* Blanco). *Indus J. Plant Sci.* 4 (3): 362-368.
17. Khan, E. U., N. Altaf and M.A. Chaudhary (2006). Modified technique of micrografting for producing sparsely seeded and virus free Kinnow fruit plants. *Indus J. Biol. Sci.* 3 (1): 604-608.

18. Marwat, E.U.K (2007). *In vitro* plant regeneration in Kinnow. *Life Sci. Intl. J.*, 1(2):153-156.
19. Khan, E.U., A.R., Khan and K. Ziaf (2008). Citriculture Scenario in Pakistan. *The XIth Intl. Soc. Citriculture Congress (October 26-30, 2008), Wuhan, China*, pp. 136. (Program and Abstracts).
20. Khan, E.U., X. Z. Fu, J. Wang, Q. J. Fan, X.S. Huang, G. N. Zhang, J. Shi, J.H. Liu (2009). Regeneration and characterization of plants derived from leaf in vitro culture of two Sweet orange (*Citrus sinensis* (L.) Osbeck) cultivars. *Sci. Horticulturae*. 120:70

PAPERS SUBMITTED

1. Khan, E.U., A.R., Khan and K. Ziaf (2008). Citriculture Scenario in Pakistan. *Proc. Intl. Soc. Citriculture Congress (October 26-30, 2008), Wuhan, China* (Accepted).
2. Khan, E.U., J.H. Liu, X. Z. Fu, J. Wang, Q. J. Fan (2009). Plant biotechnological approaches for the production and commercialization of transgenic crops- A Review. (Under review of Supervisor, Professor Dr Ji-Hong Liu for submitting to an indexed journal)

CONFRENCES, CONGRESSES AND SYMPOSIAUMS

- 2008 Participated in International Symposium on Bio-energy and Biotechnology organized by Huazhong Agricultural University, Wuhan, China, March 16-20.
- 2008 Attended 1st International Symposium on Applied Biotechnology in Horticulture-08 organized by Huazhong Agricultural University, Wuhan, China, April 16-18.
- 2008 Participated in 2008–Summer Institute in Plant Biology organized by Huazhong Agricultural University, Wuhan, China, June 9-13.

2008 Participated and presented 2 posters at XIth International Society of Citriculture Congress organized by the Chinese Society of Citriculture and Huazhong Agricultural University, Wuhan, China, October 26-30.

POSTERS PRESENTED:

1. Citriculture Scenario in Pakistan at the XIth International Society of Citriculture Congress, Wuhan, China, October 26-30, 2008.
2. Regeneration and characterization of plants derived from leaf in vitro culture of two Sweet orange (*Citrus sinensis* (L.) Osbeck) cultivars at the XIth International Society of Citriculture Congress, Wuhan, China, October 26-30, 2008.

REFERENCES:

1. Dr Ji-Hong Liu liujihong@mail.hzau.edu.cn Tel: 86-27-87282399
2. Dr Wang Jing wangjing8375@yahoo.com.cn Tel: 86- 13277043832
3. Dr Shahnaz Adeeb Khanum shahnazadeeb@yahoo.com Tel: 92- 41-2654221-30
4. Dr Gul Sanat Shah Khattak gssktt@yahoo.com Tel: 92-91-2964060-62

LAST UPDATED: FEBRUARY 21, 2009