

## CURRICULUM VITAE

### **Dr. Zahoor Ahmad Swati**

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### **EMPLOYEMENT:**

**Dean** (January 2010 - Present): Faculty of Crop Production Sciences, NWFP Agricultural University, Peshawar

**Director** (July 2000 - present): Institute of Biotechnology and Genetic Engineering, NWFP Agricultural University, Peshawar

**Professor** (March 1998 - present): Institute of Biotechnology and Genetic Engineering, NWFP Agricultural University, Peshawar. Previously served on the same position at the Department of Plant Breeding and Genetics, NWFP Agricultural University, Peshawar (March 1998 - July 2000).

**Associate Professor** (October 1991 - March 1998): Department of Plant Breeding and Genetics, NWFP Agricultural University, Peshawar

**Assistant Professor** (January 1989 - October 1991): Department of Plant Breeding and Genetics, NWFP Agricultural University, Peshawar

**Lecturer** (January 1981 - January 1989): Department of Plant Breeding and Genetics, NWFP Agricultural University, Peshawar

**Post-doctoral Fellow** (1993 - 1994): Department of Agrobiolgy and Agrochemistry, University of Tuscia, Viterbo, Italy

### **EDUCATION**

**Ph.D.** 1988. Plant Breeding and Genetics, South Dakota State University, Brookings, USA.

**M.Sc (Hons)**. 1981. Plant Breeding and Genetics, NWFP Agricultural University, Peshawar, Pakistan.

**B.Sc (Hons)**. 1978. Plant Breeding and Genetics, NWFP Agricultural University, Peshawar, Pakistan

### **ACADEMIC HONORS AND AWARDS**

1. **Presidential Award for Technology Development, 2011**, Nominated by the Chief Minister of Khyber Pakhtunkhwa, Pakistan.
2. **Productive Scientist of Pakistan, 2005 & 2007**, Declared by the Pakistan Council for Science and Technology (PCST), Islamabad, Pakistan.
3. **Pride of Performance Award "Izaz-e-Fazeelat", 2005**, Conferred upon by the President of Islamic Republic of Pakistan
4. **Distinguished Scientist, 2004**, Shield presented by the Governor NWFP, Pakistan

### **PROFESSIONAL HONORS**

1. **Founder** of the Institute of Biotechnology and Genetic Engineering (IBGE), NWFP Agricultural University, Peshawar, its state of the art research facilities provide a unique place in the NWFP where original basic and applied research of the international standard is being conducted, where in addition to degree programs, research scientists from across the country are trained in new techniques of Biotechnology and Genetic Engineering.

2. **Developed** disease resistant and high yielding wheat varieties, “**SIRAN-2007**” and “**ATTA-HABIB**” and canola type lines of Brassica oilseed.
3. **Member**, National Commission on Biotechnology, a governing body to set priorities for capacity building and biotech interventions needed to address food and economic needs of the country.
4. **Panel Reviewer:** Science International, Pakistan Journal of Genetics, Pakistan Journal of Plant Science, Pakistan Journal of Botany, Journal of Science and Technology, Pakistan Journal of Agric., Agri. Engg. & Vet. Sciences, Scientific Khyber, Sarhad Journal of Agriculture, and Journal of Research.
5. **Panel reviewer:** Research grant proposals and PC-1s submitted to the Higher Education Commission (HEC), Islamabad, Pakistan Science Foundation (PSF), and Pakistan Agricultural Research Council (PARC), Islamabad, Pakistan
6. **Reviewer and Resource Person:** Books on rural development and farming system published by the Pakistan Academy for Rural Development.
7. **Membership on** Board of Governors Sarhad University, Peshawar and Qartaba University, Peshawar, Graduate Studies and Research Management Council Abasyn University, Peshawar and Ethical Committee for Research, University of Peshawar.

