



Editor- *Planta Daninha (ISI Journal)*

Brazilian Weed Science Society

PERMANENT ADDRESS

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INSTITUTION ADDRESS

Cholistan Institute for Desert Studies (CIDS),
The Islamia University of Bahawalpur (IUB),
Bahawalpur, Pakistan
Phone: +92-335-0788120

ACADEMIC AND EXPERIENCE PROFILE:

- **Assistant Professor**, Cholistan Institute for Desert Studies (CIDS), The Islamia University of Bahawalpur. (August 2016 to Continue...)
- **Agronomy Team Leader/Bioenergy Consultant**, AF Consult, Switzerland. Updating Biomass Power Generation Feasibility Study for 5-20 MW Project, Faisalabad, Pak (01-04-2016~25-08-2016).
- **Ph. D Arid Land Agriculture (Field Crops and Soil Science)**. Department of Arid Land Agriculture, King Abdulaziz University, Jeddah, KSA. **CGPA 4.85/5.00**. (11-09-2012~20-02-2016).
- **Research Assistant (Plant Molecular Physiology Lab)**. College of Food and Agriculture Sciences, King Saud University, KSA (11-02-2012~25-08-2012).
- **M. Sc. (Hons.) (Agronomy)**. University of Agriculture, Faisalabad, Pakistan. **CGPA 3.59/4.00**. (15-08-2009~22-10-2011).
- **B. Sc. (Hons.) (Agronomy)**. University of Agriculture, Faisalabad, Pakistan. **CGPA 3.74/4.00**. (12-09-2005~20-06-2009).

DISSERTATION TITLES:

Ph. D. Thesis: Response of different wheat (*Triticum aestivum* L.) genotypes to drought stress and planting dates under arid land conditions of Saudi Arabia.

M. Sc. (Hons.) Thesis: Chemical weed control in dry seeded fine grain aerobic rice (*Oryza sativa*).

RESEARCH INTERESTS:

- Agronomy
- Crop Physiology
- Desertification
- Drought and Heat Stress Tolerance
- Deficit Irrigation
- Statistics and Experimental Design

TOTAL IMPACT FACTOR: (62.18)

International Impact Factor Publications:

1. Muhammad Naeem, Muhammad Sehbaz, Yasir Hussain and **Muhammad Zahid Ihsan** (2018). Foliar calcium spray confers drought stress tolerance in maize via modulation of plant growth, water relations, proline content and hydrogen peroxide activity. **Archives of Agronomy and Soil Science**. 64(1): 116-131 (IF=2.10)
2. Adnan M, Shah Z, Fahad S, Arif M, Alam M, Khan IA, Mian IA, Basir A, Ullah H, Arshad M, Saud S, **MZ Ihsan**, Y Jamal, Amanullah, HM Hammad and W Naseem (2017). Phosphate-Solubilizing Bacteria Nullify the Antagonistic Effect of Soil Calcification on Bioavailability of Phosphorus in Alkaline Soils. **Nature Scientific Reports**. 7(1):16131-43. (IF=4.25)

