

# CURRICULUM VITAE



**DR. MEHBOOB ALAM**

Associate Professor (Tenured)  
Department of Horticulture  
Faculty of Crop Production Sciences  
The University of Agriculture Peshawar, Pakistan

[http://www.aup.edu.pk/tstaff\\_dept\\_details.php?s\\_id=401&d\\_id=3&f\\_id=2](http://www.aup.edu.pk/tstaff_dept_details.php?s_id=401&d_id=3&f_id=2)

Telephone:

(Off) +92 – 91 – 9216572-78

(Cell) +92 – 313 0946794

Email address: [Mehboobalam7@gmail.com](mailto:Mehboobalam7@gmail.com)  
[Mehboobalam@aup.edu.pk](mailto:Mehboobalam@aup.edu.pk)

## C. V. OF DR. MEHBOOB ALAM

---

### PERSONAL INFORMATION

Father's Name	Gulab Shah
Date of Birth	February 02 <sup>nd</sup> , 1981
Place of Birth	District and Tehsil Peshawar, Pakistan
Sex	Male
Marital Status	Married
N.I.C. No.	173011-426148-1
Correspondence Address	Department of Horticulture Faculty of Crop Production Sciences The University of Agriculture Peshawar Phone: +92-91-9216540
Residential Address	Village Panam dheri, warsak road, Peshawar, KPK, Pakistan Cell #: +92-3479550806

---

### LANGUAGES

English	(Speaking, reading and writing)
Urdu	(Speaking, reading and writing)
Pashto	(Mother tongue) speaking only

---

### EDUCATION

#### **Ph.D. (2009-2014)**

**Microbial Horticulture Laboratory, Department of Biosystems and Technology, Swedish University of Agricultural Sciences.**

**Microbial status of irrigation water as affected by cultural practices: Agronomic aspects.**  
(ISSN 1652-6880), ISBN (print) 978-91-576-7932-1, ISBN (Electronic) 978-91-576-7933-8

*Advisor: Prof. Beatrix Alsanius,*

#### **M.Sc. (Hons) (2005-2007)**

**Department of Horticulture, The University of Agriculture, Peshawar, Pakistan.**  
**Influence of budding dates and rootstocks on growth of Almond.**

*Advisor: Prof. Abdur rab.*

#### **B.Sc. (Hons) (2001-2005)**

**Department of Horticulture, The University of Agriculture, Peshawar, Pakistan.**  
**Response of different Plum Varieties budded on Peach rootstocks.**

*Advisor: Prof. Faridullah Wazir.*

#### **B.Sc. (Hons) Internship project (2004)**

**Laboratory of Micropropagation, Nuclear Institute for Food and Agriculture, Peshawar, Pakistan. Micropropagation of woody plants.**

*Advisor: Dr. Roshan Zameer.*

### **H.S.S.C. (1998-2000)**

Higher Secondary School Certificate from Board of Intermediate and Secondary Education, Peshawar, Pakistan. (Major as Pre-Medical, 1<sup>st</sup> division)

### **S.S.C. (1998)**

Secondary School Certificate from Board of Intermediate and Secondary Education, Peshawar, Pakistan. (Major as Science group, 1<sup>st</sup> division)

---

### **PROFESSIONAL EXPERIENCE**

- I worked as Business Support Officer in Pakistan Tobacco Company (PTC) from 15<sup>th</sup> August 2005 to 23<sup>rd</sup> November 2007.
- I have worked as Drip Agronomist in Royal Abyari from May 2009 to August 2009.
- I worked as Lecturer at the Department of Horticulture, The University of Agriculture, Peshawar, Pakistan (UAP) from January 2009 to April 2014.
- I switched over to Assistant Professor (TTS) at the Department of Horticulture, UAP from May 2014 to June 2020.
- Presently I am working as Associate Professor (Tenured) at the Department of Horticulture, UAP since July 2020.