#### **ADMINISTRATION EXPERIENCE:**

- **FOUNDING DIRECTOR** of the Institute of Biotechnology & Genetic Engineering, which is the first of its kind in NWFP. Conceived idea, led its establishment and functionalized its academic and research programs. The institute has earned recognition as a world reputed institute in higher learning and research in a short span of time.
- **Mobilized** Provincial, Federal and International resources both in terms of material and personnel in developing state of the art training and research facilities to produce graduates of substantially higher caliber and to conduct target oriented research by applying modern biotechnological techniques for solving complex agricultural problems.
- **Leading a team** of 11 scientists involved in crop improvement through use of cutting edge technologies.

#### **PLANNING/MANAGEMENT EXPERIENCE:**

- Planned and established the **Institute of Biotechnology and Genetic Engineering** which is providing education and research in the fields of Biotechnology and Molecular Biology. The Institute’s laboratories are designed to facilitate ideal environment for original basic and applied research of international standard. The Institute is now offering undergraduate and postgraduate degree programs.
- **Founded Pakistan Society of Biotechnology and Genetics** to promote biotechnology and genetics and to provide a forum for exchange of scientific information and strengthening linkages.
- Acted as a Member of Planning Mission for the evaluation of Swiss sponsored “**Kalam Integrated Development Project**” and preparation of PC-1 for Phase-IV of the project.
- **Acted** as a **Chief Editor** of the Agricultural University’s annual magazine, “**Khirman**” mentoring intellectual creativity among young scholars.
- Organized **Blood Donor Society, Peshawar** that works voluntarily for donating blood to poor and needy patients. It has donated over 5000 points of bloods since its creation in 1982.
- Developed guidelines on “**Use of genetically modified products, Issues and realities**” to facilitate policy formulation at Federal and Provincial level.

- Organized workshops around on the themes of “**Issues and Challenges in Agricultural Education, Research and Environment in the Next Millennium**”, “**Application of Biotechnology in Agriculture**”, “**Poverty Alleviation through Sustainable Agriculture Development**”.
- Organized training program on “**Application of Biotech Techniques for crop improvement**” for scientists across the country. In addition specific courses were designed for the postgraduate students of Hazara University, International Karakoram University, and scientists from NWFP agriculture research system, Balochistan agriculture research system, NIFA and COMSATS.

#### **DEVELOPMENT PROJECTS COMPLETED:**

- Establishment of Institute of Biotechnology and Genetic Engineering. (Approved cost Rs. 39.650 million, funded by Ministry of Education, Govt. of Pakistan).
- Support to biotech educational and research program. (Approved cost Rs.38.644 million funded by Higher Education Commission, Islamabad).

#### **ONGOING DEVELOPMENT PROJECTS:**

- Strengthening of Institute of Biotechnology and Genetic Engineering. (Approved cost Rs. 342 million, funded by the Government of Pakistan).

#### **TEACHING EXPERIENCE:**

- Have developed vast experience of teaching courses in Genetics, Genetic Engineering, Biotechnology and Tissue Culture to Post-Graduates students.
- Initiated B.Sc., M.Phil and Ph.D degree programs in Biotechnology at the NWFP Agricultural University, Peshawar; developed scheme of studies for these programs.
- Chaired and steered the curriculum development committee for Bachelor degree in Biotechnology at the Center of Biotechnology, University of Peshawar.
- Developed new curricula for plant breeding and genetics at NWFP Agricultural University, Peshawar.
- Visiting Professor, University College of Agriculture, Rawalakot, Azad Kashmir.
- Acting as resource person for training and short courses offered by Pakistan Rural Academy, NIPA, NIFA, NARC, NWFP Agriculture Research System and University of Peshawar.

#### **RESEARCH INTEREST & EXPERIENCE:**

- Using an integrated approach of conventional and biotechnological means for improvement of Wheat and Brassica oilseed crops. Have developed rust resistant and high yielding improved wheat varieties “**Siran-2010**” and “**ATTA-HABIB**”. Similarly a number of Brassica lines with improved oil content and quality and resistance against aphid have been developed and are in multilocation yield testing for release as improved varieties in the near future. Also contributed in developing cost effective In vitro technology for crop improvement.
- Guiding research programs on *In-vitro* techniques and molecular markers assisted transfer/selection for crop improvement, molecular and biotechnical determination of quality and characterization of medicinal and aromatic plants.
- Supervising MPhil and PhD students.