3. Ihsanullah Daur, Zahid H. Shah, **Muhammad Z. Ihsan**, Shahzad Ali, Muhammad Waqas, Hafiz M. Rehman et al (2017). Occurrence, comparative growth and composition of *Tribulus terrestris* L. Under variable in-situ water stress. **Pakistan Journal of Botany**. 49(5): 1641-1646. (IF=0.69).
4. Muhammad Naeem, Muhammad Shahbaz Naeem, Rashid Ahmad, Riaz Ahmad, Muhammad Yasin Ashraf, Muhammad Zahid Ihsan et al (2017). Improving drought tolerance in maize by foliar application of boron: water status, antioxidative defense and photosynthetic capacity. **Archives of Agronomy and Soil Science** (IF=2.10)
5. Waqas ud Din Khan, PMA Ramzani, Shazia Anjum, Muhammad Zahid Ihsan et al (2017). Potential of miscanthus biochar to improve sandy soil health, in situ nickel immobilization in soil and nutritional quality of spinach. **Chemosphere** (IF=4.20)
6. Muhammad Naeem, Zahid Ata Cheema, Muhammad Zahid Ihsan, Yasir Hussain, Abubaker Mazari and Hafiz tassawar Abbas (2017). Response of wheat and accompanied weeds to differential rates of potent herbicides weed plant. **Planta Daninha** accepted (IF=0.42)
7. Shah Fahad, Ali Ahsan Bajwa Bajwa, Usman Nazir, Shakeel Ahmad Anjum, Ayesha Farooq, Ali Zohaib, **Muhammad Zahid Ihsan**... (2017). Crop production under drought and heat stress: plant responses and management options. **Frontiers in Plant Science** (IF=4.5)
8. Qamar uz Zaman, Zubair Aslam, Muhammad Yaseen, **Muhammad Zahid Ihsan**, Abdul Khaliq, Shah Fahad, Safder Bashir, PMA Ramzani and Muhammad Naeem (2017). Zinc biofortification in rice: leveraging agriculture to moderate hidden hunger in developing countries. **Archives of Agronomy and Soil Science**. (Accepted) (IF=2.10)
9. Shah Saud, Shah Fahad, Yajun Chen, **Muhammad Zahid Ihsan**, Hafiz Mohkum Hammad, Wajid Nasim, Muhammad Arif, Hesham Alharby (2017). Effects of nitrogen supply on water stress and recovery mechanisms in Kentucky bluegrass plants. **Frontiers in Plant Sciences** (IF=4.49)
10. **Muhammad Zahid Ihsan**, Samina Jam Nazir Ahmad, Zahid Hussain Shah, Hafiz Mamoon, Zubair Aslam, Ishita Ahuja, Atle Bones and Jam Nazir Ahmad (2017). Gene mining for proline based signalling proteins in cell walls of *Arabidopsis thaliana*. **Frontiers in Plant Sciences**. Bioinformatics and Computational Biology. DOI: 10.3389/fpls.2017.00233 (IF=4.49)
11. Fathy Saad Elnakhlawy, AR Alsharif and **Muhammad Zahid Ihsan** (2017). Assessment of Jeddah parks health status by *Cyperus rotundus* and soil analysis under waste water irrigation. **Plant Daninha** (IF=0.52)
12. Samir G. Al-Solaimani, Fahad Alghabari, **Muhammad Zahid Ihsan** and Shah Fahad (2017). Water deficit irrigation and nitrogen response of sudan grass under arid land drip irrigation conditions. **Irrigation and Drainage**. DOI: 10.1002/ird.2110 (IF=0.87)
13. Asad Amin et al (2017). Optimizing the phosphorus use in cotton by using CSM-CROPGRO-cotton model for semi-arid climate of Vehari-Punjab, Pakistan. **Environmental Science and Pollution Research**. DOI: 10.1007/s11356-016-8311-8 (IF=2.76)
14. **Muhammad Zahid Ihsan**, Fathy Saad Elnakhlawy, Shah Fahad and Saleh Alzamanan (2016). Genotypes Selection on the basis of Periodic Performance- A Reliable Strategy to Maximize Crop Water Use Efficiency and Productivity in Arid Regions **Annals of Arid Zone**, 55(3&4): 153-163. (IF=0.40)
15. **Muhammad Zahid Ihsan**, Fathy Saad El-nakhlawy, Saleh Ismail, Shah Fahad and Ihsanullah Daur (2016). Wheat phenological development and growth studies as affected by drought and late season high temperature stress under arid environment. **Frontiers in Plant Sciences**. Agroecology and Land Use Systems. DOI: 10.3389/fpls.2016.00795 (IF=4.49)