### **COURSES TAUGHT:**

- Introductory Horticulture (**BSc (Hon)**)
- Principles of Fruit Production (**BSc (Hon)**)
- Minor Fruits (**BSc (Hon)**)
- Principles of Vegetables Production (**BSc (Hon)**)
- Temperate Fruits (**BSc (Hon)**)
- Advance Vegetable Science (**MSc (Hon)**)
- Environmental Horticulture (**MSc (Hon)**)
- Mineral Nutrition of Horticulture Crops (**MSc (Hon)**)
- Special and Minor Fruits (**PhD**)

### **COURSES/TRAININGS ATTENDED:**

- 4-Days training course on **Integrated Rural Development** at **Pakistan Academy for Rural Development Peshawar**.
- 3-Days training on **Fruit orchard management and net farming, Sept 2-4, 2019** organized by Agri. Extension Department, Tribal District South Waziristan.
- Attended one day workshop on **Developing a Winning Research Proposal** held on 26<sup>th</sup> December 2018 at **The University of Agriculture Peshawar-Pakistan**.
- Attended course on **“Horticulture landscape and 3D-tenchnique in real time”** at Department of Horticulture, UAP

### **STUDENTS SUPERVISED/SUPERVISING:**

- **BSc (Hon)**, 07 students supervised
- **MSc (Hon)**, 25 students supervised and 05 under supervision
- **PhD**, 03 students under supervision.

#### **REVIEWER SCIENTIFIC JOURNAL:**

- Science of the total environment
- Sarhad Journal of Agriculture
- Pure and Applied Biology
- Acta Scientiarum Polonorum Hortorum Cultus
- Pakistan Journal of Botany
- Environmental Pollutants and Bioavailability
- Regularly reviewing various projects from Pakistan Science Foundation, Higher Education Commission, etc.

#### **ASSOCIATE EDITOR:**

- Sarhad Journal of Agriculture

#### **RESEARCH PROJECTS:**

- **Principal investigator:**  
HEC, startup research grant for Assistant Professors under IPFP/TTS  
**Project Title:** Microbial status of vegetables irrigated from local irrigation water sources
- **Principal investigator:**  
HEC, National Research Program for Universities  
**Project Title:** Employing plant growth promoting bacteria in phytoremediation of foodborne pathogens and toxic metals from wastewater
- **Co-Principal investigator:**  
HEC, National Research Program for Universities  
**Project Title:** The effect of Brassinosteroid and chitosan on the morphological and biochemical changes in tomato under drought stress
- Focal person from department of horticulture in preparing PC-1 on **Technology Development Centre** and **Business Incubation Center** at The University of Agriculture Peshawar-Pakistan
- Focal person from department of horticulture in preparing PC-1 for **Swat campus**, The University of Agriculture Peshawar-Pakistan

#### **MEMBERSHIP:**

- Member and head of press and publication at Society for Horticulture Development.
- Member of Academic Council of The University of Agriculture Peshawar-Pakistan.
- Member ethical committee at the Department of Horticulture, UAP
- Life time Membership of Pakistan Society for Horticultural Science (PSHS)
- Previously member of International Society of Horticultural Sciences (ISHS)

#### **ADDITIONAL DUTIES:**

- Manager at university sports committee
- Secretary of institutional disciplinary committee at the Department of Horticulture (UAP)

- Secretary of Board of Studies meeting at the Department of Horticulture (UAP)
- Incharge Tissue culture and Environmental Horticulture laboratories

#### **EXAMINER:**

- Act as external examiner of PhD scholars, Department of Environmental Sciences, University of Peshawar-Pakistan
- Actively involved in carrying out BSc (Hon) semester exam, MSc (Hon) entrance exam, Board of studies exam and other semester and annual exams
- Act as DASAR nominee for students thesis defense and Board of studies in other departments at AUP

#### **AWARDS:**

- Overseas PhD scholarship from Higher Education Commission, Pakistan under Strengthening and development of Agriculture University Peshawar, Pakistan.
- Best poster award at 2nd symposium on horticulture in Europe, SHE2012, at Angers (France).
- Postdoc fellowship under PIFI, Chinese Academy of Sciences, December 2017 on “**The endophytic community diversity of wheat in Sichuan-Tibetan-Pakistan plateau and their antagonistic potential against stripe rust**”

**Note:** I won the fellowship award but couldn't join the fellowship.

#### **ACHIEVEMENTS:**

- Established Environmental Horticulture laboratory at the department of Horticulture, The University of Agriculture Peshawar-Pakistan
- Established constructed wetlands at the department of Horticulture, The University of Agriculture Peshawar-Pakistan.

