CURRICULUM VITAE

Dr Noor Muhammad

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Field	**Crop Physiology**
Objective	To work within dynamic organization to utilize of advanced biotechnological skills for scientific growth career enhancement.
Personal Profile	Nationality: Pakistan Date of Birth: 05-12-1988 Gender: Male Passport No.: YU0157132
Education	**Ph.D. (Plant Science)** Institute of Crop Sciences, College of Agriculture & Biotechnology, Zhejiang University Hangzhou, 310058 PR China, 2014-2018. **Dissertation Title:** Mechanisms of antagonistic interaction between Aluminum (Al) and Manganese (Mn) on growth and physiological traits in barley. **M.Phil. (Plant Science)** Department of Plant Sciences, Quaid-i-Azam University, Islamabad, Pakistan P.O Box 45320, 2011-2013. **Dissertation Title:** Exogenous application of Auxin (Indole-3acetic acid) to ameliorate adverse salt and drought conditions in wheat. **B.Sc. (Hons) Agriculture Science** University of Agriculture Faisalabad, Pakistan, 2006-2010.
Skills	Field crops cultivation, post harvest analysis, measurement of physiological parameters, DNA and RNA extraction, PCR analysis, Protein analysis, Transformation, Transcriptomic analysis, Using Bioinformatics Tools, analyzing data by using Statistical software's.
Research Area	Understanding of plant physiological and biochemical processes through advanced biotechnological skills, Breeding of cotton and barley, Stress Physiology, Plant Nutrition, Heavy Metal toxicity, Plant-microbe interaction

Professional Experience	▪ Working as scientific officer (plant physiology) Central Cotton Research Institute Multan, Pakistan. ▪ 2 year's work experience as research assistant in Plant Physiology Lab, QAU, Islamabad. ▪ Serve as seed analyst in Federal Seed Certification and Registration Department Islamabad, Pakistan.
Membership	▪ Horticultural Society, Pakistan. ▪ Departmental Botanical Society, QAU, Islamabad. ▪ Planterian Society, QAU, Islamabad. ▪ Society of Young Agronomist, UAF.
Conferences and Trainings	▪ 12th National and 3rd International Conference of Botany from 1-3rd September, 2012 at Quaid-i-Azam University, Islamabad ▪ DAAD International summer school,26-29 march 2012,Quaid-i-Azam University Islamabad, Pakistan ▪ International conference on biological resources of Pakistan; Problems, success and future perspectives at University of Arid Agriculture Rawalpindi. 25-27 April 2007.

Oral presentations

1. Ahmad, F., **Muhammad, N.,** Perveen, A., Azam, M., Mehmood, Z. 2020. Role and efficient method of magnesium application in cotton growth and productivity. In, 18th International Congress of Soil Science. Sindh Agriculture University Tando Jam, February 11-13, 2020, p115., 2018, p27.

2. Perveen, A., Ahmad, F., **Muhammad, N.,** Mahmood, Z. 2018. Quantifying stress tolerance in cotton genotypes grown under normal irrigation and water deficit condition. In 2rd Sino-Pak international conference, MNSUA. November 25-27, 2018, p13.

3. Ahmad, F., Perveen, A., **Muhammad, N.** 2018. Heat tolerance in cotton cultivars: Physiological and morphological aspects. In 2rd Sino-Pak international conference, Muhammad Nawaz Shareef University of Agriculture Multan, November 25-27, 2018.

4. **Muhammad, N.,** Ahmad, F., Khan, A.R., Shahzad, K., Akhtar, N., Parveen, A., Shamsi, IH. 2018. Does there exist a natural detoxification mechanism between aluminum and manganese in acidic soils? In 1st International Conference on Soil & Crop Health in Changing Climate. Muhammad Nawaz Shareef University of Agriculture Multan, November 28-29, 2018.

Book Chapters

1. Ahmad, F., Perveen, A., **Mohammad, N.**, Ali, M.A., Akhtar, M.N., Shahzad, K., Danish, S. and Ahmed, N., 2020. Heat stress in cotton: Responses and adaptive mechanisms. In *Cotton production and uses* (pp. 393-428). Springer, Singapore.

2. Hayat, K., Bardak, A., Parlak, D., Ashraf, F., Imran, HF.,Haq, A.,Mian, MA., **Muhammad, N.,** Khan, JA., Mahmood, Z.,Akhtar, N. 2020. Biotechnology for Cotton Improvement.

Publications

1. Karar, H., Bashir, M.A., Khan, K.A., Abbas, G., **Muhammad, N.**, Ghramh, H.A., Khan, F.R. and Al-Kahtani, S., 2021. ALTERNATE HOST PLANT OF PINK BOLLWORM: LADY FINGER (Hibiscus esculentus L.) A POTENTIAL HOST PLANT FOR CARRY-OVER OF PINK BOLLWORM Pectinophora gossypiella (SAUNDERS)(GELECHIIDAE:LEPIDOPTERA). *FRESENIUS ENVIRONMENTAL BULLETIN*, **30:** 10349-10352.

