

# Dr. Muhammad Ashfaq

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Associate Professor (PBG)

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**HEC Approved Supervisor**

Institute of Agricultural Sciences

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## *Professional Information:*

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- Worked as **Trainee Research Fellow** (Plant Breeding & Genetics) in the Nuclear Institute for Agriculture and Biology (NIAB) since August 19, 2004 to August 18, 2007.
- Worked as **Farm Manager** for the evaluation of new exotic vegetable/cereals varieties/germplasm under the private seed organization at Gujranwala from February 2, 2003 to August 15, 2004 and conducted trials on farmer's field.
- Worked in PAEC Agribusiness Project for seed production of Wheat and Cotton at NIAB farm.
- As student researcher conducted research in partial fulfillment of the requirement of the degree of MSc (Hons) Plant Breeding & Genetics entitled: "*Association of grain yield with various morphological traits in Bread Wheat (Triticumaestivum L )*"
- Worked as a **Trainee Researcher** in Plant Science Department McGill University, Canada February 17, 2010 August 10, 2010.
- Delivered seminars in different forums.
- Worked as a **Visiting Scientist** at USDA (Dale Bumpers National Rice Research Center) USA, Arkansas from 11, August 2010 to 19, November, 2010.
- Worked as **Visiting Scientist** in Rice Research and Extension Center, University of Arkansas USA from 14 August, 2010 to 1 November, 2010 in Hybrid Rice Breeding Programme.
- Ph.D thesis entitled, "*Genetics of Rice (Oryza sativa L.) Under Normal and Water Stress Conditions*".
- Currently working as **Assistant Professor** since 5-10-2011 to date in the Institute of Agricultural Sciences, University of the Punjab, Lahore, Pakistan

Membership:

- 1) American Society of Plant Biologists (ASPB)
- 2) Pakistan Society of Plant Breeders and Geneticist (UAF)

Academic Background:

Degree	Subject	Institution/ Board	Year	Div.	%age/ CGPA
Ph.D (PBG)	Plant Breeding Genetics	University of Agriculture, Faisalabad	2011	Ist	3.50/4.00
M.Sc (Hons)	Plant Breeding Genetics	University of Agriculture, Faisalabad	2002	1 <sup>st</sup>	67.30 3.15/4.00
B.Sc (Hons.) 4-Years Degree	Plant Breeding Genetics	University of Agriculture, Faisalabad	2000	1 <sup>st</sup>	66.92 3.10/4.00
F.Sc	Pre-Medical	Govt.College Gujranwala	1996	1 <sup>st</sup>	64.90
S.S.C	Science Group	Govt.High School GhakkharNo-1 Gujranwala	1992	1 <sup>st</sup>	75.88

**INSTITUTE OF AGRICULTURAL SCIENCES**

**WORKLOAD OF REGULAR TEACHING FACULTY (September 2015 to March 2016)**

Sr. No.	Name of Teacher	Class	Semester	Theory (1 hr duration)	Inter nship (1 hr duration)	Practical (2 hr duration)	Total teaching hours	Grand Total	Prescribed Load	Extra Load
1	Dr. Muhammad Ashfaq	B.Sc. (Hons.) Group-I	3 <sup>rd</sup>	2	-	1	4	11	9	2
2		B.Sc. (Hons.) Group-II	3 <sup>rd</sup>	2	-	1	4			
3		M.Sc. (Hons.) (Horticulture)	1 <sup>st</sup>	3	-	-	3			

**Courses Taught Annually**

Class	University/ Department	Semester	Course No	Course Title	Period
B.Sc (Hons)	University of the Punjab/Institute of Agricultural	3 <sup>rd</sup>	PBG-201	Elementary Genetics and Plant Breeding	3(2-1)

	Sciences				
<b>B.Sc (Hons)</b>	University of the Punjab/Institute of Agricultural Sciences	7 <sup>th</sup>	PBG-706	Modern Techniques in Plant Breeding	3(2-1)
<b>M.Sc (Hons)</b>	University of the Punjab/Institute of Agricultural Sciences	2 <sup>nd</sup>	PBG-721	Evolution of Field Crops	3(3-0)
<b>Ph.D</b>	University of the Punjab/Institute of Agricultural Sciences	1 <sup>st</sup>	PBG-721	Evolution of Field Crops	3(3-0)
<b>Ph.D</b>	University of the Punjab/Institute of Agricultural Sciences	2 <sup>nd</sup>	PBG-708	Population Genetics	3(3-0)