**GRADUATE RESEARCH SUPERVISION:**PhD Students Supervised/Cosupervised: **01/04**M.Phil Students Supervised/Cosupervised: **19/09**M.Sc.(Hons)Students Supervised/Cosupervised: **18/15****THESIS  
SUPERVISION****A: M. Phil Biotechnology**

S. No	Name of Students	Acted as Major Advisor/ Co Advisor/Member Supervisory Committee	Degree	Completed
1.	Irum Gul	Major Advisor	M.Phil Biotechnology	Jan 2011
2.	Huma Baloch	=	=	April 2009
3.	Hazeeqa Anbreen	=	=	April 2009
4.	M. Ibrahim	=	=	April 2009
5.	Ammar Ali	=	=	February 2007
6.	Bibi Shamim Salieha	=	=	February 2007
7.	Aisha Naz	=	=	January 2006
8.	Arifa Farooqi	=	=	January 2006
9.	Muhammad Haroon Khan	=	=	January 2006
10	Quahir Sohail	=	=	January 2006
11	Khan Niaz	=	=	August 2006
12	Abdul Rashid	=	=	July 2003
13	Irfan Safdar Durrani	=	=	July 2003
14	Ayesha Baig	=	=	July 2003
15	Muhammad Sayyar Khan	=	=	June 2003
16	Sulaiman Faisal	=	=	June 2003
17	Abu Nasar Siddque	=	=	June 2003
18	Rushda Habib	=	=	June 2003
19	Dawood Ahmad	=	=	June 2003
20	Imran Khan	Member Supervisory Committee	=	January 2006
21	Zahid Hanif	=	=	January 2006
22	Muhammad Shakeel	=	=	January 2006
23	Humera Ihsan	=	=	January 2006
24	Muhammad Ali	=	=	August 2005
25	Muhammad Kaleem	=	=	August 2005
26	Muhammad Ashfaq	=	=	August 2005
27	Farhad Ali	=	=	August 2005
28	Kafeel Ahmad	=	=	August 2005

**B: M. Sc (HONS)**

<b>S. No</b>	<b>Name of Students</b>	<b>Acted as Major Advisor/Co Advisor/Member Supervisory Committee</b>	<b>Degree</b>	<b>Completed</b>
1.	Naveed Ahmad	Major Advisor	M. Sc. (Hons)	July 2001
2.	Syed Salijm Shah	=	=	March 2001
3.	Naheed Gul	=	=	February 2001
4.	Ghulam Hussnain	=	=	June 2000
5.	Muhammad Naeem	=	=	1998
6.	Syed Amjad Ali Shah	=	=	April 1997
7.	Inam Ullah	=	=	June 1996
8.	Surtaj Hussain Irum	=	=	December 1995
9.	Zakir Ullah	=	=	May 1993
10.	Anwaar Ahmad	=	=	May 1993
11.	Naeem Yousaf	=	=	June 1993
12.	Muhammad Imtiaz	=	=	May 1992
13.	Riaz Ahmad	=	=	May 1990
14.	Muzafar Iqbal	=	=	May 1990
15.	Haq Nawaz	=	=	October 1984
16.	Safdar Hussain Shah	=	=	October 1984
17.	Nezam Khan Khattak	=	=	November 1984
18.	Khurshid Akbar	=	=	November 1984
19.	Nadia Anwar	Member Supervisory Committee	=	December 2003
20.	Zakir Hussain Facho	=	=	March 2000
21.	Sadia Afridi	=	=	March 2000
22.	Zahir Shah	=	=	June 1999
23.	Humera Ali Marwat	=	=	December 1999
24.	Ihsan Ullah Khan	=	=	March 1998
25.	Syed Majid Ali Shah	=	=	April 1997
26.	Amir Rashid	=	=	April 1997
27.	Khalid Hussain	=	=	April 1997
28.	Mr. Ishaq	=	=	June 1996
29.	Noureen Tila	=	=	April 1996
30.	Muhammad Abrar	=	=	June 1996
31.	Syed Fiaz Akbar Shah	=	=	May 1995
32.	Muhammad Iqbal	=	=	June 1992
33.	Inayat Ullah	=	=	

