

2019

Egyptian – Male – Single

Date of Birth: 6<sup>th</sup> October 1987

**Address:** King Saud University - Col. of Science - Dept. of Botany and  
Microbiology - Lab. AB06

**Mobile Tel.** +966-540329167

**E-mail:** [abdou.gaafar@yahoo.com](mailto:abdou.gaafar@yahoo.com) ; [agaafar@ksu.edu.sa](mailto:agaafar@ksu.edu.sa)

**Postal code:** 11451 - **P.O. Box** 2455

## ✚ EDUCATION

- ✚ (Oct.2013- Oct. 2017) **PhD in Botany - Faculty of Science -KSU - KSA, Excellent (GPA 5.00/5.00 with degree of honor).**

Thesis entitled “**De-novo whole genome assembly and transcriptome analysis of drought-induced stress in the desert plant *Calotropis procera***”

- ✚ (Oct.2010- Feb. 2013) **M.Sc. in Botany - Faculty of Science – KSU - KSA, Excellent (GPA 4.94/5.00 with degree of honor).**

Thesis entitled “**Assessment of genetic diversity in endangered plant *Breonadia salicina* using ISSR and Chloroplast DNA markers**”

- ✚ (Sep.2004- Jul. 2008) **B.Sc. in Biotechnology (English program) - Faculty of Agriculture - Cairo University - Egypt, Excellent (86.21%) with degree of honor**

## ✚ PROFESSIONAL EXPERIENCE

- 2018 – till now; Assistant professor - in Department of Botany and Microbiology, College of Science, King Saud University, Riyadh – Saudi Arabia.
- 2015 – 2018; working as Researcher A - with teaching load in Department of Botany and Microbiology, College of Science, King Saud University, Riyadh – Saudi Arabia.
- 2014 – till now; working as Researcher in NPST research project no. (11-BIO2089-02) entitled “Molecular tools for accelerated domestication of a new heat, drought and salinity tolerant forage crop for Saudi Arabia”. KSU – Saudi Arabia
- 2012 – 2013; working as principal investigator in KACST research project no. (A-S-12-0922) entitled “Assessment of genetic diversity in endangered plant *Breonadia salicina* using ISSR and Chloroplast DNA markers”. KSU – Saudi Arabia

- 2011 – 2013; working as Researcher in NPST research project no. (BIO-1289) entitled “DNA Bank of flora of Saudi Arabia”. KSU – Saudi Arabia
- 2008 – 2010; Research Assistant in Molecular Genetics & Genome Mapping laboratory -Agriculture Genetic Engineering Research Institute (AGERI) - Agriculture Research Center (ARC). Giza – Egypt.

#### **✚ SCIENTIFIC EXPERTISE AND PARTICIPATION IN RESEARCH PROJECTS**

- 2011 - till date: Member in the plant molecular Biology research group/ Dept. of Botany and Microbiology - Col. of Science - King Saud University.
- 2013 - till date: Teaching a number of Practical courses (BOT102 General Botany - BOT253 Genetics - BOT251 Cytogenetics – MIC140 General Microbiology) / Dept. of Botany and Microbiology - Col. of Science - King Saud University.
- Reviewer in many ISI journals.
- Member in Dept. of Botany and Microbiology committees (Academic Evaluation and Accreditation - Continuous Improvement and Quality Assurance - Alumni affairs and employment).
- Trainer in Mawhiba (Talent) program workshop/ Dept. of Botany and Microbiology - Faculty of Science - King Saud University- 26- 30 November 2017.
- Trainer in the workshop entitled " In vitro conservation and cryopreservation of Date Palm (Phoenix dactylifera)"- Faculty of Science - King Saud University- 9- 11 February 2015.
- Trainer in the workshop entitled " Establishment of DNA Bank of Saudi Arabia flora: Reality and Challenges " - Faculty of Science - King Saud University - April 2013
- Principal investigator in research project no. (A-S-12-0922) funded by KACST entitled “Assessment of genetic diversity in endangered plant *Breonadia salicina* using ISSR and Chloroplast DNA markers”. KSU – Saudi Arabia

