

Assiut University
Department of Genetics
Assiut, 71526
Egypt

Email: mkhirshy@aun.edu.eg
Phone: 0020882332631
Mobile: 00201098741898
Fax: 0020882331384



Muhammad Youssef, Ph.D. in Biotechnology

Education

- Feb 2008 – Oct 2010* **Centro de Investigación Científica de Yucatán**
Ph.D., Genetic diversity and Embryogenesis
Mérida, Mexico
- Sep 2000 – May 2004* **Assiut University**
M.Sc., Genetics (Plant tissue culture and molecular biology)
Assiut, Egypt
- Sep 1995 – Jun 1999* **Assiut University**
B.Sc., Genetics
Assiut, Egypt

Theses

- Muhammad Youssef: *Analysis of Genetic Diversity and Somaclonal variation in Banana Using Molecular Markers*. 10/2010, Degree: Ph.D., Supervisor: Dra. Rosa M Escobedo-GM, Dr. Andrew C James
- Muhammad Youssef: *Improvement of Psidium guajava using Micropropagation*. 04/2004, Degree: MSc, Supervisor: Dr. Muhammad El-helw, Dr. Adel S Taghian, Dr. Hamdy M El-Aref

Research Experience

- Feb 2014 – Jan 2015* **PostDoc Position**
Centro de Investigación Científica de Yucatán, Unidad de Bioquímica y
Biología Molecular de Plantas
Mérida, México
TWAS-CONACyT fellowship
- Oct 2007 – Oct 2010* **Ph.D. Student**
Centro de Investigación Científica de Yucatán, Unidad de Bioquímica y
Biología Molecular de Plantas
Mérida, Mexico

Occupation

<i>Nov 1999 – June 2004</i>	Demonstrator Genetics Department, Faculty of Agriculture, Assiut University Assiut, Egypt
<i>June 2004 – March 2011</i>	Assistant lecturer Genetics Department, Faculty of Agriculture, Assiut University Assiut, Egypt
<i>March 2011 – Aug 2016</i>	Lecturer Assiut University, Faculty of Agriculture, Department of Genetics Assiut, Egypt
<i>September 2016 – Aug 2021</i>	Associate Professor Assiut University, Faculty of Agriculture, Department of Genetics Assiut, Egypt
<i>September 2021 – present</i>	Professor Assiut University, Faculty of Agriculture, Department of Genetics Assiut, Egypt

Work Experience

- Member in the biotechnology laboratory, Genetics Dept., since May 2005.
- Contribution and training in "Principle of Molecular Biology", Organized by Biotechnology Lab. Genetics Dept., Assiut Univ. (8th-10th Sept. 2007).
- Contribution in the organization of the 2nd International Symposium on Guava and Other Myrtaceae 2008, Mérida, Mexico. (November 10th-13th, 2008).
- Contribution in the organization of the "Casa Abierta (Open Day)", Yucatan Center for Scientific Research, Mérida, Mexico. (November 19th, 2010).
- Coordination of the First Ibn-Sina Online Conference (ISOC), Plant and Animal Biology, World Wide Web. 1st - 15th January 2011.
- Coordination of the web page designing of Agric. Fac., Assiut Univ. since January 2011.
- Contribution and training in "Applications of Molecular Markers in Biology", Organized by Biotechnology Lab. Genetics Dept., Assiut Univ. (16th-19th April 2011).
- Contribution in the organization of the "5th Scientific Conference of Young Scientists 2011, Faculty of Agriculture, Assiut University, Egypt. (May 8th, 2011).
- Coordination and training in "Adobe Photoshop®" Training Course, Organized by the computer center, Faculty of Agriculture, Assiut University, Egypt. (March 17th-22nd, 2012).
- Contribution in the organization of the "6th Scientific Conference of Young Scientists 2012, Faculty of Agriculture, Assiut University, Egypt. (May 13th, 2012).
- Contribution in the organization of the "6th Scientific Conference of Agricultural Sciences 2012, Faculty of Agriculture, Assiut University, Egypt. (October 13th-14th, 2012).
- Supervision of Molecular Biology lab. (Central laboratories), Faculty of Agriculture, Assiut University, Nov 2012 – Jan 2014.
- Contribution in the training course "Bioinformatics and data analysis", Organized by Biotechnology Research Center, Suez Canal University, Ismailia. (December 9th-10th, 2015).

- Contribution in the training course "Applications of Molecular Markers in Biology", Organized by Biotechnology Lab. Genetics Dept., Assiut Univ. (29th-31st May 2016).
- Contribution in the training course "Principles and Applications of Bioinformatics", Organized by Animal wealth breeding and improvement unit, Faculty of Veterinary Medicine, Suez Canal University, Ismailia. (October 30th-2nd November, 2016).