16. Fahad Alghabari, **Muhammad Zahid Ihsan**, Abdul Khaliq, Saddam Hussain, Ihsanullah daur, Shah fahad and Wajid Naseem (2016). Gibberellin-sensitive Rht alleles confer tolerance to heat and drought stresses in wheat at booting stage. *Journal of Cereal Science*. Journal of Cereal Science. DOI: org/10.1016/j.jcs.2016.05.016 (IF=2.40)
17. Mohamed A Shaheen, Fathy S El-Nakhlawy, Fahd M Almeahmadi, **Muhammad Zahid Ihsan**, Abdulmohsin R Al-Shareef and Mohamed A Shaheen (2016). Assessment of seasonal variation for air pollutant accumulation by Zizyphus tree under washing treatment. *Environmental Monitoring and Assessment*. DOI: 10.1007/s10661-016-5354-8 (IF=1.98)
18. Shah Fahad, Saddam Hussain, Shah Saud, Shah Hassan, Mohsin Tanveer, **Muhammad Zahid Ihsan**, Adnan Noor Shah et al., (2016). A combined application of biochar and phosphorus alleviates heat-induced adversities on physiological, agronomical and quality attributes of rice. *Plant Physiology and Biochemistry*. DOI.org/10.1016/j.plaphy.2016.03.001 (IF=2.92)
19. Shah Fahad, Saddam Hussain, Shah Saud, Shah Hassan, BS, Chouhan, **Muhammad Zahid Ihsan** et al., (2016). Responses of rapid viscoanalyzer profile and other rice grain qualities to exogenously applied plant growth regulators under high day and high night temperatures. *Plos one*. DOI:10.1371/journal.pone.0159590 (IF=3.54)
20. Shah Fahad, Saddam Hussain, Shah Saud, Shah Hassan, **Muhammad Zahid Ihsan** et al., (2016). Exogenously Applied Plant Growth Regulators Enhance the Morpho-Physiological Growth and Yield of Rice under High Temperature. *Frontiers in Plant Science*. Plant Nutrition. DOI: 10.3389/fpls.2016.01250 (IF=4.49)
21. Muhammad Naeem, Azher Madmood, **Muhammad Zahid Ihsan**, Ihsanullah Daur, Saddam Hussain, Zubair Aslam and Saleh Al Zamanan (2016). *Trianthema portulacastrum* and *Cyperus rotundus* interference in maize and application of allelopathic crop extracts for their effective management. *Planta Daninha*. DOI.org/10.1590/S0100-83582016340200002 (IF=0.52)
22. Fahad Alghabari, **Muhammad Zahid Ihsan**, Saddam Hussain, Ghulam Aishia and Ihsanullah Daur (2015). Effect of Rht alleles on the tolerance of wheat grain quality to high temperature and drought stress during booting and anthesis. *Environmental Science and Pollution Research*, DOI: 10.1007/s11356-015-4724-z (IF=2.76)
23. Azhar Mahmood, Abdul Khaliq **Muhammad Zahid Ihsan**, Zahid Ata Cheema (2015). Crop Residues Mulch as Organic Weed Management Strategy in Maize. *Clean-Soil, Air, Water*. DOI: 10.1002/clen.201500155 (IF=1.71)
24. **Muhammad Zahid Ihsan**, Muhammad Naeem, Azhar Mahmood, Abdul Khaliq and Ahmad A. S. Bakhaswain (2015). Field evaluation of allelopathic plant extracts along herbicides on weed management indices and weed-crop regression analysis in maize. *Weed Biology and Management*. DOI:10.1111/wbm.12070 (IF=0.92)
25. Azhar Mahmood, **Muhammad Zahid Ihsan**, Muhammad Naeem, Abdul Khaliq, Zahid Ata Cheema and Ahmad A. S. Bakhaswain (2015). Estimation of weed dry biomass and grain yield as a function of growth and yield traits against allelopathic weed management in maize. *Planta Dhanina*. DOI.org/10.1590/S0100-83582015000100003 (IF=0.52)
26. Abdul Khaliq, Farheena Aslam, Ammar Matloob, Javaid Ahmed, Tanveer Ahmed, Saddam Hussain and **Muhammad Zahid Ihsan** (2015). Phytotoxic activity of Parthenium hysterophorus against wheat and canola differs among plant parts and bioassay techniques. *Planta Daninha*. DOI.org/10.1590/S0100-83582016340100002 (IF=0.52)
27. **Muhammad Zahid Ihsan**, Fathey Saad Elnakhlawy and Saleh Mohamad Ismail (2015). Water use efficiency, growth and yield of wheat cultivated under competition with *Setaria*. *Planta Daninha*. DOI.org/10.1590/S0100-83582015000400006 (IF=0.52)
28. **Muhammad Zahid Ihsan**, Abdul Khaliq, Ahmad Bakshwain, Refaat Atta-allah Ahmed, Ammar Matloob and Zubair Aslam (2014). Influence of herbicides applied alone or