**C: Doctor of Philosophy**

<b>S. No</b>	<b>Name of Students</b>	<b>Acted as Major Advisor/Co Advisor/Member Supervisory Committee</b>	<b>Degree</b>	<b>Completed</b>
1.	Razi Ud Din	Major Advisor	Ph. D	December 2003
2.	Anila Mushtaq	Member	=	2009
3.	Sohail Ahmad	Co-Advisor	=	February 2007
4.	Muhammad Zubair	Member	=	January 2006
5.	Hakim Khan	Member	=	June 2004
6.	Saleem Khan	Member	=	December 2003
7.	M.Shakir Khan	Co-Advisor	PhD	In Progress

## RESEARCH PROJECTS COMPLETED

- Genetic improvement of Brassica oilseed yield through conventional and biotechnological approaches. (Approved cost Rs.4.175 million, funded by Ministry of Sciences and Technology, Govt. of Pakistan).
- Genetic improvement of Brassica oil seed for aphid resistance. (Approved cost Rs.1.919 million, funded by ALP/PARC, Islamabad).
- Markers assisted transfer between oilseed rape and mustard for improved oil content and quality (Approved cost Rs.31.750 million, funded by Higher Education Commission, Islamabad).
- Utilization of recombinant DNA technology in marker assisted selection for wheat improvement. (Approved cost Rs. 1.00 million, funded by Higher Education Commission, Islamabad)

## RESEARCH PUBLICATIONS:

### INTERNATIONAL:

- Ijaz, A., S. Khan, S. Attaullah, S. N. Khan, J. Khan, S. Siraj, A. Iqbal, **Z.A. Swati** and M. Idrees. 2011. Response to combination therapy of HCV 3a infected Pakistani patients and the role of NS5A protein. *Virology Journal*. 8:258. (**Impact Factor: 2.44**).
- Muhammad, I., S. Ahmad, **Z. A. Swati**. 2011. Fat tailed sheep production systems in the Khyber Pakhtunkhwa Province of Pakistan. *Trop. Ani. Health and Prod.* 10.1007 511250 011-9867-4. 213-265. (**Impact Factor: 0.95**).
- Wisal, M. K., I. Munir, Farhatullah, M. Arif, A. Iqbal, I. Ali, D. Ahmad, M. Ahmad, A. Mian, J. Bakht, Inamullah and **Z. A. Swati**. 2011. Assesment of genetic diversity of Brassica juncea germplasm using Randomly Amplified Polymorphic DNA (RAPD) markers. *Afric. J. Biotech.* 10(19): 3654-3658. (**Impact Factor: 0.549**).
- Ihsanullah, A. Iqbal, I. Ali, I. Munir, E. Ali, S.J.S.Shah, Najibullah, S.A.K.Bangash, **Z. A. Swati**, M.S. Qureshi. 2011. Role of dietary supplementation in the protein content of bovine milk. *Afric. J. Biotech.* 10(18): 3624-3627. (**Impact Factor: 0.549**).
- Malik N.S., W. Ali, A. Iqbal, I. Ali, M. Iqbal, G. Ahmad and **Z. A. Swati**. 2011. Maize breeding for marginal lands: an integrated approach to decipher response of maize lines to water deficit. *African J. Biotechnology*. 10(18): 3521-3527. (**Impact Factor: 0.549**).
- Shahid A., I.Munir, M. Ahmad, M. Arif, I. Ali, Farhatullah, S. J. Abbas and **Z. A. Swati**. 2011. Characterization of Brassica napus germplasm based on molecular markers. *African J. Biotechnology*. 10(16): 3035-3039. (**Impact Factor: 0.549**).
- Najib, U. K., I. Ali, N.U. Ahmad, A. Iqbal, L.U. Rehman, I. Munir, M.U. Rehman, S.U. Khan, S. Ali, L. Siddique and **Z.A. Swati**. 2011. Prevalence of active HCV infection among the blood donors of Khyber Pakhtunkhwa and FATA region of Pakistan and evaluation of the screening tests for anti-HCV. *Virology Journal*. 8: 154-163. (**Impact Factor: 2.44**).
- Muhammad, S. Q., A. Mushtaq, S. Khan, G. Habib and **Z. A. Swati**. 2010. Variation in milk fatty acids composition with body condition in buffaloes (*Bubalus bubalis*). *Asian-Australian J. Ani. Sci.* 23(3): 340-346. (**Impact Factor: 0.857**).
- Ijaz, A., M. Rehman, F. Rashid, S. Khan, A. Iqbal, X. Laixin, N. Ahmed and **Z. A. Swati**. 2010. Cis-regulatory elements affecting the *Nanos* gene promoter in the germ line stem cells. *J. Biotech., Elsevier*. 145: 323-329. (**Impact Factor: 2.938**).

