



Resume Summary

Contact Information

Full Name	Muhanad Walid Khaled Akash
Email:	makash@ju.edu.jo
Current Location:	The University of Jordan-Amman, Jordan

Personal Information

Date of Birth	05/08/1973
Gender	Male
Citizenship	Jordanian
Language	Arabic & English

Professional & Educational Details

Work Experience (Years)	15 years
Current Employer	The University of Jordan
Previous Employer	American University of Madaba
Education	Ph.D.
University of Graduation	Louisiana State University-USA

Muhanad W. Akash, Ph.D.
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EDUCATION

Postdoctoral Research Associate in Statistical Genetics, Iowa State University-USA.

Ph.D. in Plant Biotechnology and Statistics, 3.75/4 GPA (*Excellent*), Louisiana State University-USA.

M.Sc. in Applied Statistics, 3.82/4 GPA (*Excellent*), Louisiana State University-USA.

M.Sc. in Crop Science and Production, 3.86/4 GPA (*Excellent*), The University of Jordan-Jordan.

B.Sc. in Plant Science and Production, 80.8% GPA (*Very Good*), The University of Jordan-Jordan.

EMPLOYMENT

- 2015- Present* *Full Professor*, Department of Horticulture and Crop Science / The University of Jordan.
- 2014- 2015* *Visiting Scholar* (Research: Genotyping by sequencing), Louisiana State University.
- 2013- 2014* *Associate Professor*, Department of Biology and Biotechnology / Faculty of Science/ American University of Madaba (On sabbatical leave).
- 2011- 2013* *Associate Professor*, Department of Horticulture and Crop Science / The University of Jordan.
- 2005-2011* *Assistant Professor*, Department of Horticulture and Crop Science / The University of Jordan.
- 2006- Present* Official statistical consultant at the Deanship of Academic Research/ The University of Jordan.
- 2004- 2005* *Assistant Professor*, Department of Biotechnology and Genetic Engineering/ Faculty of Science/ Philadelphia University.
- 2003-2004* *Postdoctoral Research Associate* (Research: Statistical genetics) Iowa State University.
- 1999-2003* *Research assistant*, Louisiana State University.

TEACHING EXPERIENCE

At American University of Madaba

Plant Biology (0201221), B.Sc. level
Plant Physiology (0201321), B.Sc. level
Applied Plant Biology (0201323), B.Sc. level
Basic Biotechnology (0201362), B.Sc. level
General Biology (020101), B.Sc. level
Plant Biology Lab (0201222), B.Sc. level
Plant Physiology Lab (0201322), B.Sc. level

At The University of Jordan

Molecular Genetics (0601737), M.Sc. level
Plant Biotechnology (0601743), M.Sc. level
Quantitative Genetics in Plant Improvement (0601933), Ph.D. level
Biotechnology (0601781), M.Sc. level
Bioinformatics (0601743), M.Sc. level
Molecular Plant Breeding (0601784), M.Sc. level
Applications in Biotechnology (0601783), M.Sc. level
Design and Analysis of Experiments II (0641901), Ph.D. level
Design and Analysis of Experiments I (0641701), M.Sc. level
Plant Genetics (0631240), B.Sc. level
Plant tissue culture (0601783), M.Sc. level
Plant Breeding, (0631440), B.Sc. level

At Philadelphia University

Basic Genetics (240231), B.Sc. level
Molecular Genetics as special topics (240497), B.Sc. level
Plant Biotechnology (240361), B.Sc. level
General Biology I (240101), B.Sc. level
General Biology II (240102), B.Sc. level
Practical Genetic (240232), B.Sc. level