#### **Trainings:**

1. One-week training course on, “The Safety Measures in the Use of Radiation in Agriculture and Biology” held at NIAB Faisalabad, from 27<sup>th</sup> Feb to 3<sup>rd</sup> March 2006.
2. Successfully completed core training in "Poly Tunnel Farming,, at University of Agriculture Faisalabad with the collaboration of Horticultural institute of Agricultural Sciences and Agribusiness Support Fund on 16-21 November 2009.
3. Successfully completed core training in "Workplace Hazardous Materials Information System,, (W.H.M.I.S.) at McGill University Canada on March 17,2010.
4. Successfully completed core training in “Biological Safety Cabinets,, and “Introduction to Biosafety,, at McGill University Canada on March 30,2010.
5. Completed training on “Hazardous Waste Management Disposable Training For Laboratory Personnel,, at McGill University Canada in May 2010.
6. Successfully completed 3 days training course in “Cotton Plant Genetic Resources Conservation and Gene – Bank Management,, December 18-20, 2012 at NARC Islamabad.
7. 2<sup>nd</sup> In- Service Faculty Training Program, Department of MMG, University of the Punjab, Lahore (4<sup>th</sup> to 8<sup>th</sup> February, 2013).
8. Indigenous on-Campus Training Program for Management Team December 15<sup>th</sup> to 19<sup>th</sup>, 2014. University of the Punjab in collaboration with Higher Education Commission (HEC)
9. Successfully completed Bilateral Seminar on Hybrid Rice for Pakistan from 21 July, 2017 to 10 August, 2017 in China.

### **Participated in International/National Conferences**

#### **Participated in International/National Conferences, 2020:**

- 1) **Attended International Horticulture Conference as Organizer from 26 to 28 February, 2020 at Institute of Agricultural Sciences, University of the Punjab, Lahore.**

#### **Participated in International/National Conferences, 2019:**

- 1) Attended an International Entomological Congress on “Conversing Emerging Entomological Challenges and their Solutions” April 08-10, 2019, University of Agriculture, Faisalabad.
- 2) Attended an international conference on “Strategic Research on International Cooperative & Development of Honglian Type Hybrid Rice” in Wuhan University China on August 28th - 30th , 2019
- 3) Attended an International Conference on “Recent Innovations in Molecular Sciences” November 6-8, 2019, University of the Punjab, Lahore
- 4) Attended international Conference on Agriculture (5th China Agro Chemical (CAC) Pakistan Summit) organized by Lahore Chamber of Commerce & Industry in collaboration with China Council on November 20, 2019 at Nishat Hotel Johar Town, Lahore

#### **Participated in International/National Conferences, 2018:**

- 1) Attended 1<sup>st</sup> International and 2<sup>nd</sup> conference challenges and opportunities to boost agriculture in changing climate March, 26-28, 2018 organized by college of Agriculture BZU.
- 2) Attended International Horticulture Conference Pakistan 2018 held on April 25-27, 2018 organized by PMAS Arid Agriculture University Rawalpindi, Pakistan
- 3) Attended International conference “ 2<sup>nd</sup> Global conference on Plant Science and Molecular Biology” (GPMB-2018) from 20-22 September, 2018.

#### **Participated in International/National Conferences, 2017:**

- 1) Attended 1<sup>st</sup> International Conference on “Emerging trends in earth and environmental sciences” 9-10, March, 2017 Organized by College for Earth and Environmental Sciences, University of the Punjab, Lahore, Pakistan.
- 2) International Bilateral Seminar on Hybrid Rice for Pakistan from 21 July to 12 August, 2017 in China.
- 3) 2 Acetyl-1-Pyrroline: A key aroma component of aromatic rice and other food products. ( Food Reviews International (Impact Factor) paper reviewed, April, 2017).
- 4) Identification of resistance to bacterial leaf blight in the USDA collard collection. (HORTSCI (Impact Factor) paper reviewed September, 2017).