- Najib, U. K., L. Siddique, I. Ali, A. Iqbal, I. Munir, F. Rashid, S. Ali, F. Raziq and **Z. A. Swati**. 2010. Prevalence of hepatitis B in the blood donors of NWFP and FATA regions and the current scenario of HBV infection in Pakistan. *Afric. J. Biotech.* 9(37): 6162-6166. **(Impact Factor: 0.549)**.
- Muhammad, I., S. Ahmad, **Z. S. Swati** and Khan M S. 2010. Genetic diversity in Balkhi, Hashnagri and Michni sheep populations using SSR markers. *African J. Biotechnology* 9(45): 7617-7628. **(Impact Factor: 0.549)**.
- Anila, M., M.S. Qureshi, S. Khan, G. Habib and **Z. A. Swati**. 2010. Effect of body condition and pregnancy on milk yield and its composition in crossbred dairy cows under tropical conditions. *Egypt J. Exp. Biol. (Zool.)*, 6(1): 247-253.
- Ijaz A., S. Khan, S. N. Khan, A. Iqbal, I. Munir, M. Rehman and **Z. A. Swati**. 2010. Response Rate of combination therapy in chronic hepatitis C virus genotype 3a infected patients in Pakistan and the role of NS5A gene. *Hepatitis Monthly*. Accepted. **(Impact Factor: 0.719)**.
- Saqib, M., I.A. Khan, S. Ali, B. Zeb, A. Iqbal, Z. Shah and **Z. A. Swati**. 2009. Development of RAPD based markers for wheat rust resistance gene cluster (Lr37-Sr38-Yr17) derived from *Triticum ventricosum* L. *Afric. J. Biotech.* 8(7): 1188-1192. **(Impact Factor: 0.549)**.
- Zamarud, S., I. Munir, S. Ali, A. Iqbal, S. Mumtaz, R. Nawaz and **Z. A. Swati**. 2009. Genetic diversity of Pakistani Maize genotypes using chromosome specific simple sequence repeats (SSR) primer sets. *Afric. J. Biotech.* 8(3): 375-379. **(Impact Factor: 0.549)**
- Zahid, H., **Z. A. Swati**, I. Khan, G. Hassan, K.B. Marwat, S. Ali, and M.I. Khan. 2008. RAPD and SSR analysis of wild oats (*Avena species*) from North West Frontier Province of Pakistan. *Afric. J. Plant Sci.* 2(11). 133-139.
- Arshad, I., I.A. Khan, R.N. Khan, S. Ali, Z. Shah and **Z. A. Swati**. 2007. Determining location of RAPD primers on homeologous chromosomes of common wheat. *Am.-Eurasian J. Sustain. Agric.* 1(1): 61-67.
- Waqar, A., I. Munir, M.A. Ahmad, W. Muhammad, N. Ahmad, Durrishahwar, S. Ali and **Z. A. Swati**. 2007. Molecular characterization of some local and exotic *Brassica juncea* germplasm. *Afric. J. Biotechnology*. 6(14): 1634-1638. **(Impact Factor: 0.549)**.
- Sajidul G., M. M. Shah, H. Ahmad, **Z. A. Swati**, S. H. Shah, A. Pervez and U. Farooq. 2007. Molecular Characterization of *Ephedra species* found in Pakistan. *Genet. and Mol. Res.* 6(4): 1123-1130. **(Impact Factor: 0.680)**.
- Zahid, H, **Z. A. Swati**, I.A. Khan, S. Ali and I. Khan. 2007. Studies on Genetic Diversity at DNA Level Among Various Biotypes of Wild Oats (*Avena species*). Proceedings of the 21<sup>st</sup> Asian Weed Science Conference (Editors: B. Marambe, U.R. Sangakkara, W.A.J.M. Decosta, and A.S.K. Abeysekara) 2-6 Oct. 2007, Colombo, Sri Lanka.
- Kafeel A., **Z. A. Swati**. and I. A. Khan. 2006. Molecular evaluation of the "elite-2" set of synthetic hexaploid wheats. In 'Breeding for success: diversity in action. Proceedings of the 13<sup>th</sup> Australasian Plant Breeding Conference, Christchurch, New Zealand'. (Ed. C.F. Mercer) pp. 1014-1019.
- Akhtar H., I. A. Khan. and **Z. A. Swati**. 2006. Molecular characterization of alien chromosome segments incorporated in wheat for various characters of agronomic importance. In 'Breeding for success: diversity in action. Proceedings of the 13th Australasian Plant Breeding Conference, Christchurch, New Zealand'. (Ed. C.F. Mercer) pp.1011-1013.
- Muhammad A., **Z. A. Swati** and I. A. Khan. 2006. Genetic diversity in a historical set of Pakistani bread wheat varieties based upon biochemical analysis and molecular diagnostics. In 'Breeding for success: diversity in action. Proceedings of the 13th Australasian Plant Breeding Conference, Christchurch, New Zealand'. (Ed. C.F. Mercer) pp. 1005-1010.
- Rakhshanda H., M.M.Shah, and **Z. A. Swati**. 2006. Assessment of Genetic Variability in Synthetic Hexaploid Wheat Conferring Resistance against Fusarium Head Blight. In