PUBLICATIONS

1. Akash, M., Awad, N. and Kasrawi, M., 2020. Genetic diversity among snake melon landraces (*Cucumis Melo* Var. *Flexuosus*) using molecular descriptors. *Plant Biosystems-An International Journal Dealing with all Aspects of Plant Biology*, 154: 206-212.
2. Aburumman, A., Migdadi, H., Akash, M., Al-Abdallat, A., Dewir, Y.H. and Farooq, M., 2020. Detection of genetically modified maize in Jordan. *GM Crops & Food*, pp.1-7.
3. Okonji, C.J., Ajayi, E.O., Adewale, B.D., Oikeh, S.O., Akash, M.W. and Ogundeji, A.J., 2020. Performance of upland rice as influenced by varying row ratios in rice/okra intercrop. *Journal of Crop Improvement*, pp.1-10.
4. Abu-Zanat, M.M.W., Al-Ghaithi, A.K. and Akash, M.W., 2020. Effect of Planting Atriplex seedlings in micro-catchments on attributes of natural vegetation in arid rangelands. *Journal of Arid Environments*, 180, p.104199.
5. Akash, M., Saoub, H., Alhassan, L.H., Zatimeh, A., Hasan, S. and Al-Antary, T.M., 2019. GENETIC AND PHENOTYPIC PARAMETERS FOR WILD AVENA SPECIES USING AFLP MOLECULAR MARKERS. *FRESENIUS ENVIRONMENTAL BULLETIN*, 28(11), pp.8292-8300.
6. Al-Sayaydeh, R., Al-Bawalize, A., Al-Ajlouni, Z., Akash, M.W., Abu-Elenein, J. and Al-Abdallat, A.M., 2019. Agronomic Evaluation and Yield Performance of Selected Barley (*Hordeum vulgare* L.) Landraces from Jordan. *International Journal of Agronomy*, 2019.