#### **National Conferences/ Workshop:**

- 5) Participated two days workshop in Invention to Innovation Summit, 2017 Participated in PSF workshop on “Buy and sell technology” March 8-9, 2017 at university of the Punjab
- 6) Participated in National Conference “Challenges and opportunities to boost agriculture in changing climate”
- 7) Participated in workshop on “Fundamentals of Halal Food” April 3, 2017

**Participated in International/National Conferences, 2016:**

- 1) Attended 2nd International Conference on Horticultural Sciences “Production Challenges and Food Security” 18-20, February, 2016 Organized by Institute of Horticultural Sciences, UAF, Pakistan.
- 2) Attended International Conference on “Significance of Potash Use in Pakistan Agriculture 24-25, November, 2016 organized by Institute of Agricultural Sciences, University of the Punjab, Lahore, Pakistan.
- 3) Attended International Entomological Congress on “ One Exclusive Day on Current Scenario and Management of Pink Bollworm 16-18, December, 2016 organized by Pakistan Entomological Society, Department of Entomology, UAF, Pakistan

**National Conferences/ Workshop:**

- 4) Participated two days workshop in Invention to Innovation Summit, 2016 Participated in PSF workshop on “Fund winning opportunities”
- 5) Participated in workshop on “Total Quality Management”

**Participated in International/National Conferences, 2015:**

- 1) Attended 5<sup>th</sup> International Multidisciplinary Conference 29-31 October, 2015 organized by Science International and Imperial College of Business Studies, Lahore, Pakistan.
- 2) Attended 5<sup>th</sup> International and 10<sup>th</sup> National of Pakistan Phytopathological Society on “Crop Protection for Sustainable Agriculture,, organized by Institute of Agricultural Sciences, University of the Punjab, Lahore, Pakistan November 23-25, 2015.

**Participated in International/National Conferences, 2014:**

- 1) Attended International workshop on “Borlaug Global Rust Initiative (BGRI) Program,, held in Obregon, Mexico 22-25 March, 2014 funded by University of the Punjab, Lahore
- 2) Attended International conference on “ Borlaug Summit on Wheat for food security,, held in Obregon, Mexico 22-28 March, 2014 funded by University of the Punjab, Lahore
- 3) Attended International Conference on “Stress Biology and Biotechnology: Challenges & Management,, Organized by: Institute of Agricultural Sciences, University of the Punjab, Lahore. May 21-23, 2014

**Participated in International/National Conferences, 2013:**

- 1) Attended 48th Croatian and 8th International Symposium on Agriculture held in Dubrovnik, Croatia 17-22 of February 2013
- 2) Attended International conference on “Plant Genetics and Breeding Technologies” held in Vienna, Austria 18-20 February 2013
- 3) Participated two days workshop in Invention to Innovation Summit, 9-10 April, 2013 on Exhibition of Indigenous Technologies at University of the Punjab, Lahore
- 4) Estimation of Genetic Divergence in Rice (*Oryza sativa* L.) for resistance to Rice Stem Borer (Pyralidae; Lepidoptera) and its Impact on Paddy Yield

**Participated in International/National/ Trainings Conferences, 2012:**

10. Successfully completed 3 days training course in “Cotton Plant Genetic Resources Conservation and Gene – Bank Management,, December 18-20, 2012 at NARC Islamabad.
11. 2<sup>nd</sup> In- Service Faculty Training Program, Department of MMG, University of the Punjab, Lahore (4<sup>th</sup> to 8<sup>th</sup> February, 2013).
12. Indigenous on-Campus Training Program for Management Team December 15<sup>th</sup> to 19<sup>th</sup>, 2014. University of the Punjab in collaboration with Higher Education Commission (HEC)

**Participated in International/National/ Trainings Conferences, 2010:**

- 1) Attended International Conference American Society of Plant Biologist (ASPB) held in Montreal Canada from July 31 to August 4, 2010.
- 2) Attended 5<sup>th</sup> International Rice Blast Conference held in Little Rock, Arkansas USA from August 10 to August 14, 2010.

**Project Awarded:**

- 1) Screening of diverse germplasm for the genetic studies of drought tolerance in rice (*Oryza sativa* L) (Rs: 500000) 2012.
- 2) Genetic variability analysis of basmati and exotic rice germplasm lines by using various genotypic and phenotypic traits (Rs: 150000) 2012.
- 3) Breeding for micronutrients improvement in rice (*Oryza sativa* L) for better human health (Rs: 150000) 2013.
- 4) Breeding for homozygous resistant populations against rice grain discoloration disease (Rs: 150000) 2014.
- 5) Screening of potential DNA resistant markers associated with rice grain discoloration disease (Rs: 150000) 2015-16.
- 6) Screening, improvement and development of high yielding rice varieties using SSR markers (Rs: 150000) 2016-17.
- 7) Assessment of post-harvest quality in broccoli by silencing ethylene triple response factor (ETR) using floret specific promoter (Rs: 150000) 2016-17.
- 8) **Morphological and pathogenic characterization of discolored resistant rice** (Rs: 150000) 2017-18.
- 9) **Abiotic stress tolerance in Rice** (Rs: 150000) 2020-21.