'Breeding for success: diversity in action. Proceedings of the 13th Australasian Plant Breeding Conference, Christchurch, New Zealand'. (Ed. C.F. Mercer) pp. 1228-1237.

- Mohammad M.S., S.W.Hassan, and **Z. A. Swati**. 2006. Identifying genetic diversity in a set of Pakistani Maize germplasm using RAPD analysis. . In 'Breeding for success: diversity in action. Proceedings of the 13th Australasian Plant Breeding Conference, Christchurch, New Zealand'. (Ed. C.F. Mercer) pp. 1026-1033.
- Iqbal M., **Z. A. Swati**, and Y.Nakano. 2006. Purification and characterization of a novel NADP(+)-linked alcohol dehydrogenase from *Euglena gracilis* Z. Abst. 1427. Molecular and Cellular Proteomics Vol. 5(10,supply).
- Naheed G., **Z. A. Swati**, S M. S. Naqvi, Ihsanullah and A. Qureshi. 2000. magnitude of somaclonal variation in *Oryza sativa* L. cvs. Basmati-385, Jp-5, Pakhal and Swat-II. Plant Tissue Cult. 10(2): 119-124.
- Rahman, H., Z.W. Wicks, T.E. Schumacher and **Z. A. Swati**. 1994. Synthesis of maize populations based on seeding root indices: I: Response to different levels of moisture stress. J. Genet. and Breed. 48: 237-244.
- Rahman, H., Z.W. Wicks; T.E. Schumacher and **Z. A. Swati**. 1994. Synthesis of maize populations based on seeding root indices: II Field evaluations for yield related Traits. J. Genet. and Breed. 48: 245-252.