7. Shiyab, S., Al Antary, T.M., Othman, Y., Alshomali, I., Hasan, S. and Akash, M., 2019. EVALUATION OF PHENOTYPE AND GENOTYPE CHARACTERISTICS OF SELECTED CARROT (*DAUCUS CAROTA L.*). FEB-FRESENIUS ENVIRONMENTAL BULLETIN, p.7523.
8. Shiyab, S., Al-Qarallah, B. and Akash, M., 2019. Influence of salinity on growth and organic compounds content of carrot (*Daucus carota L.*). *Acta Scientiarum Polonorum-Hortorum Cultus*, 18: 85-96.
9. Altamari, A.M., Kasrawi, M., Akash, M. and Al Antary, T.M., 2019. PERFORMANCE OF SINGLE, TRIPLE AND DOUBLE CROSS HYBRIDS IN BEIT ALPHA CUCUMBER (*CUCUMIS SATIVUS L.*). *FRESENIUS ENVIRONMENTAL BULLETIN*, 28: 10068-10075.
10. Al-Awaida, W.J., Zihlif, M.A., Al-Ameer, H.J., Sharab, A., Akash, M., Aburubaiha, Z.A., Fattash, I.A., Imraish, A. and Ali, K.H., 2019. The effect of green tea consumption on the expression of antioxidant - and inflammation - related genes induced by nicotine. *Journal of food biochemistry*, 43: e12874.
11. Sandhu, S.K., Kang, M.S., **Akash, M.W.** and Singh, P., 2019. Selection indices for improving selection efficiency in Indian mustard. *Journal of Crop Improvement*, 33: 25-41.
12. **Akash, M.**, Abu Hussein M., Al-Abdallat, A.M., Shiyab, S., and Zatimeh, A., 2018. Genetic and phenotypic diversity among local okra (*Abelmoschus esculentus L.*) landraces using AFLP markers. *Research Journal of Biotechnology*, 13: 1-13.
13. Al-Awaida, W., Al-Hourani, B.J., **Akash, M.**, Talib, W.H., Zein, S., Falah, R.R. and Aburubaiha, Z., 2018. In vitro anticancer, anti-inflammatory, and antioxidant potentials of *Ephedra aphylla*. *Journal of cancer research and therapeutics*, 14: 1350.
14. Saleh, M., **Akash, M.** and Ondier, G., 2018. Effects of temperature and soaking durations on the hydration kinetics of hybrid and pureline parboiled brown rice cultivars. *Journal of Food Measurement and Characterization*, 12: 1369-1377.
15. Poudyal, D., Akash, M., Khatri, L., Shrestha, D.S. and Uptmoor, R., 2017. *Solanum habrochaites* introgression line grafted as rootstock in cultivated tomato maintains growth and improves yield under cold and drought stresses. *Journal of Crop Improvement*, pp.1-19.
16. Al-Abdallat, A.M., Karadsheh, A., Hadadd, N.I., **Akash, M.W.**, Ceccarelli, S., Baum, M., Hasan, M., Jighly, A., Elenein, J.A. 2017. Assessment of genetic diversity and yield performance in Jordanian barley (*Hordeum vulgare L.*) landraces grown under Rainfed conditions. *BMC plant biology*. 17:191.
17. Ghidan, A.Y., Al-Antary, T.M. Awwad, A.M. and Akash, M.W. 2017. Aphidicidal potential of green synthesized magnesium hydroxide nanoparticles using *olea europaea* leaves extract. *ARNP Journal of Agricultural and Biological Science*. 12: 293-301.
18. Damra, E. M., Kasrawi, M., and Akash, M. W. 2017. Development of Scar Marker Linked to Heat Stress Tolerance in Tomato. *International Journal of Management and Applied Science*. 3:14-22.
19. Saleh, M., Meullenet, J.F., Toker, T. and **Akash, M.**, 2017. Water to rice ratio and cooked rice texture's liking-internal preference mapping approach. *Quality Assurance and Safety of Crops & Foods*, 9(4), pp.413-424.
20. Parhe, S.D., Chimote, V.P., Deshmukh, M.P., Chandra, K. and **Akash, M.**, 2017. Marker-assisted pyramiding of four QTL/genes for Asian rust (*Phakopsora pachyrhizi*) resistance in soybean. *Journal of Crop Improvement*, 31(5), pp.689-711.
21. Al-Abdallat, A.M., Shibli, R.A., **Akash, M.W.**, Rabbaa, M. and Al-Qudah, T., 2017. In Vitro Preservation of Transgenic Tomato (*Solanum lycopersicum L.*) Plants Overexpressing the Stress-Related SIAREB1 Transcription Factor. *International journal of molecular sciences*, 18(7), p.1477.
22. **Akash, M.W.**, Al-Awaida, W., Ateyyeh, A., Al-Debei, H., Saleh, M., Zatimeh, A., Salameh, N., Alawin, M. and Hasan, S.M. 2017. Exploring genetic variations in faba bean (*Vicia faba L.*) accessions using newly developed EST-SSR markers. *Pakistan Journal of Botany*. 49: 667-672.
23. Al- Baba, H., Shibli, R.A., **Akash, M.**, Al-Qudah, T.S., Tahtamouni, R.W., & Al- Ruwaiei, H. 2015. Cryopreservation and Genetic Stability Assessment of Threatened Medicinal Plant (*Ziziphora tenuior L.*) Grown Wild in Jordan. *Jordan Journal of Biological Sciences*. 8: 247-256.