supplemented with manual weeding on weeds growth, rice yield and quality of direct seeded rice (*Oryza sativa* L.). *The Philippine Agricultural Scientist*. 97(4): 377–384 (IF=0.46)

29. Abdul Khaliq, Amar Matloob, **Muhammad Zahid Ihsan**, Rana Nadeem Abbas, Zubair Aslam and Fahd Rasool (2013). Supplementing herbicides with manual weeding improves weed control efficiency, growth and yield of direct seeded rice. *International Journal of Agriculture and Biology*. 15(2): 191–199 (IF=0.93)

Non-Impact Factor Papers

1. Zubair Aslam, Qamar-uz-Zaman, **Muhammad Zahid Ihsan**, Sairah Syed, Yoshiharu Fujii, Abdul Khaliq, Raza Ullah, Misbahul-Islam and Zahir Ahmad Zahir (2016). Efficacy of rice straw extracts in controlling weeds and enhancing the productivity of wheat (*Triticum aestivum* L.). *Pakistan Journal of Weed Science Research*, 22(2): 197-210.
2. Fathy Saad El-Nakhlawy, Fahad Alghabari, **Muhammad Zahid Ihsan** (2015). Response of Wheat Genotypes to Planting Dates in the Arid Region, *Scientia Agriculturae*, 10(2): 59-63.
3. Samir G. Al-Solaimani, Fahad Alghabari, **Muhammad Zahid Ihsan** (2015). Effect of different rates of nitrogen fertilizer on growth, seed yield, yield components and quality of canola (*Brassica napus* L.) under arid environment of Saudi Arabia. *International Journal of Agronomy and Agricultural Research*, 6(4): 268-274.
4. Amir Latif, Tanveer Ahmed, Sikandar Hayat, Ghulam Sarwar, **Muhammad Zahid Ihsan**, Muzaffar Raza, Muhammad Sarwer, Iftikhar Akmed Khan (2014). Genetics of yield and some yield contributing traits in upland cotton (*Gossypium hirsutum* L.). *Journal of Plant breeding and Crop Science*, 6(5): 57-63.
5. Zaid Mustafa, Muhammad Aslam Pervez, Chaudhary Muhammad Ayyub, Amar Matloob, Abdul Khaliq, Saddam Hussain, **Muhammad Zahid Ihsan** and Madiha Butt (2014). Morpho-physiological characterization of chilli genotypes under NaCl salinity. *Soil and Environment*, 33(2): 133-141.
6. **Muhammad Zahid Ihsan**, Nauman Shahzad, Shamsa Kanwal, Muhammad Naeem, Abdul Khaliq, Fathy Saad El-Nakhlawy, Ammar Matloob (2013). Potassium as Foliar Supplementation Mitigates Moisture Induced Stresses in Mung bean (*Vigna radiata* L.) as Revealed by Growth, Photosynthesis, Gas Exchange Capacity and Zn Analysis of Shoot. *International Journal of Agronomy and Plant Production*, 4(S): 3828-3835.

