

# CURRICULUM VITAE

## **DR. MUHAMMAD BILAL CHATTHA**

(Ph.D. Agriculture)

Assistant Professor (Agronomy)

Cell # 03007665728

Email: bilal.iags@pu.edu.pk



### **Research Interest**

- Enhancement of water and fertilizer use efficiency of various crops through high efficiency irrigation systems.
- Agronomic biofortification of different cereal crops.
- Sustainable crop production.
- Production of bioenergy crops.

### **Job Experience**

#### **A) University of the Punjab, Lahore.**

**ASSISTANT PROFESSOR, (Agronomy) (26-01-2012 to date)**

At Institute of Agricultural Sciences, Lahore.

#### **B) Department of Agriculture, Government of the Punjab.**

##### 1) Agriculture Extension & Adaptive Research Wing

**ASSISTANT RESEARCH OFFICER (Agronomy) (18-06-2007 to 30-08-2011)**

At Adaptive Research Farm, Sargodha.

##### 2) Water Management Wing

**AGRONOMIST (31-08-2011 to 25-01-2012)**

At Water Management Training and Research Institute, Lahore.

### **Academic Record**

<b>Degree</b>	<b>Subject</b>	<b>Board/ University</b>	<b>Year passed</b>
Ph.D Agriculture	Agronomy	UAF	2010
M.Sc. (Hons.) Agriculture	Agronomy	UAF	2005
B.Sc. (Hons.) Agriculture	Agronomy	UAF	2003
F.Sc.	Pre-Medical	BISE FSD	1999
Matric	Science	BISE FSD	1997

## **Professional Trainings/Workshops**

- Attended one - day training course “2019 Hybrid Rice Technology Training Course for Pakistan” being held at Bahria Grand Hotel & Resort, Bahria Town, Lahore on 28th October, 2019 by Hubei Provincial Seed Group Co., Ltd. **CHINA**.
- Attended 5-Days Training Course on “**Adopting Modern Techniques for Development of Agriculture**” at Pakistan Academy for Rural Development, Peshawar, during 18-22 February, 2019.
- Attended 5-Days Training Course on “**Management of Natural Resource (Land, Water and Forest) for Sustainable Development**” at AHK National Center for Rural Development, Islamabad, during 06-10 August, 2018.
- Attended 3-Days Hands on Training workshop on “**Agriculture Production System Simulator (APSIM) Modeling**” August 30- September 01, 2016 held at the University of Agriculture, Faisalabad, Pakistan.
- Participated in the Workshop on “**Total Quality Management**”, January 23, 2016, at Institute of Agricultural Sciences, University of the Punjab, Lahore, Pakistan.
- Attended 1-Day Workshop on “**Dengue Management**” at Institute of Agricultural Sciences, University of the Punjab, Lahore during December 21, 2015.
- Attended 20-Days International Training workshop titled “**Hybrid Rice Technology**” held at Hunan Rice Research Institute, **China**, September 07-26, 2015.
- Attended 1-Day National Workshop on “**Sustainable Production of Pulses**” held at BZU, Bahadur Sub Campus, Layyah. August 11, 2015.
- Attended 1-Day Workshop on “**An Introduction to Next Generation Sequencing and its Application in Agricultural Sciences**” at Institute of Agricultural Sciences, University of the Punjab, Lahore during April, 2015.
- Attended 3-Days International workshop titled “**Biofortification of Staple Crops**” held in the University of Agriculture, Faisalabad, Pakistan, March 29-31, 2015.
- Attended 5- Days Training of 3<sup>rd</sup> Faculty Training Program on **Modules (1) The Learners Psychology (2) Academic Writing: Process and skills**, held at University of the Punjab, Lahore during November, 2014.
- Attended 1-Day workshop titled “**Agronomic, Socio-economic and Policy perspectives on Biochar and C-Market**” held in the University of Agriculture, Faisalabad, Pakistan on May 12, 2014.
- Attended 2- Days Workshop on “**Gas Chromatography**” at School of Physical Sciences, University of the Punjab, Lahore during May, 2014.