**Collaborative Research Project Between Punjab University Pakistan and Wuhan University China:** “Heat tolerance genes identification and physiological mechanism analysis from Honglian type hybrid rice source and new hybrid rice variety creations” (Sponsored by Ministry of Sciences and Technology Rs: 4. 253200 million)

**Submitted Projects**

- 1) To Develop Micronutrients Improved Basmati Rice in Pakistan (To be submitted to HEC)
- 2) To develop stem rot resistant rice in Pakistan (To be submitted to PARB)

**Awards:**

- 1) Win HEC 5000, Fellowship.
- 2) Win IRSIP (International Research Support Initiative Program) for foreign training.
- 3) Win Rs: 5000 cash prize on completion of Ph.D Within due time and got appreciation letter from VC University of Agriculture Faisalabad.

- 4) HEC Approved Supervisor 2012.
- 5) Galaxies Star Laureate Award of Who's who in Pakistan 2011.
- 6) Awarded one advance increment in 2012.
- 7) Awarded Annual and performance based increment in 2012.
- 8) Awarded one annual and performance increment on the basis of research performance in 2013.
- 9) Awarded Annual, performance and honorarium based increment in 2014 on research performance.
- 10) Member HEC Curriculum Revision Committee for 2013-14.
- 11) Member Zonal Technical Committee (ZTC) Agriculture Department Gujranwala
- 12) Awarded annual increment in 2015
- 13) Awarded Annual, performance and honorarium based increment in 2016 on research performance
- 14) Awarded **Research Productivity Award (RPA) 2013-2014** on the basis of overall research output in the field of Agricultural Sciences announced by Pakistan Council for Science and Technology (PCST), Islamabad

#### **Students Supervised:**

- 1) **Mr Shakeel Shokat (B.Sc (Hons)Agri) in 2012**  
COMPARISON OF FUNGAL DIVERSITY OF LOCAL AND EXOTIC RICE (ORYZA SATIVA L.) GERMPLASM FOR THEIR SEED HEALTH
- 2) **Miss Sana Siddque (B.Sc (Hons)Agri) in 2012**  
Investigation on the involvement of fungi and bacteria in the grain discoloration of rice (Oryza sativa L)
- 3) **Ruqeya Abdul Majeed (M.Sc (Hons) Agri in 2013**  
Morphological and Molecular Characterization of Curvularia sp. Isolated from rice
- 4) **Anam Nawaz (M.Sc (Hons) Agri in 2013**  
IDENTIFICATION OF PATHOGENIC BACTERIA THAT ASSOCIATED WITH WILT DISEASE OF TOMATO
- 5) **Muhammad Abdullah (B.Sc (Hons)Agri) in 2013**  
Assosiation study of various seed morphological traits of Local and Exotic Rice (Oryza sativa L.)
- 6) **Asad Ullah (B.Sc (Hons)Agri) in 2013**  
Comparative study of various seed physical parameters of local and exotic rice (Oryza sativa L)
- 7) **Hafiz Umar Farooq (B.Sc (Hons)Agri) in 2015)**  
Molecular screening of aroma and resistant xa7 genes against bacterial leaf blight in indigenous & exotic rice germplasm
- 8) **Rabia Mubarik (B.Sc (Hons)Agri) in 2015)**  
Quantitative trait analysis study in early blight of tomato
- 9) **Intezar Hussain (B.Sc (Hons)Agri) in 2015)**  
Screening of F<sub>3</sub> single plant progeny rows of tomato against early blight disease
- 10) **Waqas Ahmad (B.Sc (Hons)Agri) in 2015)**

Screening and Genetic Divergence Study of Rice Genotypes On The Basis Of Various Morphological Traits