#### **CONFERENCE(S) AND WORKSHOP(S) ATTENDED**

1. Participated in the **International horticulture congress**, in 2010 at **Lisbon (Portugal)**. Poster, Abstract and Oral Presentation on **Decontamination of irrigation water under field conditions**.
2. Participated in the **Microbial horticulture symposium**, in 2011 at **Alnarp (Sweden)**. Poster and Abstract on **Interception of *E. coli* O157:H7 on spinach (*Spinacia oleracea*) as affected by inoculum density and interval to harvest**.
3. Participated in the **II International Conference on Quality Management of Fresh Cut Produce–Freshcut2011**, in 2011 at **Torino (Italy)**. Poster and Abstract on **Interception of *E. coli* O157:H7 on Rucola (*Eruca sativa*) as affected by inoculum density and interval to harvest**.
4. Participated in the **2<sup>nd</sup> symposium on horticulture in Europe, SHE2012**, in 2012 at **Angers (France)**. Poster and Abstract on **Decontamination of irrigation water comparison of stationary and mobile photocatalytic water treatment**.
5. Participated in the **16<sup>th</sup> IUFoST World congress of food science and technology, XVII Latin American seminar of food science and technology-ALACCTA** in 2012 at **Foz do Iguassu (Brazil)**. Poster and Abstract on **Decontamination of irrigation water comparison of stationary and mobile photocatalytic water treatment**.

6. Participated in the **14<sup>th</sup> International symposium on microbial ecology (ISME)** in 2012 at **Copenhagen (Denmark)**. Poster and Abstract on **Leafy vegetable - human pathogen interactions: a farm-to-fork perspective**
7. Participated in the **International congress of plant pathology (ICPP)** in 2013 at **Beijing (China)**. Poster and Abstract on **Interactions between bioactive compounds and *Escherichia coli* O157:H7 and *Listeria monocytogenes* on leafy vegetables as affected by drought.**
8. Poster has been presented by Dr. Lars Morgen at **6<sup>th</sup> Congress of European Microbiologists** in 2015 at **Maastricht (The Netherlands)**. Poster on **Reducing the risk of baby leaf surface bacteria with irrigation restrictions.**
9. Participated in **Food safety workshop-WHO** in April-2015 at **Rehman Medical Institute Peshawar (Pakistan)**. Oral presentation on **Food safety - A special case of ready to eat fruits and vegetables.**
10. Participated in the **7<sup>th</sup> International & 16<sup>th</sup> National conference** in March-2018 at **Peshawar (Pakistan)**. **04** Abstracts and Oral Presentations.