- Participated in 4-Day International workshop on “**Biochar in Pakistan: Opportunities and Potential**” held at University of Agriculture, Faisalabad, Pakistan during March, 2014.
- Attended 1-Day Workshop on “**Research Methodology**” at School of Physical Sciences, University of the Punjab, Lahore during December, 2013.
- Attended 2-Days Training Workshop on “**Research Ethics, Turnitin And End Note**” at Department Of Library and Information Sciences, University of the Punjab, Lahore during October,2012.
- Attended 5-Days Training Course on **Planning and Management of Rural Development Projects** at AHK National Center for Rural Development, Islamabad, during August, 2012.
- Attended 6-Days Civil Defence **Basic Nuclear, Biological & Chemical Warfare Course** at Federal Civil Defence Training School Faisalabad during February,2011.
- Attended 1day training on **Vegetable Cultivation** at Vegetable Research Institute AARI, Faisalabad during November, 2010.
- Attended 2 days **WTO/Organic Farming/GAP training** at Punjab Institute of Agriculture Marketing Lahore During 2009
- Attended 4 Days Refresher training Course at In Service Agriculture Training Institute Sargodha during 2009
- Attended 4 Days Refresher training Course at In Service Agriculture Training Institute Sargodha during 2008

## **NATIONAL SEMINARS**

- Participated in the National Seminar on “**Future Outlook & Challenges for the Sustainable Management of Insect Pests: Progress & Prospects**” held on May 02, 2018 at Institute of Agricultural Sciences, University of the Punjab, Lahore.
- Participated in seminar “**Global Halal Industry: Opportunities and Challenges**” held on 29th March 2017 at Institute of Agricultural Sciences, University of the Punjab, Lahore, Pakistan.
- Participated in the seminar on “**Food Integrity**” (**Modern concepts of Food Quality, Safety, Authenticity and Defense**). December 06, 2016 at University of the Punjab, Lahore.
- Participated in 1-Day Seminar on “**Role of Agronomy for Sustainable Agriculture under Climate Change Scenario**” October 18, 2016 at University College of Agriculture, University of Sargodha.

- Participated in the one-day “**IPI-ISES Capacity Building Seminar on Balanced Use of Fertilizers for Quality Produce and Sustainable Agriculture**” held on August 12, 2014 at Serena Hotel, Faisalabad.
- Participated in the one day First National Seminar of Pakistan Allelopathy Society on “**Allelopathy Research in Pakistan: Experiences and Opportunities**” held on December 12, 2013 at University of Agriculture, Faisalabad.
- Participated in the one-day National Seminar on **Developing Local Food Additives/Preservatives** held on November 22, 2012 at University of the Punjab, Lahore.

## **MEMBERSHIPS**

- Life time member the Pakistan Society of Agronomy
- Member American Society of Agronomy **USA**
- Member Crop Science Society of America **USA**
- Member International Society of Horticultural Sciences

## **COUNTRIES VISITED**

- **USA** = 2010, 2015 and 2018
- **CHINA** = 2015
- **MALAYSIA** = 2016
- **BELGIUM** = 2019

## **Conferences/Seminars/Workshops organized**

<b>Sr.No.</b>	<b>International/National</b>
1.	Organized a one-day national seminar as Chief Organizer on “ <b>Looming water crisis in Pakistan, Impact and Solution</b> ”, July 12, 2018 at Lahore Chamber of Commerce and Industries, Lahore.
2.	Organized a one-day International seminar as Chief Organizer on “ <b>Resource Conservation for Sustainable Agriculture &amp; Food Security</b> ”, April 19, 2018 at University of the Punjab, Lahore, Pakistan.
3.	Organized a one-day National seminar on “ <b>Kitchen Gardening and Seed Distribution</b> ”, September 21, 2017 at University of the Punjab, Lahore, Pakistan.
4.	Organized a one-day International seminar as Chief Organizer on “ <b>Prospects of Agricultural Research (Current &amp; Future)</b> ”, August 23, 2017 at University of the Punjab, Lahore, Pakistan.
5.	Organized a one-day National Agribusiness Conference on “ <b>Green Punjab and CPEC</b> ”, May 10, 2017 at Pearl Continental Hotel, Lahore, Pakistan.
6.	Organized a one-day International seminar as Chief Organizer on “ <b>Prospects of Agricultural Research (Current &amp; Future)</b> ”, August 23, 2017 at University of the Punjab, Lahore, Pakistan.

7.	Organized a one-day workshop on “ <b>Floriculture Workshop 2017</b> ”, March 21, 2017 at IAGS, University of the Punjab, Lahore, Pakistan.
8.	Organized a one-day International seminar as Chief Organizer on “ <b>Sustainable production of Maize and Fodder Crops</b> ”, January 10, 2017 at University of the Punjab, Lahore, Pakistan.
9.	Organizer International Conference on “ <b>Significance of Potash in Pakistani Agriculture</b> ”, November 24-25, 2016, at University of the Punjab, Lahore.
10.	Organized a one-day national workshop as Chief Organizer on “ <b>Alternate Crops for the Future of Pakistan</b> ”, May 16, 2016 at University of the Punjab, Lahore, Pakistan.
11.	Member Organizing Committee of 5th International/ 10 <sup>th</sup> National Conference of Pakistan Phytopathological Society on <b>Crop Protection for Sustainable Agriculture</b> , November 23-25, 2015, at University of the Punjab, Lahore, Pakistan.