#### NATIONAL:

- Raziuddin, **Z. A. Swati**, Farhatullah, Aqibullah, M.Shafi, J.Bakht and G.Hassan. 2010. In situ assessment of morpho-physiological response of wheat genotypes to drought. Pak. J. Bot. 42(5): 3183-3195. **(Impact Factor: 0.842)**.
- Raisa, B., M.H.Khan, H.Rashid, R.S.Khan, I.Munir, **Z. A. Swati** and Z.Chaudary. 2010. Callogenesis and organogenesis in three cultivars of *Brassica juncea* affected by explant source. Pak. J. Bot. 42(4): 3925-3932. **(Impact Factor: 0.842)**.
- Raisa, B., 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*. Pak. J. Bot. 42(2): 963-969. **(Impact Factor: 0.842)**.
- Raziuddin, J.Bakht, **Z. A. Swati** and M.Shafi. 2010. Efect of genotypes and culture medium on callus formation and plant regeneration from mature embryos of wheat (*Triticum aestivum* L.). Pak. J. Bot. 42(1): 639-652. **(Impact Factor: 0.842)**.
- Mohammad H.K., H. Rashid, **Z. A. Swati** and Z. Chaudhry. 2007. Agrobacterium mediated transformation to build resistance against bacterial blight in rice. Pak. J. Bot, 39(4). 1285-1292. **(Impact Factor: 0.842)**.
- Nisar A., I. Munir, I.A. Khan, W. Ali, W. Muhammad, R. Habib, R.S. Khan and **Z. A. Swati**, 2007. PCR-based genetic diversity study of rapeseed (*B. napus* and *B. campestris*) germplasm using randomly polymorphic DNA (RAPD). Biotechnology. 6(3): 334-338.
- Mian A. A., I. Munir, W. Ali, **Z. A. Swati**, M.S. Khattak, Q. Sohail and I. Khan. 2007. Assessment of genetic diversity of local and exotic *brassica napus* germplasm.. Pak. J. Boil. Sci. 10(15): 2490-2494.
- Aisha N., **Z. A. Swati**, I. A. Khan. 2007. Molecular characterization of some rust resistant wheat lines using randomly amplified polymorphic DNA markers. Sarhad J. Agric. 23(2): 329-333.
- Aisha N., **Z. A. Swati**, I. A. Khan. 2006. Studies on genetic diversity in Pakistani wheat varieties using Randomly Amplified Polymorphic DNA. Pak. J. Biol. Sci. 9(15): 2858-2861.
- Munir, I., **Z. A. Swati**, M. H. Rashid, R. Yamaji, H. Inui, and Y. Nakano 2006. Separation and Properties of two NADP<sup>+</sup>-dependent alcohol dehydrogenases from *Euglena gracilis* Z. Pak. J. Biol. Sci. 9(15):2743-2747.