## **PUBLICATIONS**

---

### **Impact Factor**

1. Javed Nawab, Zia Ud Din, Shah Faisal, Sardar Khan, Abid Ali, Zia ur Rehman, **Mehboob Alam**, Amirzeb Khan, Muhammad Amjad Khan, Khalid Khan and Attaullah Khan. **2021**. Farmlands Degradation with Intensive Agricultural Practices and Human Health Risk Assessment: A Case Study of Province Punjab, Pakistan. (Accepted for publication in *Land Degradation and Development*). **(IF: 4.977)**.
2. Hazratullah, A. Muhammad, **M. Alam**, I. Ahmad and A. Jalal. **2021**. Role of beneficial microbes with nitrogen and phosphorous levels on canola productivity. *Brazilian Journal of Biology*. 82, e227703. **(IF: 1.266)**
3. Fahad Noor, Imran Ahmad, **Mehboob Alam**, Abdullah Jan, Khalid Nawab, Abdullah Jalal, Akhtar Zaman, Asim Muhammad, Shahryar Javed, Haider Mukhtar. **2021**. Ascorbic acid prolongs the post harvest life of persimmon. *Fresenius Environmental Bulletin*. 30(06A): 6615-6622. **(IF: 0.553)**.
4. Intikhab Alam, **Mehboob Alam**, Anwarzeb Khan, Saeed ul Haq, Aliya Ayaz, Abdul Jalal and Javaid Akhter Bhat. **2021**. Biochar supplementation regulates growth and heavy metal accumulation in tomato grown in contaminated soils. *Physiologia Plantarum*. 1-12. **(IF: 4.148)**.
5. Zawar Hussain, **Mehboob Alam**, Muhammad Amjad Khan, Muhammad Asif, Muhammad Azhar Shah, Shehnaz Khan, Sardar Khan and Javed Nawab. **2020**. Bioaccumulation of potentially toxic elements in spinach grown on contaminated soils amended with organic fertilizers and their subsequent human health risk. *Arabian Journal of Geosciences*. 13:945. **(IF: 1.327)**.
6. Masood Ahmad, Muhammad Ishtiaq, Izhar Ullah, Abdul Basit, Sultan Akbar Jadoon, Iftikhar Hussain Khalil, Asim Muhammad, **Mehboob Alam**, Imran Ahmad, Muhammad Sajid, Ghulam Nabi and Abdullah Jalal. **2020**. Influence of

Zinc on seed production and fats content of black seed (*Nigella sativa* L.). *Fresenius Environmental Bulletin*. 29(09A): 8094-8103. (IF: 0.553).

7. Anwarzeb Khan, Sardar Khan, Ming Lei, **Mehboob Alam**, Muhammad Amjad Khan and Ajmal Khan. **2020**. Biochar characteristics, applications and importance in health risk reduction through metal immobilization. *Environmental Technology and Innovation*. 20. 101121. (IF: 3.356).
8. **Mehboob Alam**, Zawar Hussain, Anwarzeb Khan, Muhammad Amjad Khan, Abdur Rab, Muhammad Asif, Muhammad Azhar Shah and Asim Muhammad. **2020**. The effects of organic amendments on heavy metals bioavailability in mine impacted soil and associated human health risk. *Scientia Horticulturae*. 262. 109067. (IF: 1.961).
9. **Mehboob Alam**, Khizar Hayat, Izhar Ullah, Muhammad Sajid, Masood Ahmad, Abdul Basit, Imran Ahmad, Asim Muhammad, Sultan Akbar, Zawar Hussain. **2020**. Improving okra (*Abelmoschus esculentus* L.) growth and yield by mitigating drought through exogeneous application of salicylic acid. *Fresenius Environmental Bulletin*. 29(1):529-535. (IF: 0.691).
10. Tehreem Ayaz, Sardar Khan, Amir Zeb Khan, Ming Lei and **Mehboob Alam**. **2020**. Remediation of industrial wastewater using four hydrophyte species: A comparison of individual (pot experiments) and mix plants (constructed wetland). *Journal of Environmental Management*. 255: 109833. (IF: 4.865).
11. Amir Zeb Khan, Sardar Khan, Muhammad Amjad Khan, **Mehboob Alam** and Tehreem Ayaz. **2019**. Biochar reduced the uptake of toxic heavy metals and their associated health risk via rice (*Oryza sativa* L.) grown in Cr-Mn mine contaminated soils. *Environmental Technology and Innovation*. 17: 100590 (IF: 2.800).
12. Muhammad Ali Khan, Muhammad Imtiaz, Adil Hussain, Fazal Jalal, Sikandar Hayat, Sayed Hussain, Fazal Said, **Mehboob Alam** and Rabia Amir. **2019**. Isolation and functional characterization of an Ethylene Response Factor (RhERF092) from rose (*Rosa hybrida*). *Plant Cell, Tissue and Organ Culture*. 140:157-172 (IF: 2.200).
13. **Mehboob Alam**, Muhammad Ayaz Khan, Muhammad Imtiaz, Muhammad Ali Khan, Muhammad Naeem, Syed Asim Shah, Samiullah, Sayed Hamad Ahmad, Lajbar Khan. **2019**. Indole-3-Acetic Acid Rescues Plant Growth and Yield of Salinity Stressed Tomato (*Lycopersicon esculentum* L.). *Gesunde Pflanzen*. :1-9. (IF: 0.789). X
14. Liaqat, A, Ihsan, M. Z., Rizwan, M. S., Mehmood, A., Ijaz, M., **Alam, M.**, Abdullah, M., Wajid, M., Hussain, R., Naeem, M., Yaqub, M. S. **2019**. Inducing effect of chitosan on the physiological and biochemical indices of eggplant (*Solanum melongena* L.) genotypes under heat and high irradiance. *Applied Ecology and Environmental Research*. 17(5):11273-11287. (IF: 0.689).
15. **Mehboob Alam**, Shahzeb, Muhammad Amjad Khan, Imran Ahmad, Muhammad Sajid, Majid S. Hashmi, Asim Muhammad and Liaqat Ali. **2019**.