## **RESEARCH SUPERVISION:**

 **M.Phil./MS Thesis Supervised:**

**Total Number: 06**

M.Phil./MS Students currently under supervision:

**Total Number: 02**

 **Ph.D. Thesis Supervised:**

**Total Number: 02**

Ph.D. Students currently under supervision:

**Total Number: 04**

## **PROJECTS**

- Completed a research project as Principal Investigator, entitled “Improving the Germinability and Vigor Enhancement of Sunflower (*Helianthus annuus* L.) Hybrid Seed under Varying Temperatures through Seed Priming” worth PKR.0.5 million during 2012-13 funded by Higher Education Commission of Pakistan.
- Completed a research project as Principal Investigator, entitled “Improving the Germinability and Vigor Enhancement of Maize (*Zea mays* L.) Hybrid Seed under Varying Temperatures through Seed Priming” worth PKR.0.15 million during 2012-13 funded by University of the Punjab, Lahore.
- Completed a research project as Principal Investigator, entitled “Physio-agronomic response of spring maize (*Zea mays* L.) to foliar application of plant growth promoting substances” worth PKR.0.15 million during 2013-14 funded by University of the Punjab, Lahore.
- Completed a research project as Principal Investigator, entitled “Evaluation of Different Irrigation Schedule and Nitrogen Fertigation Levels for Improving Water Use Efficiency under Various Crops.” worth PKR.3.048 million during 2014-15 funded by **Water Management Training and Research Institute, Punjab, Lahore.**
- Completed a research project as Principal Investigator, entitled “Improving water use efficiency through gated pipe technology (Hydro flume) using different irrigation methods

and water levels for hybrid maize (*Zea mays* L.) worth PKR.0.15 million during 2014-15 funded by University of the Punjab, Lahore.

- Completed a research project as Principal Investigator, entitled “Evaluation of sugar industry by-products as nutrient supplement for sugarcane (*Saccharum officinarum* L.) worth PKR.0.15 million during 2015-16 funded by University of the Punjab, Lahore.
- Completed a research project as Principal Investigator, entitled “Comparative potential of *Moringa olifera* L. leaf extracts from different accessions on wheat (early and late sown) productivity” worth PKR.0.15 million during 2017-18 funded by University of the Punjab, Lahore.
- Completed a research project as Principal Investigator, entitled “Evaluation of Different Planting Geometries and Fertigation Levels under Surface and Subsurface Drip Irrigation System for Improving Water Use Efficiency under Various Crops.” worth PKR.2.212 million during 2017-19 funded by **Water Management Training and Research Institute, Punjab, Lahore.**

### **Presentations/participation in National and International Conferences**

- Participated and presented research paper in 2018 ASA, CSSA and CSA International Annual Meetings held on December 04-07, 2018, at Baltimore, **MD.USA.**
- Participated and presented research paper in the International Horticulture Conference Pakistan 2018 held on April 25-27, 2018, at PMAS Arid Agriculture University Rawalpindi, Pakistan.
- Participated in the International Seminar on Floriculture Industry and Business Opportunities in Pakistan, April 6, 2018, at University of the Punjab, Lahore, Pakistan.
- Participated and presented research paper in 1<sup>st</sup> International Conference on Emerging trends in Earth and Environmental Sciences, March 09-10, 2017, at University of the Punjab, Lahore, Pakistan.
- Participated and presented research paper in 1<sup>st</sup> International & 2<sup>nd</sup> National conference on Challenges and Opportunities to boost agriculture in changing climate. March 26-28, 2018 at College of Agriculture, Baha ud din Zakriya University, Bahadur sub-campus, Layyah.
- Participated and presented research paper in 5<sup>th</sup> International Conference on Food and Nutrition Security. March 7-8, 2017, at Government College University, Faisalabad, Pakistan.