Conference Papers/ Abstracts

1. Zubair Aslam, **Muhammad Zahid Ihsan**, Misbah ul Haq and Abdul Khaliq (2011). Isolation and characterization of rice root associated novel bacterium. Abstract published in JAPS conference 5-7 July 2011 Bara Gali Peshawer University. Journal of Animal and Plant Sciences.
2. Fahad Alghabari and **Muhammad Zahid Ihsan** (2016). Wheat and alfalfa growth response to *Allium sativum* water extract under saline irrigation. 1st International Salinity Conference (ISC-2016) 19-21 December, 2016. The Islamia University of Bahawalpur, Pakistan.

Books/Book Chapters

1. Amanullah, Shah Fahad, Sumera Anwar, Shahbaz Khan Baloch, Shah Saud, Hesham Alharby, Fahad Alghabari and **Muhammad Zahid Ihsan** (2017). Rice Crop Responses to Global Warming: An Overview. *Agricultural and Biological Sciences » "Rice - Technology and Production*. ISBN 978-953-51-3030-7, Intech Publisher, March 22, 2017.
2. **Muhammad zahid Ihsan** and Abdul Khaliq (2013). Rice Direct Seeding and Weed Management in Asia. Weed management in rice through integration of chemical and mechanical approach in direct seeding under Pakistani conditions. 1st edition, **Lambert Academic Publishing Germany**. (Book)
3. Shazia Anjum, Muhammad Abdullah, **Muhammad Zahid Ihsan**, Muhammad Naeem and Hafiz Tassawar Abbas (2017). Editor Abstract Book of International Conference on

PROJECTS

Sr. No	Title	Duty	Year	Funding Agency	Funding amount
1	Pakistani wheat breeder's selection criteria for varieties development from mexiPak-1965 to Borlaug-2016, based on phenotypic and genotypic markers	P.I	2017-2020	Writing	5,000,000
2	Studying wheat <i>Rht</i> genotypes agronomic response to plant growth regulators under drought and heat stress	P.I	2016-17	Higher Education Commission of Pakistan	441,300
3	Updating of feasibility study report of 5-20 MW biomass based thermal power project at Chak Jhumra, Faisalabad	Consultant	2016	Energy Department, Government of Punjab	2,500,000
4	Response of different wheat (<i>Triticum aestivum</i> L.) genotypes to drought stress and planting dates under arid land conditions of Saudi Arabia	P.I	2012-2016	King Abdullah City for Science and Technology and King Abdulaziz University, KSA	1,890,000

EDITOR:

- 1- Planta Daninha (Brazilian Weed Science Society) from 01/05/2016 to
- 2- Journal of Arid Land Agriculture from 15/08/2016 to

REVIEWING SERVICE:

- Frontiers in Plant Science
- Planta Daninha
- Spanish Journal of Agriculture Research
- Crop Breeding and Applied Biotechnology
- International Journal of Pest Management
- Proceeding of the National Academy of Sciences Part B

ORGANIZER:

- 1st International Conference on Climate Change and Biodiversity 02-04 May, 2017. Organized by Cholistan Institute of Desert Studies, the Islamia University of Bahawalpur, Pakistan

TEACHING COURSES AT (KING ABDULAZIZ UNIVERSITY, JEDDAH KSA):

Course No	Course Title	Credit Hours
AGR-101	Basic Agriculture	3(2-1)
AGR-105	Desertification	3(3-0)
AGR-203	Arid Land Agriculture	3(2-1)
SS-101	Introduction to Soil Science	3(3-0)
C. Phy-201	General Crop Physiology	2(1-1)
C. Phy-203	Environmental Sresses and Plant	3(2-1)
AGR-309	Weed Control	3(2-1)
AGR-405	Crop Physiology	3(2-1)
AGR-502	Advanced Crop Production	3(2-1)
STAT-601	Experimental Design	2(2-0)
STAT-705	Statistical Analysis	3(3-0)

RESEARCH SOFTWARES:

- 1) SAS
- 2) STATISTICA
- 3) DSTAT
- 4) geneMANIA
- 5) GENEVESTIGATOR
- 6) CROPWAT

CONFERENCES/WORKSHOPS:

- SINO-PAK International Conference on Innovation in Cotton Breeding and Biotechnology, November 2017. Organized by MNSUAM, BRI CAAS, BZU, Multan.