24. **Akash, M.W.**, Al-Banna, L., Al-Awaida, W., & Hidmi, T. 2014. Differentially expressed TDFs by cDNA-AFLP in tomato infected with *Fusarium oxysporum* f. sp. *lycopersici*. *Research on Crops*. 15: 423-431.
25. **Akash, M.W.**, 2014. Quantitative trait loci associated with agronomic traits of barley (*Hordeum vulgare* L.). *Journal of Crop Improvement*. 28: 390-405.
26. Saleh, M, **Akash, M.**, Al-Dabbas, M., & Al-Ismail K., 2014. Sesame-Oil-Cake (SOC) impacted consumer liking of a traditional Jordanian dessert; A mixture response surface model approach. *Life Science Journal* 11, 38-44.
27. Saleh, M., Abu-Waar, Z., **Akash, M.**, & Al-Dabbas, M., 2014. Effect of Stabilized Rice Bran Fractions on the Formation of Rice Flour Pasting Properties. *Cereal Chemistry*. 91, 603-609.
28. Al-Awaida, W., **Akash M.**, Aburubaiha, Z., Talib, W.H., & Shehadeh, H., 2014. Chinese green tea (Lung Chen) consumption reduces oxidative stress, inflammation and tissues damage in smoke exposed rats. *Iran J Basic Med Sci* 17: 740-746.
29. Al-Awaida, W., & **Akash, M.W.** 2014. Protective role of aqueous medicinal herbal extracts against oxidative stress on Glucose-6-phosphate dehydrogenase activity and RBC fragility. *Life Science Journal* 11, 385-391.
30. Al-Awaida, W., & **Akash, M.W.** 2014. Biochemical and hematological indicators of acute and chronic cases of Mediterranean G6PD deficiency patients from southern Jordan. *Life Science Journal* 11, 371-377.
31. **Akash, M.W.** 2013. Development of SCAR markers for molecular tagging of drought tolerance QTL in barley. *Life Science Journal* 10, 1056-1060.
32. Kumar, B., Gupta, E., Mali, H., Singh, H. P., & **Akash, M.** 2013. Constant and alternating temperature effects on seed germination potential in *Artemisia annua* L. *Journal of Crop Improvement* 27, 636-642.
33. Al-Zomor, R., Khlaif, H., & **Akash, M.** 2013. Detection and identification of *Erwinia Carotovora* Subsp. *Atroseptica* (Van Hall, 1902) the causal agent of potato blackleg by RFLP-PCR. *Jordan Journal of Agricultural Sciences* 9, 170-183.
34. **Akash, M.W.**, Shiyab, S. M., & Saleh, M. I. 2013. Yield and AFLP analyses of inter-landrace variability in okra (*Abelmoschus esculentus* L.). *Life Science Journal* 10, 2771-2779.
35. Shiyab, S., M. Shatnawi, R. Shibli, N. Al Smeirat, J. Ayad, & **M.W. Akash**. 2013. Growth, nutrient acquisition and physiological responses of hydroponic growth tomato to sodium chloride salt induced stress. *Journal of Plant Nutrition* 36, 1-12.
36. Saoub, H. M., **Akash, M.W.**, & Ayad, J.Y. 2012. Agronomic potential of vetch landraces from Jordan. *Research on Crops* 13, 206-213.
37. Saoub, H. M., & **Akash, M.W.** 2012. Variations among two vetch landrace species in Jordan. *Journal of Food, Agriculture & Environment* 10, 763-767.
38. **Akash, M.W.**, & Myers. G. 2012. The development of faba bean expressed sequence tag–simple sequence repeats (EST-SSRs) and their validity in diversity analysis. *Plant Breeding* 131, 522-530.
39. Shiyab, S., M. Shatnawi, R. Shibli, M. Al-Zweiri, **M.W. Akash** & T. Aburijai. 2012. Influence of developmental stage on yield and composition of *Origanum syriacum* L. oil by multivariate analysis. *Journal of Medicinal Plants Research* 6, 2985-2994.
40. Abu-Rayyan, A and **M.W. Akash**. 2012. Onion seed germination as affected by temperature and light. *International Journal of Vegetable Science* 18, 49-63.
41. **Akash, M.W.** 2011. Modeling and maximizing AFLP pre-amplification yield using response surface methodology with covariate. *Journal of Food, Agriculture and Environment* 9, 1114-1147.
42. Al-Abdallat, A., Al-Debei, H. **Akash, M.W.** Misbeh, S. & Kvarnheden. A. 2011. Complete nucleotide sequences and construction of infectious clones of two Jordanian isolates of *Tomato yellow leaf curl virus*. *Jordan Journal of Agriculture Sciences* 7, 273-283.
43. Abu-Amer, J.H., Saoub, H.M. **Akash, M.W.** & Al-Abdallat A.M.. 2011. Genetic and phenotypic variation among faba bean landraces and cultivars. *International Journal of Vegetable Science* 17, 45-59.