- Participated and presented research paper in National conference on Challenges and Opportunities to boost agriculture in changing climate. March 29-30, 2017 at College of Agriculture, Baha ud din Zakriya University, Bahadur sub-campus, Layyah.
- Participated in the International Conference on Significance of Potash in Pakistani Agriculture, November 24-25, 2016, at University of the Punjab, Lahore, Pakistan.
- Participated in the 2<sup>nd</sup> Pakistan Seed Congress, November 21-22, 2016, at University of Agriculture, Faisalabad, Pakistan.
- Participated in the International Conference on Sustainable Agriculture in Pakistan, November 17-19, 2016, at University of Agriculture, Faisalabad, Pakistan.
- Participated and presented research paper in International Conference on “Biosciences & Medical Engineering, November 10-11, 2016, at Faculty of Biosciences and Medical Engineering, UTM, **Malaysia**.
- Participated and presented research paper in the 3<sup>rd</sup> International Conference on Global Environmental Changes, March 21-22, 2016, at Government College University, Faisalabad, Pakistan.
- Participated in the 5<sup>th</sup> Invention to Innovation Summit 2016, March 2-3, 2016, at University of the Punjab, Lahore, Pakistan.
- Participated and presented research paper in the 2<sup>nd</sup> International Conference on “Horticultural Sciences, February 18-20, 2016, at University of Agriculture, Faisalabad, Pakistan.
- Participated and presented research work in the 5<sup>th</sup> International / 10<sup>th</sup> National Conference of Pakistan Phytopathological Society, November 23-25, 2015, at Institute of Agricultural Sciences, University of the Punjab, Lahore, Pakistan.
- Participated and presented research work in the 10<sup>th</sup> Biennial International Conference of Pakistan Society for Microbiology, March 25-28, 2015, at University of the Punjab, Lahore, Pakistan.
- Participated and presented the research work in the PNW Oilseeds/Direct seeds Conference 2015, January 20-22, 2015. Kennewick, **WA, USA**.
- Participated and presented research paper in the 5<sup>th</sup> International Conference on Agriculture, Food Security & Climate Change, September 09-11, 2014, at The University of Poonch, Rawalakot, Azad Jammu & Kashmir.

- Participated and presented research paper in the International Conference on Stress Biology and Biotechnology Challenges and Management, May 21-23, 2014, at University of the Punjab, Lahore, Pakistan.
- Participated in the International Symposium on Strategies for Overcoming Food Security Problems Through Utilization of Rain-Fed Areas, March 26-28, 2014, at University of Sargodha, Sargodha, Pakistan.
- Participated in the International Conference on Recent Development in Human Nutrition, March 19-20, 2014, at Pearl Continental Hotel, Lahore, Pakistan.
- Participated and presented research paper in the 2<sup>nd</sup> International Conference on “Emerging Horizons of Agricultural Extension for Sustainable Rural Development, February 27-28, 2014, at University of Agriculture, Faisalabad, Pakistan.
- Participated and presented research paper in the 2<sup>nd</sup> International Conference on Global Environmental Changes, February 25-26, 2014, at Government College University, Faisalabad, Pakistan.
- Participated in the International Seminar on Climate Change Adaptation Strategies to Ensure Food Security, Jan 16-17, 2014, at University of Agriculture, Faisalabad, Pakistan.
- Participated in the International Conference of Pakistan Phytopathological Society “Climate Change and Plant Diseases: Challenges and Opportunities”, January 23-25, 2014, at University of the Karachi, Karachi, Pakistan.
- Participated in the DAAD-HEC International Summer School, “Food Security in Times of Climate Change” November 02-05, 2013 at Department of Biosciences, COMSATS Institute of Information Technology, Islamabad, Pakistan.
- Participated in the International Seminar on Climate Change, June 04-06, 2013, at University of Agriculture, Faisalabad, Pakistan.
- Participated and Presented the research paper in the International Conference on Crop Management in Changing Climate, February 11-13, 2013, at University of Agriculture, Faisalabad, Pakistan.
- Participated and Presented the research paper in 42<sup>nd</sup> Annual Meeting of American Society of Sugar Technologist, June 16-18, 2010. Panama City, **Florida, USA**.
- Participated and Presented the research paper in 43<sup>rd</sup> Annual Convention of Pakistan Society of Sugar Technologists, August 14-16.2008, Karachi, Pakistan.