Microbiological quality of fresh vegetables from selected retail establishments in Peshawar-Pakistan. *Fresenius Environmental Bulletin*. 28(11A):8773-8782. (IF: 0.691).

16. **Mehboob Alam**, Fazal-ur-rehman, Muhammad Ali Khan, Muhammad Sajid, Imran Ahmad, Noor ul Amin, Muhammad Imtiaz, Muhammad Amjad Khan, Wasim Bilal, Babar Hussain, Zakria Bacha and Ahmad Naeem. **2019**. Physicochemical attributes of peach fruit as influenced by application of salicylic acid in cold storage. *Fresenius Environmental Bulletin*. 28(10):7058-7068. (IF: 0.691).
17. **Mehboob Alam**, Maaz Khan, Anwarzeb Khan, Shahzeb, Muhammad Amjad Khan, Abdul Mateen Khattak, Noor ul Amin, Muhammad Sajid. **2018**. Concentrations, dietary exposure and human health risk assessment of heavy metals in market vegetables of Peshawar, Pakistan. *Environmental Monitoring and Assessment*. 190(9):505. (IF: 1.804).
18. Muhammad Amjad Khan, Sardar Khan, Xiaodong Ding, Anwarzeb Khan and **Mehboob Alam**. **2018**. The effects of biochar and rice husk on adsorption and desorption of cadmium on soils with different water conditions (upland and saturated). *Chemosphere*. 193:1120-1126. (IF: 4.208).
19. Muhammad Amjad Khan, Sardar Khan, Anwarzeb Khan and **Mehboob Alam**. **2017**. Soil contamination with cadmium, consequences and remediation using organic amendments. *Science of the total environment*. 601-602:1591-1605. (IF: 4.900).
20. **Mehboob Alam**, Fazali Wahid, Imran Ahmad, Ali Raza Gurmani, Muhammad Sajid, Noor ul Amin and Amjad Ali. **2017**. Effect of pre-soaking agents on salinity stressed cucumber seedlings. *Pakistan Journal of Agricultural Sciences*. 54(4):801-810. (IF: 1.049).
21. Muhammad Ali Khan, Noor ul amin, Imran Ahmad, Muhammad Sajid, Ibadullah Jan, Abdul Mateen Khattak, Juniad Khan, **Mehboob Alam**, Humaira Wasila and Sikandar Hayat. **2016**. Therapeutic horticulture: influencing psychological responses of surgical patients and their environmental assessment scale. *Pakistan Journal of Agriculture Sciences* (53(2): 355-363). (IF: 0.609).
22. Anwarzeb khan, Sardar Khan, **Mehboob Alam**, Muhammad Amjad Khan, Muhammad Aamir, Zahir Qamar, Zahir ur Rehman and Sajida Parveen. **2016**. Toxic metal interactions affect the bioaccumulation and dietary intake of macro- and micro-nutrients. *Chemosphere* (146: 121-128). (IF: 4.208).
23. **Alam, M.**, Ahlström, C., Burleigh, S., Olsson, C., Ahrné, S., El-Mogy, M., Molin, G., Jensen, P., Hultberg, M., and Alsanius, B. W. **2014**. Prevalence of *E. coli* O157:H7 on spinach and rocket as affected by inoculum density and interval to harvest. *Scientia Horticulturae* (165: 235-241). (IF: 1.624).
24. Alsanius, B.W., **Alam, M.**, Ahlström, C., Sylla, J., Rosberg, A.K., Olsson, C., Mogren, L., Ahrné, S., Molin, G. and Jensen, P. **2021**. Microbial community structure of the free water phase in a field irrigation system. (Provisionally accepted for publication in *Science of the Total Environment*). (IF: 4.900).