## ✦ **SKILLS**

- Good experience in molecular biology methods & techniques
  - Nucleic acid extraction (DNA and RNA Extraction)
  - Nucleic acid quality and integrity check (DNA and RNA Gel Electrophoresis – Nanodrop – spectrophotometer – Bioanalyzer)
  - PCR based techniques (Reverse Transcription RT-PCR - Molecular Markers “ISSR- RAPD- ITS - SSR - SCoT – SCAR - AFLP” - DNA Fingerprinting – etc.)
  - Genetic diversity, Genetic fidelity, abiotic stresses, Measurement of physiological parameters “protein content - Carbohydrates - Chlorophyll - Isozymes”, etc.).
  - Next generation sequencing (Whole genome and transcriptome sequencing) and analysis
- In Bioinformatics:
  - Familiar with sequence databases like (NCBI, EMBL) and retrieval of Sequences and Analysis e.g BLAST.
  - Genetic diversity within and between population (Popgene – GenALex – Mega 7 – NTSYSpc)
  - DNA sequence analysis (clustalX – Dnasp)
  - Primer designing for PCR amplification.
  - NGS sequence analysis (quality check – sequence filtration – adaptor removal - deduplication – base correction – *de novo* and reference based assembly – differential expression analysis – gene annotation)
- Presentation skills.
- Have high skills when dealing with different computer software (Ordinary & Scientific) and hardware which further enhanced through several training courses.
- Languages: English (*Good command*) **IELTS 6.5.**

## **✦ ACHIEVEMENTS**

- Honoring from King Saud University manager in the honoring ceremony of the 5th Students' Scientific Symposium of KSU (2014) and Awarded 4<sup>th</sup> Rank (Biology branch) - King Saud University, Riyadh, Saudi Arabia.
- Certificate of honor for Scientific Excellence (2005-2008), Col. of Agriculture - Cairo University - Egypt.
- Member of the Excellent students' club (2005-2008), Col. of Agriculture - Cairo University - Egypt.

## **✦ CONFERENCES & ACTIVITIES**

- International Conference on Healthcare, Applied Science and Engineering. Ontario College for Research & Development, Paris – France 2017.
- The 7<sup>th</sup> Students' Scientific Symposium held at King Saud University on April 2016.
- The 2<sup>nd</sup> Saudi International Biotechnology Conference, held at King Abdulaziz City for Science and Technology, Saudi Arabia on February 2016.
- The International Conference on Scientific Publishing, held at King Saud University on October 2015.
- The 5<sup>th</sup> Students' Scientific Symposium held at King Saud University on April 2014.
- The 3<sup>rd</sup> Saudi International Nanotechnology Conference, held at King Abdulaziz City for Science and Technology, Saudi Arabia on December 2014.
- The International Conference on Medical Technology, held at King Abdulaziz City for Science and Technology, Saudi Arabia on September 2013.
- The 5th International Conference on Water Resources and Arid Environments, held at King Saud University on January 2013.
- The International Conference on Nanotechnology, held at King Abdulaziz City for Science and Technology, Saudi Arabia on November 2012.

- The International Conference on Biotechnology, held at King Abdulaziz City for Science and Technology, Saudi Arabia on September 2012.

## ✚ PATENT

Al-Ameri A. A., Al-Qurainy F., Khan S., Nadeem M., **Gaafar A. Z.**, 2017. Method of Identifying Date Palm Gender Using SCAR Primers. The United States Patent and Trademark Office. Patent number: 9,598,732.

## ✚ BOOKS

Al-Qurainy F., Khan S., Nadeem M. Al-Ameri A. A., Tarroum M., **Gaafar A. Z.**, 2018. Identification of flora of Saudi Arabia using Sequence Based DNA Markers - DNA banking practice. (under publication)