## **Publications**

1. Afzal, M., A.A. Chattha, F. Ahmed, G. Mustafa and **M. Bilal**. **2004**. A medium maturing cane variety SPF-245 for Punjab province. **Pak. Sugar J.** XIX (06): 22-24.
2. Afzal, M., A. A. Chattha, **M. Bilal** and M. Umer. **2007**. Advanced sugarcane production technology. **Pak. Sugar J.** XXII (1): 29-36.
3. Chattha, M. U., A. Ali and **M. Bilal**. **2007**. Influence of planting techniques on growth and yield of spring planted sugarcane (*Saccharum officinarum* L.). **Pak. J. Agri. Sci.**, 44 (3): 452-455.
4. Aslam, M.A. Hameed, A.A. Chattha, **M. Bilal** and M. Umer. **2007**. Role of dry hoeing and 1<sup>st</sup> irrigation in determining weed bio-mass and yield of pre-sown sugarcane for two successive years. **Pak. Sugar J.** XXII (01): 92-96.
5. Hussain, F. M.A. Sarwar, M. Azhar Munir, M. Umer, A. A. Chattha, **M. Bilal** and M. Yasin. **2008**. Role of cane varieties in sugar industry and gur making. **J. Agric. Res.** 46 (2) 171-175.
6. Sarwar, M.A., F. Hussain, A. Ghaffar, M.A. Nadeem, M.M. Ahmad, **M. Bilal**, A.A. Chattha and M. Sarwar, **2008**. Post-harvest studies in sugarbeet (*Beta vulgaris*). **J. Agri. Soc. Sci.**,4:89-91
7. Sarwar, M.A., F. Hussain, M.A. Nadeem, A.Ghaffar, **M. Bilal**, M. Umer and A.A. Chattha **2009**. Performance of different Sugarcane strains for Physico-Chemical characteristics of Jaggery. **J. Agri. Soc. Sci.**,5(1-2):40-42.
8. Sarwar, M.A., F. Hussain, M. Umer, **M. Bilal**, A. Nadeem and A.A. Chattha.**2009**. Comparative efficiency of solid and liquid fertilizers in sugarcane. **Pak. Sugar J.** XXIV (1):6-9.
9. **Chattha, M.B.**, M. Maqsood, A.A. Chattha and M.A. Muddasir. **2010**. Effect of earthing up and fertilizer levels on growth and yield of spring planted sugarcane (*Saccharum officinarum* L.). **J. Agric. Res.** 48(3):327-334.
10. Hassan, I., **M.B. Chattha**, T. H. Chattha and M.A. Ali **2010**. Factors affecting wheat yield. A case study of mixed crops zone of the Punjab. **J. Agric. Res.** 48(3):403-408
11. Sarwar, M.A., N. Fiaz, **M.B. Chattha**, S. Ahmad, M.A. Munir, M.A. Ali, S.A.H. Bukhari and A.A. Chattha. **2011**. Cane juice quality variation at different sampling locations. **Mycopath.**9 (2):73-77.
12. Sarwar, M.A., **M.B. Chattha**, N. Fiaz, S. Ahmad, M.A. Munir, M.A. Ali, S.A.H. Bukhari and A.A. Chattha. **2012**. Response of sugarcane to some commercial fertilizers. **Mycopath.**10 (1):9-11.
13. Mahmood, N., T. Ali, M.S. Bajwa, M. Shahbaz and **M.B. Chattha**. **2013**. Analysis of the adoption of wheat sowing recommendations among small farmers using water saving interventions. **J. Anim. Plant Sci.** 23(1): 309-312. **(I.F. 0.638)**