Teaching Experience

Teaching the following courses since March 2011:

a- Undergraduate:

- 1301-Principles of Genetics
- 1102-Genetic Engineering
- 2102-Tissue Culture and Genetic Engineering
- 2255-Computer Applications in Genetics and Biotechnology
- 2216-Bio-techniques and Genetic Improvement
- 2123-Animal Genetics
- Plant and Genetics (Dental Fac. Students)
- Bioinformatics (Biotechnology program, Sohag Univ.)

b- Postgraduate:

- 126-Genetics and Biotechnology
- 202-Special Studies (Applications of tissue culture and molecular analysis in crop improvement)
- 199-Special Studies (Applications of biotechnology in fruit trees improvement)
- 199-Special Studies (Discrimination among plant genotypes using molecular markers)
- 191-Plant Genetics
- 196-Discussion
- 201-Discussion
- 512-Bioinformatics

Attended Training Courses

a- Scientific training courses:

- 1- Molecular Techniques in Nucleic Acids and Proteins. *Organized by IGSR, Alexandria University, Alexandria, Egypt (19th-23rd August 2001).*
- 2- Introduction to Molecular Biology Techniques. *Organized by AGERI in collaboration with Midwest universities consortium for international activities, Giza, Egypt (17th-18th April 2004).*
- 3- Plant Tissue Culture and Transformation Techniques. *Organized by AGERI, MUCIA Giza, Egypt (27th November – 8th December 2004).*
- 4- Computer-Assisted Molecular Design in Bioinformatics. *Organized by HEEPF, Genetic engineering and molecular biology center, Assiut Univ., Assiut, Egypt (21st-23rd February 2006).*
- 5- Basic Principles and Laboratory Techniques on DNA Cloning. *Organized by HEEPF, Genetic engineering and molecular biology center, Assiut Univ., Assiut, Egypt (11th-13th April 2006).*
- 6- A Short Course on Plant Tissue Culture and Transformation. *Organized by genetic engineering and molecular biology research center, Assiut Univ. Egypt in collaboration with MUCIA, (11th-15th March 2007).*

7- Practical Course in Bioinformatics, *Organized by Centro de Investigación Científica de Yucatán A. C. Merida, Mexico, (December 1st-5th, 2008).*

b- Computer training courses:

- 1- Introduction to “PC’s Operating Systems”, December 1999.
- 2- MS-Windows 95, February 2000.
- 3- MS-Word 97 for Windows, March 2000.
- 4- Microsoft Power Point 2000, November 2000.
- 5- Troubleshooting and Maintaining The PC’s, December 2000.

c- Faculty and Leadership development training courses:

- 1- Scientific publication (FLDC, Assiut Univ.)
- 2- Efficient teaching (FLDC, Assiut Univ.)
- 3- Teaching with technology (FLDC, Assiut Univ.)
- 4- Thinking skills (FLDC, Assiut Univ.)
- 5- Research team management (FLDC, Assiut Univ.)
- 6- Scientific conferences organization (FLDC, Assiut Univ.)
- 7- E-course design (FLDC, Assiut Univ.)
- 8- Statistical analysis in scientific research (FLDC, Assiut Univ.)
- 9- University management (FLDC, Assiut Univ.)
- 10- Financial and legal aspects in university (FLDC, Assiut Univ.)
- 11- E-course activation (FLDC, Assiut Univ.)
- 12- Strategic planning (FLDC, Assiut Univ.)

Attended conferences

a- International Conferences:

- 1- 2nd International Symposium on Guava and Other Myrtaceae. Nov 10th-13th, 2008, Mérida, Mexico.
- 2- XII Congreso de Estudiantes del CICY, April 6th-7th 2009, Merida, Mexico.
- 3- XIII Congreso de Estudiantes del CICY, April 21st-23rd 2010, Merida, Mexico.
- 4- XXIII National and III International Conference of Phyto-genetics, SOMEFI, Sept 26th-Oct 1st, 2010, Nuevo Vallarta, Mexico.
- 5- 3rd International Symposium on Molecular Markers in Horticulture. Sept 25th-27th 2013, Riva del Garda, Trento, Italy.

b- International Conferences Held in Egypt:

- 1- First International Conference on Applications of Biotechnology in Agriculture, Benha University, Egypt, Feb 18th-21st, 2012. (Invited Speaker)
- 2- International Conference on: “New Role for the World Sugar Economy in a Changed Political and Economic Environment”, Nov 10th-13th, 2012, Aswan, Egypt.
- 3- The First Assiut International Conference of Horticulture, Feb 24th-27th 2013, Fac. of Agric., Assiut Univ., Assiut, Egypt.
- 4- 1st International Conference of Genetic Engineering and Biotechnology “Integrative Science and Biotechnology”, April 26th-29th, 2016, Sharm El-Sheikh, Egypt.

c- Local Conferences:

- 1- 1st Scientific Conference of Young Scientists. Fac. of Agric., Assiut Univ., Egypt, (2007).
- 2- 5th Scientific Conference of Young Scientists, Fac. of Agric., Assiut Univ., Egypt, (May 8th, 2011).
- 3- 6th Scientific Conference of Young Scientists, Fac. of Agric., Assiut Univ., Egypt, (May 13th, 2012).
- 4- 6th Scientific Conf. of Agricultural Sciences, Fac. of Agric., Assiut Univ., Egypt, (Oct 13th-14th, 2012).
- 5- 7th Scientific Conf. of Agricultural Sciences, Fac. of Agric., Assiut Univ., Egypt, (Oct 30th-31st, 2012).
- 6- 8th Scientific Conference of Young Scientists, Fac. of Agric., Assiut Univ., Egypt, (April 19th, 2015).
- 7- 8th Scientific Conf. of Agricultural Sciences, Fac. of Agric., Assiut Univ., Egypt, (March 25th-26th, 2019).

Awards & Grants

- Feb 2014* Grant: PostDoc from TWAS-CONACyT, CICY, Mexico
- Apr 2010* Award: Poster, the first place in: XIII Congreso de Estudiantes del CICY, Merida, Mexico. Abril 21th-23rd 2010
- Oct 2007* Scholarship: Ph.D. scholarship from SRE, CICY, Mexico
- May 2005* The 5th place in II conference of research marketing, Ain Shams Univ., Egypt.

Skills & Activities

- Molecular Biology* Nucleic acids extraction and purification
Molecular Markers (RAPD – SSR – ISSR - AFLP – SRAP – SSCP – TRAP - ITAP)
Taq DNA polymerase purification
Protein and isozyme analysis
DNA sequencing
- Bioinformatics* Gel reading -Cluster analysis – Principal coordinate analysis – Genetic diversity calculations – Sequence alignment – Data bases – Phylogeny analysis – Primer design – NTsys – Sequencher – Mega – Bioedit – Free_tree – MVSP – Gene profiler – Khirshyat
- Tissue culture* Micropropagation -Somatic embryogenesis - Embryo rescue - Cell suspension culture -*In vitro* browning resolving – Abiotic *in vitro* screening and selection
- Computer skills* Statistical analysis (M-Stat, BioMstat, Statistica, SPSS) – MS-office skills - Programming (Visual basic) - Photo and video editing (Adobe Photoshop, Adobe Premiere, Fanta-Morph)
- Languages* Arabic, English, Español
- Scientific Memberships* International Society for Horticultural Science: ISHS
- Journal reviewer* 1- Scientia Horticulturae
2- Turkish Journal of Agriculture and Forestry
3- African Journal of Agricultural Research

- 4- International Journal of tropical biology and conservation
- 5- Journal of applied botany
- 6- Journal of agricultural science and technology
- 7- Journal of horticultural science and crop research
- 8- Journal of plant physiology and pathology
- 9- Journal of advancements in plant science
- 10- Heliyon
- 11- Acta Physiologiae Plantarum

Publication Highlights

Books

Youssef M: *Guava Micropropagation: Browning inhibition, High regeneration and genetic fidelity.* Edited by David Johnson, 08/2014; Lambert academic publishing, ISBN: 978-3-659-58610-1

Book Chapters

G. Manzo-Sánchez, M.T. Buenrostro-Nava, S. Guzmán-González, M. Orozco-Santos, **Youssef M**, Rosa Maria Escobedo-Gracia Medrano: *Genetic Diversity in Bananas and Plantains (Musa spp.)*. Molecular Approaches to Genetic Diversity, Edited by Mahmut Caliskan, Guul Cevahir Oz, I. Halil Kavakli and Birguul Ozcan, 04/2015: chapter 4: pages 93-121; InTech., ISBN: 978-953-51-2042-1

Escobedo-GraciaMedrano RM, Enríquez-Valencia AJ, **Youssef M**, López-Gómez P, Cruz-Cárdenas CI, Ku-Cauich JR (2016) *Somatic Embryogenesis in Banana, Musa ssp.* Somatic embryogenesis, fundamental aspects and applications, Edited by Loyola-Vargas VM and Ocho-alejo N, chapter 21: pages 381-400; Springer Verlag, ISBN: 978-3-319-33704-3