44. Al-Dabbas, M.M., Ahmad, R. Ajo, R.Y., Abulaila, K. **Akash M.W.** & Al-Ismail. K. 2010. Chemical composition and oil components in seeds of *Moringa peregrine* (Forssk) Fiori. *Crop research* 40, 161-167.
45. Rawashdeh, I.M. A. Amri, N.Q. Rawashdeh, and **M.W. Akash**. 2010. Genetic relatedness among Date Palm cultivars in Jordan using amplified fragment length polymorphism (AFLP) markers. *Dirasat* 37, 29-37.
46. **Akash, M.W.** 2010. Identifying QTL controlling kernel color in barley. *Journal of Crop Improvement* 24, 219-227.
47. **Akash, M.W.** 2010. Assessment of selected wheat cultivars for drought tolerance using AFLP markers and agronomic traits. *Crop Research* 39, 1-8.
48. Ghaleb, W. Sh., J. S. Sawwan, **M.W. Akash**, and A. M. Al-Abdallat. 2010. In vitro response of two citrus rootstocks to salt stress. *International Journal of Fruit Science* 10, 40-53.
49. **Akash, M.W.**, and M.S. Kang. 2010. Molecular clustering and interrelationships among agronomic traits of Jordanian barley cultivars. *Journal of Crop Improvement* 24, 28-40.
50. **Akash, M.W.**, A. Al-Abdallat, H. Saoub, and J. Ayad. 2009. Molecular and field comparison of selected barley cultivars for drought tolerance. *Journal of New Seeds* 10, 98-111.
51. **Akash, M.W.**, M.S. Kang, and G.O. Myers. 2009. GGE-biplot analysis of wheat cultivars evaluated in a multi-environment trial. *Journal of New Seeds* 10, 88-97.
52. Myers, G.O., B. Jiang, **M.W. Akash**, A. Badigannavar and S. Saha. 2009. Chromosomal assignment of AFLP markers in Upland Cotton. *Euphytica* 165, 391- 399.
53. Zhang, N., Y. Xu, **M. Akash**, S. McCouch, and J.H. Oard. 2005. Identification of candidate markers associated with agronomic traits in rice using discriminant analysis. *Theoretical and Applied Genetics* 110, 721- 729.

PROFESSIONAL SKILLS

- Extensive experience in laboratory experiments in molecular biology including but not limited to Loci identification, molecular marker development, and marker assisted selection using conventional and IRDye AFLP, M13 tailed SSR, SCAR, Gene derived SSR, cDNA AFLP markers, cloning and bacterial transformation, genotyping by sequencing.
- Extensive experience in statistical analysis for wide range of experiments: life sciences and biomedical studies.
- Teaching certificate issued by The Louisiana State University English Department.
- Member of the Editorial Board of *Journal of Crop Improvement*.-USA.
- Highly qualified in Statistical Analysis Software (SAS) and SPSS.
- Statistical consult at the local, regional and international levels

Membership of Professional societies

- The Virtual Natural Council for Biotechnology
- American Statistical Association

ATTENDED TRAINING COURSES

- Markov Chain Monte Carlo for Genetics, 2004. North Carolina, USA.
- Advanced Pedigree MCMC, 2004. North Carolina, USA.
- Introduction to SAS/SQL Processing, 2003. Louisiana, USA.
- SAS® System Programming Efficiencies: Tips & Techniques, 2003. Louisiana, USA.

Graduate student supervision

- Supervised four Ph.D. and twelve M.Sc. students.

Honors and awards

- The University of Jordan award in recognition of outstanding researcher-2011
- The University of Jordan award in recognition of outstanding researcher-2010
- The Summer Institute in Statistical Genetics Scholarship, Bioinformatics Research Center, North Carolina State University
- Mott Meritorious graduate student award in recognition of outstanding achievements and contributions