14. Mahmood A., J. Iqbal, **M.B. Chattha** and S. Azhar **2013**. Evaluation of various herbicides for controlling grassy weeds in wheat. **Mycopath.**11 (1):39-44
15. Anwar, S.A., S. Riaz, C. A. Ahmad, M. N. Subhani and **M.B. Chattha 2013**. Mycoflora associated with stored seeds of soybean. **Mycopath.** 11(2): 85-90
16. Subhani. M.N., S.T. Sahi, M. Safdar, N. Munir, Waseem Abbas and **M. Bilal. 2014**. Evaluation of antifungal effect of different plant extracts for the management of late blight of Potato caused by *Phytophthora infestans* (Mont.) de Bary. **J. Biologically Active Products from Nature.** 4(2):125-135
17. Nawaz, H., N. Hussain, A. Yasmeen, M. Arif, M. Hussain, M.I.A. Rehmani, **M.B. Chattha and A. Ahmad. 2015**. Soil applied zinc ensures high production and net returns of divergent wheat cultivars. **J. Environ Agric. Sci.** 2(1)1-7
18. Manzoor, S.A. S.N. Mirza, M. Zubair, W. Nouman, S.B. Hussain, S. Mehmood, A. Irshad, N. Sarwar, A. Ammar, M.F. Iqbal, A. Asim, M.U. Chattha, **M.B. Chattha**, A.Zafar and R. Abid. **2015**. Estimating genetic potential of biofuel forest hardwoods to withstand metal toxicity in industrial effluent under dry tropical conditions. **Genet. Mol. Res.** 14(3):9543-9554. **(I.F. 0.85)**
19. Nawaz, M., S. Khan, M.U. Chattha, M. Khan, and **M. Bilal. 2015**. Interactive effect of sowing techniques and weed crop competition periods on the performance of spring planted sugarcane (*Saccharum officinarum* L.). **Int. J. Mod. Agric.** 4(3):49-51
20. Habib, A., A. Mahmood, W. R. Arshad, M. Umer, **M. Bilal**, F. Rasul, I.U. Haq and M. Usman. **2016**. Crop losses and varietal response of sugarcane against red rot disease in Pakistan's Punjab province. **Int. Sugar J.** 274-279 **(I.F. 0.181)**
21. **Bilal, M.**, M. Umer, I. Khan, H. Munir, A. Ahmad, M. Usman and R. Iqbal. **2016**. Interactive effect of phosphorous and humic acid on growth, yield and related attributes of maize. **J. Agric. Res.**54(3):433-445
22. Ashfaq, M., M. Rizwan, A. Rashid, M. Akhtar, F. Khan, M. Ali, **M.B. Chattha**, M. Sajjad and U. Mubashar. **2016**. Disease response of exotic rice genotypes against bacterial leaf blight and its effect on various morphological traits. **Pak. J. Phytopathol.**, 28 (2): 269-274
23. Nawaz, M., M.U. Chattha, **M.B. Chattha**, H. Munir and R. Ahmad. **2016**. Sugarcane processing by-product compost supplemented with inorganic fertilizers improve the growth, yield and quality of spring planted sugarcane (*Saccharum officinarum* L.) **J. Agric. Res.** 54(4):631-645
24. Chattha, M.U., M.U. Hassan, I. Khan, **M.B. Chattha**, I. Ashraf, W. Ishaque, M.U. Farooq, M. Usman and M. Kharal. **2017**. Effect of different nitrogen and phosphorus fertilizer levels

- in combination with nitrogen and phosphorus solubilizing inoculants on the growth and yield of mungbean. **Pak. j. life soc. Sci.**, 15(1):31-36
25. **Chattha, M.B.**, I. Khan, A. Mahmood, M.U. Chattha, S.A. Anjum, U. Ashraf, M. Zain and U. Bilal. **2017**. Seed priming with thiourea improves the performance of late sown wheat. **J Agric. Res.** 55(1):29-39
  26. M. Nawaz, M.U. Chattha, **M. B. Chattha**, R. Ahmad, H. Munir, M. Usman, M.U. Hassan, S. Khan, and M. Kharal. **2017**. Assessment of compost as nutrient supplement for spring planted sugarcane (*Saccharum officinarum* L.) **J. Anim. Plant Sci.** 27(1): 283-293. **(I.F. 0.381)**
  27. Chattha MU, Hassan MU, Khan I, **Chattha MB**, Mahmood A, Chattha MU, Nawaz M, Subhani MN, Kharal M and Khan S. **2017**. Biofortification of Wheat Cultivars to Combat Zinc Deficiency. **Front Plant Sci.** 8:281. **(I.F. 4.291)**
  28. Ashfaq, M., M. A. Anjum, R. Hafeez, A. Ali, M. S. 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.** 101(5):840. **(I.F. 3.173)**
  29. Khan, A., M.N. Subhani, **M.B. Chattha**, W. Anwar, and K. Nawaz. **2017**. First report of Whsiker Mold of Citrus (*Citrus sinensis*) caused by *Penicillium ulaiense* in Pakistan. **Plant Disease.** 101(6):1042. **(I.F. 3.173)**
  30. **Chattha, M.B.**, A. Iqbal, M.U. Chattha, M.U. Hassan, I. Khan, I. Ashraf, M. Faisal and M. Usman. **2017**. PGPR Inoculated-seed increases the productivity of forage sorghum under fertilized conditions. **J. Basic Appl. Sci.** 13:150-153.
  31. Naseem, M.K., **M.B. Chattha**, A. Younis, H. Sardar, M.A. Hanif and G. Akhtar. **2017**. Supercritical fluid extraction technology for essential oil extraction of *Murraya exotica*. **Int. J. Biosci.** 10(4):151-159.
  32. Maqsood, M., M.U. Chattha, M.U. Hassan, I. Khan, **M.B. Chattha**, M. Usman, A. Iqbal and M. Jawad. **2017**. Response of Sunflower to different Tillage systems and foliar application of Potassium under water deficit conditions. **INT. J. BIOL. BIOTECH.** 14(1): 265-270
  33. Randhawa, M.S., M. Maqsood, M.A. Shahzad, M.U. Chattha, **M.B. Chattha**, F. Nawaz, S. Yasin, T. Abbas, M.M. Nawaz, R.D. Khan and U. Zulfiqar. **2017**. Light Interception, radiation use efficiency and biomass accumulation response of maize to integrated nutrient management under drought stress conditions. **Turk J. Field Crops.** 22(1), 134-142. **(I.F. 0.474)**
  34. Ashfaq, M., Q.A.A., R. Hafeez, A. Ali, M.S. Haider, M. Ali, **M.B. Chattha**, A. Rasheed and M. Sajjad. **2017**. Microbial diversity associated with rice seeds. **Biologia.** 63(2):161-168.