Journal Publications

1. **Youssef M**, El-Helw M, Taghian A, El-Aref H (2010) Improvement of *Psidium guajava* Using Micropropagation. *Acta Horticulturae*, 849:223-230
2. **Youssef M**, James A, Mayo-Mosqueda A, Ku-Cauich J, Grijalva-Arango R, Escobedo-GM RM (2010) Influence of genotype and age of explant source on the capacity for somatic embryogenesis of two Cavendish banana cultivars (*Musa acuminata* Colla, AAA). *African Journal of Biotechnology*, 9:2216-2223
3. **Youssef M**, James A, Rivera-Madrid R, Ortiz R and Escobedo-GM RM (2011) *Musa* genetic diversity revealed by SRAP and AFLP, *Molecular Biotechnology*, 47: 189-199.
4. **Youssef M**, Ku-Cauich R, James A, Escobedo-GM RM (2011) Genetic Analysis of Somatic Embryogenesis Derived Plants in Banana. *Assiut Journal of Agricultural Sciences*, 42 (Special Issue): 287-300
5. **Youssef M** (2012) Khirshyat 1.0: a simple micro-program for some molecular biology protocols. *Gene, Genomes and Genomics*, 6 (Special issue 1), 102-105.
6. El-Rawy MA, **Youssef M** (2014) Evaluation of drought and heat tolerance in wheat based on seedling traits and molecular analysis. *Journal of crop sciences and biotechnology*, 17 (3): 183-189. DOI: 10.1007/s12892-014-0053-x
7. **Youssef M**, Ibrahim RA, Amein KA (2015) Comparison of Phenotypic and Molecular Assessment of Genetic Diversity in Guava. *Acta horticulturae*, 1100:115-120
8. **Youssef M**, Elazab DS (2015) Molecular Analysis of *Ziziphus* spp. Cultivars in Egypt. *Acta horticulturae*, 1100:37-44

9. Said AA, Hamada A, **Youssef M** (2015) Assessment of Heat Tolerance in Bread Wheat Using Some Agronomic Traits and SRAP Markers. *Egyptian Journal of Plant Breeding*, 19 (3): 979-994
10. **Youssef M**, Valdez-Ojeda R, Ku-Cauich JR, EscobedoGraciaMedrano RM (2015) Enhanced Protocol for Isolation of Plant Genomic DNA. *Journal of Agriculture and Environmental Sciences*, 4 (2): 172-180
11. Said AA, Hamada A, **Youssef M**, Mohamed N, Mustafa AA (2015) SRAP markers associated with water use efficiency and some agronomic traits in wheat under different irrigation regimes. *Egyptian Journal of Agronomy*, 37 (2): 209-229
12. **Youssef M**, EscobedoGraciaMedrano RM (2016) Genetic relationship among *Musa balbisiana* accessions and identification of SRAP markers linked to B genome in *Musa*. *Journal of Agricultural Chemistry and Biotechnology*, Mansoura University, 7(2): 39-47
13. Abouzaid E, El-Sayed NE, Mohamed EA, **Youssef M** (2016) Molecular analysis of drought tolerance in guava based on *in vitro* PEG evaluation. *Tropical Plant Biology*, DOI: 10.1007/s12042-016-9164-5
14. **Youssef M**, Ibrahim RA (2016) Molecular markers associated with high Vitamin-C content in guava. *Journal of Agricultural Chemistry and Biotechnology*, Mansoura University, 7(3):49-55
15. Lopez-Gomez P, Escobedo-GraciaMedrano RM, **Youssef M**, Enriquez-Valencia J, Iracheta-Donjuan L, Ku-Cahuich R (2016) Maduración y germinación *in vitro* de embriones somáticos de banano cv. Enano Gigante. *Revista del Centro de graduados e investigación. Instituto Tecnológico de Merida*. 31 (63): 51-53
16. López-Gómez P, Escobedo-GraciaMedrano RM, **Youssef M**, Enríquez-Valencia AJ, Ku-Cahuich R, Iracheta-Donjuan L (2016) Variación somaclonal evaluado mediante marcadores moleculares en la regeneración *in vitro* de banano cv. Manzano. *Revista del Centro de graduados e investigación. Instituto Tecnológico de Merida*. 31 (63): 54-57
17. **Youssef M**, Mohamed EA, El-Sayed NE, Abouzaid E (2016) Establishment of an *in vitro* Evaluation Method for Drought Tolerance in Guava. *Research Journal of Applied Biotechnology*. 5(1): 32-38
18. López-Gómez P, **Youssef M**, Kú-Cauich JR, Enríquez-Valencia JA, Iracheta-Donjuan L, Escobedo-GraciaMedrano RM (2017) Organogenesis directa de yemas florales de *Musa* sp., y variación somaclonal evaluada por marcadores moleculares. *Agroproductividad*. 10 (8) :65-71
19. Elazab D. Sh., **Youssef M** (2017) *In vitro* Response of Some Banana Cultivars to Salicylic Acid Treatment Under Salinity Stress. *Assiut Journal of Agricultural Sciences*. 48 (4): 168-184
20. **Youssef M**, Alhammadi AS, Ramírez-Prado JH, Sánchez-Teyer LF, Escobedo-GraciaMedrano RM (2017) Remarks on genetic diversity and relationship of *Punica protopunica* and *P. granatum* assessed by molecular analyses. *Genetic Resources and Crop Evolution*. DOI 10.1007/s10722-017-0556-7
21. Cruz-Cárdenas CI, **Youssef M**, Escobedo-GraciaMedrano RM (2017) Assessment of genetic relationship in *Musa* using male flower descriptors and molecular markers. *South African Journal of Botany*. 113: 270-276
22. El-Mahdy MT, **Youssef M**, Eissa MA (2018) Impact of *in vitro* cold stress on two banana genotypes based on physio-biochemical evaluation. *South African Journal of Botany*. 119: 219-225
23. Youssef AF, Younes NA, **Youssef M** (2019) Genetic diversity in *Corchorus olitrius* L. revealed by morphophysiological and molecular analyses. *Molecular Biology Reports*. 46 (3): 2933-2940. DOI: 10.1007/s11033-019-04754-2
24. El-Mahdy MT, **Youssef M** (2019) Genetic homogeneity and high shoot proliferation in banana (*Musa acuminata* Colla) by altering medium thiamine level and sugar type. *In Vitro Cellular & Developmental Biology - Plant*. DOI: 10.1007/s11627-019-10013-7
25. Khalil OA, Ibrahim RA, **Youssef M** (2019) A comparative assessment of phenotypic and molecular diversity in Doum (*Hyphaene thebaica* L.). *Molecular biology reports*, DOI:10.1007/s11033-019-05130-w
26. Negm H, Younes NA, Rabee A, **Youssef M** (2020) Variations in growth behavior, yield and DNA stability of two vegetable crops cultivated in radioactive spiked soils. *Environmental Pollution*. 259:113891