- 11) Misbah Sultan (**B.Sc (Hons)Agri in 2015**)  
Screening of early blight tolerant plants in different tomato genotypes
- 12) Quratullain Asghar (**B.Sc (Hons)Agri in 2015**)  
Fungal and bacterial diversity of pathogens isolated from diverse rice germplasm lines
- 13) Iqra Saleem (**M.Sc (Hons) Agri in 2015**).  
Conventional and microsatellite based screening of rice germplasm against blast disease
- 14) Muhammad Imran (**M.Sc (Hons) Agri in 2016**)  
Isolation, identification and management of fusarium oxysporum pv.gladioli causing corm rot of Gladiolus through fungicides, methanolic plant extracts and antagonistic microorganisms.
- 15) Faiza Shafique Khan (**M.Sc (Hons) Agri in 2016**)  
Isolation and characterization of endophytic bacteria from citrus and their pathogenicity test

Sr. No.	Student's Name	Thesis Title	Year
1	Mubarak Ali Aunjum	Revealing the potential of chitinase gene in transgenic potato plants against biotic and abiotic stress	2017
2	Muhammad Shahzad	Screening of rice genotypes ( <i>Oryza sativa</i> L) and efficacy of bio-pesticide against rice leaf folder ( <i>Cnaphalocrocis medinalis</i> ) with DNA quantification	2017
3	Rabia Mubarak	Relationship between disease development and morphological characters of fruit and bulb type vegetables	2017
4	Muhammad Usman Majeed	Phenotypic and pathogenic characterization of grain discoloration resistant rice	2017
5	Barrira Maryum	Development of DNA barcoding system for the identification of World Borocolli species	2017
1	Muhammad Ishtiaq	Analysis of different allelopathic plant extracts and fungal metabolites on rice to control grain discoloration	2018
2	Muhammad Tayyab	Evaluation of rice germplasm for resistance against grain discoloration disease	2018
3	Yasha Jamil	Effect of different biofertilizer on the growth and production of chilli crop	2018
1	Ansa Afzal	Characterization of bacteria causing rice grain discoloration along with DNA finger printing of diverse rice germplasm lines in Pakistan	2019
2	Aqsa Rafiq Khan	Molecular screening of blast resistance genes in Pakistani rice germplasm	2019
3	Ambar Javid	Screening of indigenous and exotic rice germplasm against rice grain discoloration disease	2019



4	Hafsa Saleem	Molecular characterization of Mycoflora causing grain discoloration disease in rice	2019
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**Ph. D students under supervision:**

- 1) **Mr. Abdul Rasheed**
- 2) **Mr. Azhar-u-Din Bhatti**
- 3) **Miss Sumaira Aslam (Co Supervisor)**

**Extra Curricular Activities/Administrative Duties**

- 1) Member of PhD admission committee regular scheme at IAGS, University of the Punjab.
- 2) Overall admission in charge for postgraduate admissions at IAGS.
- 3) Coordinator of PhD admission old scheme at Institute of Agricultural Sciences, University of the Punjab.
- 4) Member purchase Committee at Institute of Agricultural Sciences.
- 5) Worked as a Coordinator for the distribution of laptops at Institute of Agricultural Sciences
- 6) Performed duty on B.A and B.Sc examinations in 2012.
- 7) Working as a Farm In charge at Institute of Agricultural Sciences from 13 September, 2012 to date.
- 8) Editor Agriculture News Letter at Institute of Agricultural Sciences, University of the Punjab, Lahore
- 9) Member Editorial Board of journal Mycopath at Institute of Agricultural Sciences.
- 10) Member Editorial Board of journal of rice research.
- 11) Reviewed various research papers of renowned journals.
- 12) Conduction of examinations

**Techniques**

- PCR Techniques
- Gel Electrophoresis
- Southern Blotting
- Crossing Techniques
- Genomic DNA Extraction
- Gel scanning
- Primer Designing

**Paper published in the year 2020 (Total Impact Factor:22.801)**

Wahab, U., **Ashfaq, M.**, Sajjad, M., Shaheen, S., Sadique, R., Ali, M and Khan, F., 2020. Effects of different plant growth regulators on in vitro growth of Aloe Vera L. Bangladesh Journal of Botany. 49(1): 159-162 (IF:0.214)

**Ashfaq, M.**, Anjum, M.A., Haider, M.S., Ali, M., Mubashar, U., Bashir, U., H.M.U Aslam, H.M.U and Sajjad, M., 2020. ASSOCIATION OF *Cladosporium cladosporioides* BROWN LEAF SPOT OF LADIES PALM IN PAKISTAN. Journal of Animal and Plant Sciences. 30(3): 371-376 (IF:0.529)