35. Chattha, M.U., **M.B. Chattha**, I. Khan, U. Anwar, M.U. Hassan, M. Nawaz, S.A. Anjum, A. Mahmood and S. Mirza. **2017**. Effect of seeding rate and seed soaking duration on productivity of relay intercropped wheat in cotton. **Pak. J. Sci.** 69(2):190-194
36. Chattha, M.U., M. Maqsood, **M.B. Chattha**, I. Khan, M.U. Hassan, Q.U. Zaman. M. Usman and M. Maqbool. **2017**. Influence of zinc under deficit irrigation on growth and productivity of hybrid maize. **Pak. J. Sci.** 69(2):323-327
37. Maqsood, M., M.U. Chattha, **M.B. Chattha**, I. Khan, M.A. Fayyaz, M.U. Hassan, Q.U. Zaman and M.U. Chattha. **2017**. Influence of foliar applied potassium and deficit irrigation under different tillage systems on productivity of hybrid maize. **Pak. J. Sci.** 69(3): 317-322
38. **Chattha, M.B.**, M.U. Chattha, M.U. Hassan, I. Khan, M. Nawaz, M.A.U. Khan, M. Aamer and M. Usman. **2017**. Foliar application of growth promoting substances strongly influence the phenology, growth and yield of hybrid maize. **Int. J. Biol. Biotech.**, 14(4):597-602.
39. Chattha, M.U., M.U. Hassan, I. Khan, **M.B. Chattha**, H. Munir, M. Nawaz, A. Mahmood, M. Usman and M. Kharal. **2017**. Alternate skip irrigation strategy ensure sustainable sugarcane yield. **J. Anim. Plant Sci.** 27(5):1604-1610. **(I.F. 0.381)**
40. Nawaz, M., M.U. Chattha, S. Khan, **M.B. Chattha**, M. Ijaz, S. Khan, H. Munir, M.U. Hassan and M.U. Chattha. **2017**. Assessment of Distillery Spent Wash Water as a Potential Bionutrient Supplement for Spring Planted Sugarcane (*Saccharum officinarum* L.).**Philipp Agric Scientist.** 100(4):437-443. **(I.F. 0.248)**
41. Chattha, M.U., I. Khan, M.U. Hassan, M. Nawaz, **M. B. Chattha**, I. Ahmad, N.H. Khan, M. Usman, M. Kharal and A.U. Khan. **2017**. Agronomic appraisal of Amaranth accessions under semiarid conditions of Pakistan. **Pak. j. life soc. Sci.** 15(3):144-149.
42. Ahmad, S., **Chattha, M.B.**, Kaleem, M., Binyameen, M., Haider, M.U., Ali, Q. **2017**. Evaluation of some indigenous plant extracts for the management of onion Thrips (*Thrips tabaci*, Thysanoptera: Thripidae), **Int. J. Biol. Pharm Allied Sci.** 6(10): 2028-2036.
43. Hassan, M.U., M.U. Chattha, **M.B. Chattha**, A. Mahmood and S.T. Sahi. **2018**. Impact of harvesting times on chemical composition and methane productivity of sorghum (*Sorghum bicolor* Moench L.). **Appl. Ecol. Environ. Res.** 16(3): 2267-2276. **(I.F. 0.689)**
44. Hassan, M.U., M.U. Chattha, **M.B. Chattha**, A. Mahmood and S.T. Sahi. **2018**. Bio-methane production from sorghum elite lines under the climatic conditions of Pakistan. **Maydica.**63(1):1-8 **(I.F. 0.375)**
45. Chattha, M.U., I. Khan, M.U. Hassan, **M.B. Chattha**, M. Nawaz, Asif Iqbal, N.H. Khan, N. Akhtar, M. Usman, M. Kharal and M.A. Ullah. **2018**. Efficiency of extraction methods of *Moringa oleifera* leaf extracts for enhanced growth and yield of wheat. **J. Basic Appl. Sci.** 14:131-135