2. Azhar, W., Khan, AR., **Muhammad, N.**, Liu, B., Song, G., Hussain, A., Yasin, MU., Khan, S., Munir, R., Gan, Y. 2020. "Ethylene mediates CuO NP-induced ultrastructural changes and oxidative stress in Arabidopsis thaliana leaves." *Environmental Science: Nano* **1:** 236-248.

3. **Muhammad, N.,** Zvobgo, G., Zhang, G., 2019. A review: the beneficial effect of aluminum on plant growth in acid soil and the possible mechanisms**.** *Journal of Integrative Agriculture* **7:** 1518-1528**.**

4. **Muhammad, N.,** Zvobgo, G., Fu, L., LwalabaWaLwalaba, J., Zhang, G., 2019. Physiological mechanisms for antagonistic interaction of manganese and aluminum in barley. *Journal of Plant Nutrition,* **5:** 467-476.

5. Khan, A.R., Wakeel, A., **Muhammad, N.,** Liu, B., Wu, M., Liu, Y., Ali, I., Zaidi, S.H.R., Azhar, A., Song, G., Wu, J., Gan, Y. 2019., Involvement of ethylene signaling in zinc oxide nanoparticle mediated biochemical changes in Arabidopsis thaliana leaves. *Environmental Science: Nano* **6:** 341-355.

6. Zvobgo, G., LwalabaWaLwalaba, J., Sagonda, T., Mapodzeke, J.M., **Muhammad, N.,** Zhang, G., 2018. Alleviation of arsenic toxicity by phosphate is associated with its regulation of detoxification. *Journal of Integrative Agriculture* (Accepted)

7. Zvobgo, G., LwalabaWaLwalaba, J., Sagonda, T., Mapodzeke, J.M., **Muhammad, N.,** Shamsi, I.H., Zhang, G., 2018. Transcriptomic comparison of two barley genotypes differing in arsenic toxicity exposed to arsenate and phosphate treatments. *Plant Physiology and Biochemistry*, **130:**589-603.

8. Zvobgo, G., LwalabaWaLwalaba, J., Sagonda, T., Mapodzeke, J.M., **Muhammad, N.,** Shamsi, I.H., Zhang, G., 2018. Phosphate alleviates arsenate toxicity by altering expression of phosphate transporters in the tolerant barley genotypes. *Ecotoxicology and Environmental Safety*, **147:**832-839.

9. Lwalaba, J.L.W., Zvobgo, G., Fu, L., Zhang, X., Mwamba, T.M., **Muhammad, N.,** Mundende, R.P.M., Zhang, G., 2017. Alleviating effects of calcium on cobalt toxicity in two barley genotypes differing in cobalt tolerance. *Ecotoxicology and Environmental Safety*, **139:**488-495.

10. Shah, J.M., Bukhari, S.A.H., Zeng, J.B., Quan, X.Y., Ali, E., **Muhammad, N.,** Zhang, G.P., 2017. Nitrogen (N) metabolism related enzyme activities, cell ultrastructure and nutrient contents as affected by N level and barley genotype. *Journal of Integrative Agriculture*, **16:** 190-198.

11. Hameed, A., Karar, H., **Muhammad, N.,** Kainth, R.A., 2016. Varietal response to population fluctuation of insect pests, predators and pollinator fauna associated with berseem (*Trifolium alexandrinum* L) Crop. *Pakistan Journal of Zoology*, **48:** 46-52.

12. Muhammad, N., Cai, S., Shah, J.M., Zhang, G., 2016. The combined treatment of Mn and Al alleviates the toxicity of Al or Mn stress alone in barley. *Acta Physiologiae Plantarum*, **38:** 277.

13. Muhammad, N., Hakim., Quraishi, U.M., Chaudhary, H.J., Munis, M.F.H., 2016. Indole-3-Acetic Acid induces biochemical and physiological changes in wheat under drought stress conditions. *Formerly the Philippine Agriculturist*, **99:** 19-24.

14. Zhang, Q., Hou, C., Shamsi, I.H., Ali, E., **Muhammad, N.,** Shah, J.M., Abid, A.A., 2015. Identification of super antibiotic-resistant bacteria in diverse soils. *International Journal of Agriculture & Biology*, **17:**1133.

15. Ibrahim, T., Bano, A., Chaudhary, H.J., Imran, M., Mehmood, Z., Hassan, S.W., **Muhammad, N**., Naqvi, S.A.H., Munis, M.F.H., 2014. Evaluation of different inoculation methods for the induction of spot blotch caused by *Helminthosporium sativum* in wheat. *Philippine Journal of Crop Science*, **39:** 1-11.

References

Dr. Zhang Guoping Ph.D. advisor	Professor and Ex-dean, Institute of Crop Sciences, College of Agriculture & Biotechnology, Zhejiang University, Hangzhou, China. zhanggp@zju.edu.cn
Dr. Muhammad Farooq Hussain Munis M.Phil. advisor	Assistant Professor, Department of Plant Sciences, Qauid-i-Azam University, isalamabad, Pakistan. farooq_munis@yahoo.com
Dr. Fiaz Ahmad Head of Section	Head Physiology Section, Central Cotton Research Institute, Multan, Pakistan. fiazdrccri@gmail.com