- 6th International Conference of Pakistan Phytopathological Society on **Plant Health for Sustainable Agriculture**, 20-22 November, 2017. Organised by Department of Plant Pathology, BZU, Multan and CCRI, Multan.
- 1st International Conference on **Climate Change and Biodiversity**, 02-04 May, 2017. Organized by Cholistan Institute of Desert Studies, the Islamia University of Bahawalpur, Pakistan
- 1st International **Salinity Conference**, 19-21 December 2016. Organized by Islamia University of Bahawalpur, Pakistan.
- 7th **Scientific Forum**, 10 October 2015 to 14 October 2015. Organized by King Faisal Center, King Abdulaziz University, Jeddah Saudi Arabia.
- 5th **Scientific Forum**, 12 November 2013 to 15 November 2013. Organized by King Faisal Center, King Abdulaziz University, Jeddah Saudi Arabia.
- International conference on **Crop Management Issues and Options** on June 01-02, 2011 under Golden Jubilee Celebration (1961-2011). Organized by Pakistan Society of Agronomy (PSA) at University of Agriculture Faisalabad, Pakistan.
- International conference on **Sustainable Food Grain Production: Challenges and Opportunities** on Oct 26-27, 2009. Organized by Pakistan Society of Agronomy (PSA) at University of Agriculture Faisalabad-Pakistan.

ORAL PRESENTATIONS

- ✓ Biomass, A renewable energy resource at 1st International Conference on Climate Change and Biodiversity, 02-04 May, 2017 CIDS, IUB.
- ✓ Moringa as a priming agent against drought stress UAF 2017.

PROFESSIONAL MEMBERSHIPS:

- Member of SOYA (Society of Young Agronomist)
- Member of Pakistan Society of Agronomy.
- Member of Arid Land Agriculture community, King Abdulaziz University Jeddah, KSA

PROFESSIONAL TRAININGS

- 44th post graduate training program on nuclear and advanced techniques in agriculture and biology 21-11-2016~02-12-2016
- Biotechnology Lab Protocols King Saud University, Riyadh Saudi Arabia from 20-04-2012~15-05-2012
- Training on Tunnel Farming, University of Agriculture Faisalabad, from 15-10-2009~15-11-2009

AWARDS/SCHOLARSHIPS:

- Best International Student of the Year of King Abdulaziz University, KSA 2015-16
- King Abdullah Scholarship for Science and Technology 2012-16 for Ph. D
- King Abdullah Scholarship for Science and Technology 2010-12 for Master
- University Merit Scholarship Winner, 2005-2009
- Kaneez Fatima Merit Scholarship Winner 2007-2009
- District Merit Scholarship Winner 2005-2009
- USAID Funded merit and need based Scholarship winner 2009-2011
- Certificate of Excellence in Hostel Management Committee 2009
- Certificate of Excellence from Pakistan Society of Agronomy (PSA) 2011
- Certificate of Excellence in Management of internship tour 2009
- Certificate of Excellence in football, athletic, hiking and tracking
- Sports man of the year, University of Agriculture Faisalabad, 2007

Submitted/Under review

1. **Muhammad Zahid Ihsan**, Zubair Aslam*, Muhammad Farooq, Muhammad Rashid and Muhammad Yaseen. High temperature and plant growth, An overview on role of Sulfur and its management strategies. *Archives of Agronomy and Soil Science*
2. Pia Muhammad Adnan Ramzani, **Muhammad Zahid Ihsan**, Shazia Anjum and Muhammad Iqbal. Degraded sandy land maize productivity enhancement by organic amendments was directly related to soil health status and enzymatic activities; A study from Cholistan desert 40 years fallow land fields. **Land Degradation and Development**