46. Khan, H.A.A., W. Akram, S. Lee, S. Manzoor, S.R. Ayub, K.U. Rehman, S.W. Ali, **M.B. Chattha** and S. Maqsood. **2018**. Monitoring susceptibility to Spinosad in three major stored-product insect species from Punjab, Pakistan. *Pak. J. Zool.* 50(4): 1355-1360 (**I.F. 0.790**)
47. Chattha, M.U., H. Ali, M. Umer Chattha, M.U. Hassan, **M.B. Chattha**, M. Nawaz and S. Hussain. 2018. Combined application of distillery spent wash, bio-compost and inorganic fertilizers improves growth, yield and quality of wheat. *The Journal of Animal and Plant Sciences.* 28(4): 1112-1120 (**I.F. 0.529**)
48. Chattha, M.U., H. Ali, **M.B. Chattha**, M.U. Chattha, M.U. Hassan, M. Nawaz. 2018. Management of sugarcane distillery spent wash for improving the growth, yield and quality of wheat crop. *Appl. Ecol. Environ. Res.* 16(4): 4375-4385. (**I.F. 0.689**)
49. Alam, M.W., A. Rehman, S. Ahmad, M. Sarwar, M.K. Naseem, **M.B. Chattha**, A.U. Malik, S. Ali. 2019. First Report of Botrytis cinerea causing Postharvest Fruit Rot on stored Pomegranates in Pakistan. *Plant Disease.* 103(2). February 2019. (**I.F. 3.583**)
50. Hassan, M.U., M.U. Chattha, I. Khan, **M.B. Chattha**, M. Aamer, M. Nawaz, A. Ali, M.A.U. Khan, T.A. Khan. 2019. Nickel Toxicity in Plants: reason, toxic effects, tolerance mechanisms, and remediation possibilities - a review. *Environmental Science and Pollution Research.* 26(13):12673-12688. 29 March 2019. (**I.F. 2.914**)
51. Hassan, M.U., M.U. Chattha, L. Barbanti, M.B. Chattha, A. Mahmood, I. Khan, M. Nawaz. 2019. Combined cultivar and harvest time to enhance biomass and methane yield in sorghum under warm dry conditions in Pakistan. *Industrial Crops and Products.* 132. 84-91. (**I.F. 4.194**)
52. Hassan, M.U., M.U. Chattha, **M.B. Chattha**, A. Mahmood and S.T. Sahi. **2019**. Chemical composition and methane yield of sorghum as influenced by planting methods and cultivars. *The Journal of Animal and Plant Sciences.* 29(1):251-259 (**I.F. 0.529**)
53. Yousaf, Q., M.N. Subhani, M.Z. Iqbal and **M.B. Chattha**. 2019. Effectiveness of fungicides, methanolic botanical extracts and antagonists against invasive *Phytophthora palmivora* inciting Leaf Spots of Chinese Fan Palm. *Bionature.* 38(6):376-385.
54. Chattha, M.U., M.U. Hassan, L. Barbanti, **M.B. Chattha**, I. Khan, M. Usman, A. Ali, M. Nawaz. 2019. Composted sugarcane by-product press mud cake supports wheat growth and improves soil properties. *International Journal of Plant Production.* 13(3):241-249. (**I.F. 0.961**)
55. Ahmad, S., M.W. Alam, S. Majeed, **M. Bilal**, M. Shafiq, M. Khurshid, M. Sarwar, T. Shafeeq, S. Salman, and Q. Ali. 2019. Study of morphological and qualitative plant traits against the infestation of *Chilo infuscatellus* L. (Pyralidae, Lepidoptera). *Applied Ecology and Environmental Research.* 17(5):7057-7065. (**I.F. 0.689**)

56. Sarwar, M., S. Ahmad, **M.B. Chattha**, M.U. Chattha, M.W. Alam, S. Anjum, T. Shafeeq, M.K. Naseem, and A. Mannan. 2019. Assessment of growth and productivity of Cucumber (*Cucumis sativus* L.) genotypes under salt stress regime. *Applied Ecology and Environmental Research*. 17(5):10793-10806. (I.F. 0.689)