27. El-Rawy, M. A., Abdelreda, A., El-Fatah, A., & **Youssef, M.** (2020). Assessment of Heat Tolerance in Some Wheat Species and Interspecific Hybrids. *Journal of Agricultural Chemistry and Biotechnology*, 11(12), 365-373.
28. Pisam, W. M., Aal, A. A., Khodair, O. A., & **Youssef, M.** (2020) In vitro Performance of Two Banana Cultivars Under Copper Stress. *Assiut Journal of Agricultural Sciences*, 51 (2), 143-153.
29. Mohamed, G. I. A., **Youssef, M.**, Mohamed, E. A., & Mahgoub, A. A. (2021). Identification of Sex-specific Molecular Markers in Barbel and Nile Carp using SCoT and ISSR Markers. *Assiut Journal of Agricultural Sciences*, 52(1), 60-73.
30. El-Mahdy, M. T., Abdel-Wahab, D. A., & **Youssef, M.** (2021). *In vitro* morpho-physiological performance and DNA stability of banana under cadmium and drought stresses. *In Vitro Cellular & Developmental Biology-Plant*, 57(3), 460-469.
31. El-Mahdy, M.T., **Youssef, M.** & Elazab, D.S. (2022). *In vitro* screening for salinity tolerance in pomegranate (*Punica granatum* L.) by morphological and molecular characterization. *Acta Physiol Plant* 44, 27. <https://doi.org/10.1007/s11738-022-03361-2>
32. Morsy, K. E., Elsherbini, G. A., & **Youssef, M.** (2022). Evaluation of Chromium harmful effects on in vitro banana performance. *Assiut Journal of Agricultural Sciences*, 53(2), 14-28.

Google Scholar:

<https://scholar.google.com/citations?user=ghMu70EAAA&hl=en>

Software:

- 1- **Khirshyat 1.0**: a simple micro-program for some molecular biology protocols.
<https://mkhirshy.wixsite.com/khirshyat>
- 2- **Khirshyat Android**: a simple micro-program for some molecular biology protocols.
https://play.google.com/store/apps/details?id=appinventor.ai_mkhirshy.Khirshyat&hl=ar&gl=US