- Safdar H. S., **Z. A. Swati** and M. Shah. 2005. Capturing salinity tolerance in wheat by directed molecular biological approaches. In. Environmentally sustainable development. (II), pp. 1547-1554, COMSAT IIT, Abbottabad.
- Salmana K., G. Lutfullah, S. H. Shah and **Z. A. Swati**. 2005. Biotechnological approach to study the mechanism(s) of salt tolerance in potato cultivar Cardinal. In Environmentally sustainable development. (II) pp.1343-1354, COMSAT IIT, Abbottabad.
- **Zahoor A. S.**. 2005. Biotechnology for conservation of Biodiversity. Proceedings of the National consultative workshop on the Implementation of CBD, CMS and Ramsar convention in Pakistan. Islamabad., 22-23 Sept. 2005. pp. 96-97.
- Khan S., D. Ahmad, I.S. Durrani, **Z. A. Swati** and M. Hussain. 2004. Prevalence of different Begomoviruses infecting chillies in NWFP and Punjab (Pakistan). S. J. Agric: 20: 605-608.
- Ghafoor S., H. Ahmed, Z. Ali, S. H. Shah, **Z. A. Swati**, and M. Shakirullah. 2004. Potentials and prospects of growing Morchella in natural environment. Proceedings of the International Workshop on Conservation and Sustainable uses of medicinal and aromatic plants of Pakistan pp. 109-111. Islamabad.
- **Zahoor, A. S.**, 2003. Labelling of Genetically Modified (GM) products: Issues and realities. Proceeding of Workshop on poverty Alleviation through Sustainable Agriculture Development, pp. 126-138.
- Shah, A. H., S. H. Shah and **Z. A. Swati**. 2003. Cost effective Micro propagation technology for Potato. Pak. J. Biol. Sci. 6 (4): 336-340.
- Shah, S. H., and **Z. A. Swati**. 2003. Supplemental calcium enhances growth and elicits proline accumulation in NaCl-stressed rice roots. Pak. J. Biol. Sci.: 3(10) 903-914.
- Saadia, A., I. Muhammad, S. Hassan, **Z. A. Swati**, and S. H. Shah. 2002. Callogenesis and plant regeneration in sugarcane. Sci. Khyber. 15(2): 31-34.
- Humaira, A. M., I. Muhammad, S. Hassan, **Z. A. Swati**, and S. H. Shah. 2002. Effect of auxins and cytokinins on Callogenesis and rhizogenesis in sugar- beet. Sci. Khyber. 15(2):35-39.
- Shah, S. H., S. Tobita, M. Shono and **Z. A. Swati**. 2001. Metabolic response of callus cultures of rice to NaCl stress. Sci. Khyber 14(1): 1-9.
- Anwaar, A., **Z. A. Swati**, Zakirullah and Raziuddin. 2000. Evaluation of selected Brassica lines for oil quality characters. Pak. J. Biol. Sci. 3(1): 163-165.
- **Zahoor, A. S.**, A. Ahmad., Zakirullah, and Raziuddin. 2000. Evaluation of selected Inter and Intraspecific Brassica lines for yield and its components. Pak. J. Biol. Sci. 3(1): 296-299.
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- Training in molecular cytogenetic and doubled haploid production techniques, CIMMYT, Mexico. July 23 – Oct 21, 2003.
- Workshop on “Application of Biotechnology in Arid Agriculture” Kuwait Research Institute. April 9-11, 2001.
- Workshop on “Biotechnology for Development” organized by COMSTCH in February 2000, at Islamabad.
- Course on latest developments in Biotechnology, Lahore, Pakistan, 1988.
- Italian Language Course at University for Foreigners, Perugia, Italy, 1993.
- Course on Plant Genetic Resource, Japan, 1989.
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- Training on Computer Application for Research and Education, August 1987 UIUC, Urbana Champaign, USA.
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- Education Sector Reforms, Governor House, NWFP, 18-19 February, 2009.
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- National Conference on Biotechnology for Development, University of Science and Technology, Bannu. May 2008.
- Second International Conference on Environmentally Sustainable Development, COMSATS Institute of Information Technology. 2007.
- 13<sup>th</sup> Australasian Plant Breeding Conference, Christchurch, New Zealand. 2006.
- National Workshop on “Crop Improvement: Conventional and Biotechnological Approaches”, University Arid Agriculture Rawalpindi. 2006.
- National Consultative Workshop on the National Conservation Strategy (NCS)-Implementation, NCS-MTR and NCS Data Base Development, Islamabad. 2006.
- International Conference “Biotechnology: Shaping Future Agriculture”, University of Arid Agriculture, Rawalpindi. 2006.
- Bioforum, NCEMB, University of Punjab, Lahore. 2006.
- National Consultative Workshop on the Implementation of CBD, CMS and Ramsar Convention in Pakistan. Islamabad. 2005.
- International workshop on Agricultural Linkages Program (ALP). Islamabad. 2004.
- National Conference on Agricultural Biotechnology. Nathiagali. 2004.
- National Conference of Plant Scientists, Peshawar. 1998.
- Seventh Publications Week of Pakistan Academy for Rural Development, Peshawar. 1998.
- All Pakistan Science Conference Peshawar. 1999.
- Inaugural International Conference on Genetics, Islamabad. 1996.
- International symposium on new genetic approaches to crop improvement, Karachi. 1992.
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- Annual meeting of American Society of Agronomy, Anaheim, California, USA. 1988.
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