25. Aneela Shah Bano, Abdul Mateen Khattak, Abdul Basit, **Mehboob Alam**, Syed Tanveer Shah, Naveed Ahmad, Syed Abdul Qadir Gilani, Izhar Ullah, Sumera Anwer, Heba I. Mohamed. Callus induction, proliferation, enhanced secondary metabolites production, and antioxidants activity of *Salvia moorcroftiana* L. as influenced by combinations of auxin, cytokinin, and melatonin. Accepted for publication in *Brazilian Archives of Biology and Technology*.

### **Non-Impact Factor**

---

1. Islam Zeb and **Mehboob Alam**. **2021**. Assessment of heavy metals in irrigation water collected from various vegetables growing areas of swat valley. *Bioscience Research*. 18(2): 1794-1801.
2. Khan, S., F. Aman, M, Ismaeel, Z. Ali, **M. Alam**, S. Iqbal and T. Khan. **2021**. Growth and yield response of pea (*Pisum sativum* L.) cultivars to phosphorus fertilization. *Sarhad Journal of Agriculture*, 37(2): 369-376.
3. Zawar Hussain, **Mehboob Alam**, Izhar Ullah, Imran Ahmad, Muhammad Sajid, Intikhab Alam, Attiq Ur Rehman, Muhammad Azhar Shah and Muhammad Asif. **2020**. Effect of organic and inorganic regimes on growth, production and quality characteristics of cauliflower. *Bioscience research*. 17(2): 1289-1298.
4. Abdul Basit, Hassnain, **Mehboob Alam**, Izhar Ullah, Syed Tanveer Shah, Syed Ali Zuhair and Inayat Ullah. **2020**. Quality indices of tomato plant as affected by water stress conditions and chitosan application. *Pure and Applied Biology*. 9(2): 1364-1375.
5. **Mehboob Alam**, Zawar Hussain, Izhar Ullah, Samiullah, Imran Ahmad, Muhammad Asif, Muhammad Azhar Shah, Syed Qaisar Ali Shah and Johar Raza Khan. **2020**. Effect of growing media on rooting response of tomato (*Lycopersicon esculentum* L.) stem cuttings. *Pure and Applied Biology*. 9(1): 884-896
6. Hassnain, **Mehboob Alam**, Imran Ahmad, Abdul Basit, Izhar Ullah, Noor Alam, Inayat Ullah, Muhammad Areeb Khalid, Bashir Muhammad and Muhammad Shair. **2020**. Efficacy of Chitosan on Performance of Tomato (*Lycopersicon esculentum* L.) Plant under Water Stress Condition. *Pakistan Journal of Agricultural Research*. 33(1): 27-41.
7. Masood Ahmad, Sumbal Ayaz, Sultan Akbar Jadoon, **Mehboob Alam**, Abdur Rab, Iftikhar Hussain Khalil, Gohar Ayub and Hassan Ali. **2019**. Application of maleic hydrazide controlled plant height and ameliorate flower production in local dahlia. *Bioscience Research*. 16(2): 1882-1890.
8. Ibrar Hussain, Sohail Ahmad, Izhar Ullah, Imran Ahmad, **Mehboob Alam**, Sajid Khan, Sumbal Ayaz. **2019**. Foliar application of Chitosan modulates the morphological and biochemical characteristics of tomato. *Asian Journal of Agriculture and Biology*. 7(3): 365-372.