**Paper published in the year 2019**

- Ashfaq, M.**, A. Waqas, M.S. Haider, M. Ali, M. Sajjad, F. Khan, S. Shaheen, M.A. Anjum and U. Mubashar 2019. MOLECULAR AND AGRONOMIC CHARACTERIZATION OF SELECTED RICE GERMPLASM UNDER NORMAL AND WATER STRESS CONDITIONS. Pak. J. Agri. Sci., 56(1): 29-36. (IF:0.618)
- Watto, J.I., S. Liaqat, H. Mubeen, **M. Ashfaq**, M.N. Shahid, A. Farooq, M. Sajjad and M. Arif. 2019. Genetic mapping of grain nutritional profile in rice using basmati derived segregating population revealed by SSRs. *Intl. J. Agric. Biol.*, 21: 929–935. (IF: 0.802)
- Maqsood, S., M. Afzal, M.S. Haider, H.A.A. Khan, M. Ali, **M. Ashfaq**, M. Aquee and M.I.Ullah. 2019. Effectiveness of Nuclear Polyhedrosis Virus and *Bacillus thuringiensis* alone and in Combination against *Spodoptera litura* (Fabricius). Pakistan J. Zool. 52(2): 631-641. (IF:0.790)
- Alam, A., S. Shaheen, **M. Ashfaq**, M. Ali, J. I. Watto, M. A. Anjum, F. Khan, S. Maqsood and M. Sajjad. 2019. MICROBIAL EXAMINATION OF MOULD AND YEAST IN FRUIT JUICES. Pak. J. Agri. Sci., 56(3): 715-721. (IF: 0.618)
- Mushtaq, S., M. Shafiq, T. Ashraf, M. S. Haider, **M. Ashfaq\*** and M. Ali. 2019. CHARACTERIZATION OF PLANT GROWTH PROMOTING ACTIVITIES OF BACTERIAL ENDOPHYTES AND THEIR ANTIBACTERIAL POTENTIAL ISOLATED FROM CITRUS. J. Ani. Pla. Sci. 29 (4): 978-991(IF: 0.529)
- Ashfaq, M.**, M. Ali, M. Shahzad, M.A. Anjum, M. Sajjad, M.S. Haider and U. Mubashar 2019. EFFICACY ASSESSMENT OF BIO-PESTICIDES AGAINST RICE LEAF FOLDER, *CNAPHALOCROCIS MEDINALIS* (GUENEE) (LEPIDOPTERA : PYRALIDAE) USING DNA QUANTIFICATION METHOD. Intern. J. Bio. Biotech. 16(2): 391-399. (HEC recognized Y category)
- Shaheen S., M. Jaffer, S. Khalid, M.A. Khan, K. Hussain, M.M. Butt, A.R. Siddique, **M. Ashfaq**, M. Ahmad, M. Zafar, F. Khan. 2019. Microscopic Techniques Used for the Identification of Medicinal Plants: A case study of Senna. Microsc. Res. Tech. 82: 1660-1667. (IF: 1.327)
- Ali, M., Shahzad, **M. Ashfaq**, M. Asrar, A. Gulzar, H.M.U. Aslam. 2019. SCREENING OF DIFFERENT RICE GENOTYPES (ORYZA SATIVA) AGAINST *CNAPHALOCROCIS MEDINALIS* (LEPIDOPTERA: PYRALIDAE) UNDER FIELD CONDITIONS IN LAHORE, PAKISTAN. Pakistan Entomologist. 41(1): 47-50. (HEC recognized Y category)
- S. Ahmad, M.W. Alam, M. Sarwar, A. Rehman, T. Shafeeq and **M. Ashfaq**. 2019. Sustainable management of *Chilo infuscatellus* (Pyralidae, Lepidoptera) by using non-chemical approaches. International Journal of Bioscience. 14(3):396-400.

### **Paper published in the year 2018**

- Khan, N.U. and **Ashfaq, M.** (2018). WTO's Implications on Agriculture Sector in Pakistan: Threats, Opportunities and Possible Strategies. Adv. Life Sci. 5(2): 30-36.
- Riaz, M., K. Zahid, S.A. Chohan, **M. Ashfaq**, M. Ali, R. Siddique, N. Anees, F. Khan. 2018. Enhanced Sodium Chloride disturbs the Genetic stability in *Ocimum tenuiflorum* L. Biologia, 64 (1): 119-128.