9. Imran Ahmad, Izharullah, Izhar Ullah, Abdul Basit, Rahmat Ullah Khan, **Mehboob Alam**, Fareeda Bibi, Shehryar Javed, Imran Habib Khan, Humaira Wasila and Izhar Ullah. **2019**. Performance of different rootstocks and cultivars on growth and quality components of grafted Tomato. *Bioscience Research*. 16(3): 3241-3250.
10. Zawar Hussain, **Mehboob Alam**, Muhammad Asif, Muhammad Azhar Shah, Shehnaz Khan, Jawad Khan, Islam Zeb, Omer Mumtaz, Ahmad Siyab and Arshad Jalal. **2019**. Dipping of pear fruit (*Pyrus communis* L.) in Calcium Chloride may help in prolonging its storability. *Acta Scientifica Agriculture*. 3(8): 31-35.
11. Muhammad Zakirullah, Sumayya Innayat, Tariq Jan, Muhammad Arif, Muhammad Ali and **Mehboob Alam**. **2018**. The effect of different levels of amino acid and zinc on the quality and quantity of berseem (*Trifolium alexandrinum*). *Asian Journal of Agriculture and Biology*. 6(3):379-384.
12. Muhammad Sajid, Abdur Rab, Ijaz Ahmad Khan, Ibadullah Jan, Noor ul Amin, Abdul Mateen, Hamid Usman, **Mehboob Alam**, Syed Tanveer Shah. **2018**. The pre-harvest foliar application influenced the flower quality and vase life of chrysanthemum cultivars. *Horticulture International Journal*. 2(4):145-152.
13. Izhar Ullah, Javeed Rahman, Sajid Khan, Imran Ahmad, Noor Ul Amin, Muhammad Sajid, Noor Habib, **Mehboob Alam**, Shah Faisal and Fazal-E-Ahad. **2017**. Influence of organic manure on growth and yield of lettuce cultivars. *International Journal of Agricultural and Environmental Research*. 3(3): 260-267.
14. Nadeem Haider, **Mehboob Alam**, Abid Khan, Waseem Haider, Sadiq Hussain and Shah Zeb. **2017**. Influence of humic acid application on phenology, leaf area and production duration of okra (*Abelmoschus esculentus* L.) cultivars. *Pure and Applied Biology*. 6(3): 1010-1020.
15. Nadeem Haider, **Mehboob Alam**, Haji Muhammad, Islam Gul, Saeed Ul Haq, Sadiq Hussain and Abdur Rab. **2017**. Effect of humic acid on growth and productivity of okra (*Abelmoschus esculentus*) cultivars. *Pure and Applied Biology*. 6(3): 932-941.
16. Ibrar Hussain, Imran Ahmad, Noor ul Amin, **Mehboob Alam**, Abdul Mateen Khattak, Muhammad Sajid, Naveed Ahmad, Humaira Wasila, Abdur Rauf, Muhammad Ali, Muhammad Naeem, Rahmatullah Khan, Syed Mubarak Shah, Asad Ullah, Syed Asim Shah, Maaz ur Rahman, Sohail Ahmad, Imran Habib Khan and Izhar Ullah. **2016**. Effect Of Organic Fertilizers On Growth And Yield Of Brassica Rapa Variety Chinensis. *Advances in Environmental Biology*. 10(10): 40-46.
17. Mogren, L., **Alam, M.**, Alsanius, B.W., Boqvist, S. and Vågsholm, I. **2016**. Swiss chard (*Beta vulgaris*) produced under greenhouse conditions – effects of water content in the growing media on the content of bioactive compounds

and the microbiology of the leaf surface. *Acta Horticulturae*. (ISHS) 1120:381-384.

18. Alsanius, B.W., **Alam, M.**, Larsson, C., Rosberg, A.K., Ahrné, S., Molin, G. and Jensen, P. **2011**. Decontamination of irrigation water under field conditions: preliminary results. *Acta Horticulturae*. (ISHS) 922:61-66.

### **Book/Chapter**

---

1. Beatrix W Alsanius, Sammar Khalil, A. Tadesse, Anna-Karin Rosberg, K. J. Bergstrand, Rahel Hartmann, Lars M Mogren, **Mehboob Alam**, M. Grudén, T. Naznin and A. Getahun. Sustainable systems for integrated fish and vegetable production: new perspectives on aquaponics. **2019**. Book *Achieving sustainable greenhouse cultivation*.