- Mushtaq, M., M. Shafiq, **M. Ashfaq**, F. Khan, S. Afzal, U. Hussain, M. Hussain, R.M. Balal and M.S. Haider. 2018. Isolation and morphological characterization of novel bacterial Endophytes from Citrus and evaluation for antifungal potential against *Alternaria solani*. *Biologia*, 64 (1): 111-117.
- Shaheen S, Jaffer M, Aslam B Hussain K , Khan A, **Ashfaq M**, et al. 2018. Microbial assessment of pathogenic bacterial growth in ice cream and kulfa. *Microsc Res Tech*. pp 1-5.
- Sumaira Maqsood\*, Muhammad Saleem Haider, Muhammad Ali, **Muhammad Ashfaq**, Hafiz Azhar Ali Khan, Muhammad Ahmad, Muhammad Bilal Chattha. 2018. Synergistic interaction of *Beauveria bassiana* and *Bacillus thuringiensis* for the control of *Spodoptera litura*. *International Proceeding ICAGAS*. Turkey. Pp. 1159-1173.

#### **Paper published in the year 2017**

- Ashfaq**, M., Anjum, M.A., Hafeez, R., Ali, A., Haider, M. Ali, M. B. Chattha, S. R. Ahmad, F. Ahmad, F.Khan and M. Sajjad. (2017). First Report of *Fusarium equiseti* Causing Brown Leaf Spot of Fishtail Palm (*Caryota mitis*) in Pakistan. *Plant Disease* Vol 101 (5): 840-840. **(IF:3.19)**
- Ashfaq**, M., Haider, M.S., Ali, A., Ali, M., Mubashar, H., Sajjad, M. and Mubashar, U. (2017) DIVERSITY AND CORRELATION ANALYSIS IN BASMATI RICE GERMPLASM. *Bangladesh J. Bot.* 46(2): 565-574. **(IF:0.331)**
- Ashfaq**, M., Mubashar, U., Haider, M.S., Ali, M., Ali, M. and Sajjad, M. (2017) GRAIN DISCOLORATION: AN EMERGING THREAT TO RICE CROP IN PAKISTAN. *The Journal of Animal & Plant Sciences*, 27(3): 696-707. **(IF:0.381)**
- Ashfaq**, M., Haider, M.S., Ali, M., Shaheen, S., Khan, F., Ali, M. and Urooj Mubashar, U. (2017) MOLECULAR DIVERSITY AND HETEROISIS ANALYSIS FOR RICE GRAIN DISCOLORATION. *Pak. J. Agri. Sci., Vol. 54(2)*879-887.. **(IF:0.659)**
- Ashfaq**, M., Rashid, A., Haider, M.S., Ali, A., Shahzad, M., Ali, M., Khan, F., Farooq, H.U. and Mubashar, U. (2017). GENETIC VARIABILITY AND ASSOCIATION STUDY OF SOME QUANTITATIVE TRAITS IN CHICKPEA (*CICER ARIETINUM* L.). *INT. J. BIOL. BIOTECH.*, 14 (2): 279-282. **(HEC Recognized Y category)**
- Ali, M., Khan, H.A.A., Tahir, H.M., Tariq, A., **Ashfaq**, M., Ali, S.W. Gulzar, A., Aslam, H.M.U., Yousaf, U.K.S. and Mubashar, U. (2017). LARVICIDAL POTENTIAL OF DIFFERENT PLANTS EXTRACTS AGAINST THE LARVAE OF MOSQUITO (AEDES AEGYPTI(L.) (CULICIDAE: DIPTERA). *Pak. Entomol.*, 39(1):37-40. **(HEC Recognized Y category)**
- Ashfaq**, M., Asghar, Q.A., Hafeez, R., Ali, A., Haider, M.S., Ali, M., Chatha, M.B., Rasheed, A. and Sajjad, M. (2017). Microbial Diversity Associated With Rice Seeds. *BIOLOGIA (PAKISTAN)*. 63 (2) 161-168.

## Paper published in the year 2016

- Majeed, R.A., Shahid, A.A. **Ashfaq**, M., Saleem, M.Z. and Haider, M.S. (2016). First Report of *Curvularia lunata* Causing Brown Leaf Spots of Rice in Punjab, Pakistan. Plant Disease Vol 100 (1): 219-219. (IF:3.02)
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