## ✚ PUBLICATIONS

1. Alansi S., Al-Qurainy F., Khan S., Nadeem M., Tarroum M., Al-Shameri A., **Gaafar A. Z.**, 2017. Genetic fidelity testing in regenerated plantlets of cryopreserved and non- cryopreserved cultivars of *Phoenix dactylifera* L. Pakistan Journal of Botany. 49(6): 2313-2320.
2. Tarroum M., Al-Qurainy F., Khan S., Nadeem M., Al-Shameri A., **Gaafar A. Z.**, Alansi S., 2017. Assessment of salt tolerance accessions of *Sesbania sesban* (L.) Merril using some morphological and biochemical parameters. Fresenius Environmental Bulletin. (Accepted under publication on December).
3. **Gaafar A. Z.**, 2017. Complete Structure of the Chloroplast Genome of *Calotropis Procera*. International Conference on Healthcare, Applied Science and Engineering, Ontario College for Research & Development. Paris – France. (Accepted under publication on December).
4. Al-Shameri A., Al-Qurainy F., Khan S., Nadeem M., **Gaafar A. Z.**, Tarroum M., Al-Ameri A., Alansi S., 2017. Appraisal of guar [*Cyamopsis tetragonoloba* (L.) Taub.] accessions for forage purpose under the typical Saudi arabian environmental conditions encompassing high temperature, salinity and drought. Pakistan Journal of Botany 48(1):131-135.
5. Al-Qurainy F., Nadeem M., Khan S., Alansi S., Tarroum M., Al-Ameri A., **Gaafar A. Z.**, Al-Shameri A., 2017. Rapid plant regeneration, validation of genetic integrity by ISSR markers and conservation of *Reseda pentagyna* an endemic plant growing in Saudi Arabia. Saudi Journal of Biological Sciences. doi.org/10.1016/j.sjbs.2017.07.003.
6. Al-Qurainy F., Khan S., Nadeem M., Tarroum M., **Gaafar A. Z.**, 2017. Antioxidant System Response and cDNA-SCoT Marker Profiling in *Phoenix dactylifera* L. Plant under Salinity Stress. International Journal of Genomics (9):1-10.
7. Al-Qurainy F., Nadeem M., Khan S., Tarroum M., Alansi S., Al-Ameri A., **Gaafar A. Z.**, Al-Shameri A., 2017. Assessing genetic fidelity in regenerated plantlets of date palm cultivars after cryopreservation. Fresenius Environmental Bulletin 26(2a):1727-1735.
8. Al-Ameri A. A., Al-Qurainy F., **Gaafar A. Z.**, Khan S., Nadeem M., 2016. Molecular identification of sex in *Phoenix dactylifera* using Inter Simple Sequence Repeat. BioMed Research International. Article ID 4530846.

9. Al-Ameri A. A., Al-Qurainy F., **Gaafar A. Z.**, Khan S., Nadeem M., **2016**. Male specific gene expression in dioecious *Phoenix dactylifera* (Date palm) tree at flowering stage. *Pakistan Journal of Botany* 48(1):131-135.
10. **Gaafar A. Z.**, Al-Qurainy F., Khan S., **2014**. Assessment of genetic diversity in the endangered populations of *Breonadia salicina* (Rubiaceae) growing in The Kingdom of Saudi Arabia using inter-simple sequence repeat markers. *BMC Genetics*, 15:1.
11. Al-Qurainy F., Khan S., Nadeem M., Tarroum M., **Gaafar A. Z.**, **2014**. Selection of DNA barcoding loci for *Nepeta deflersiana* Schweinf. ex Hedge from chloroplast and nuclear DNA genomes. *Genetics and molecular research*, 13 (1): 1144-1151.
12. Al-Qurainy F., **Gaafar A. Z.**, Khan S., Nadeem M., Al-Ameri A. A. and Tarroum M., **2014**. Genetic Diversity in *Breonadia salicina* based on Intra-Species Sequence Variation of Chloroplast DNA Spacer Sequence. *Pak. J. Bot.*, 46(2): 599-604.
13. Al-Qurainy F., Nadeem M., Khan S., Alansi S., Tarroum M., and **Gaafar A. Z.**, **2014**. Storage, regeneration and genetic stability of synthetic seeds of *Ochradenus arabicus*: a high value medicinal plant. *Fresenius Environmental Bulletin*; 23(5):1255-1259.
14. Al-Qurainy F. H., **Gaafar A. Z.**, Khan S., Nadeem M., Tarroum M., Alaklabi A. and Thomas J., **2013**. Antibacterial activity of leaf extract of *Breonadia salicina* (Rubiaceae), an endangered medicinal plant of Saudi Arabia. *Genet. Mol. Res.* 12 (3): 3212-3219.
15. **Gaafar A. Z.**, Ghdan A. A., Siddiqui M. H., Al-Wahaibi M. H., Basalah M. O., Ali H. M. and Sakran A. M., **2012**. Influence of sulfur on cadmium (Cd) stress tolerance in *Triticum aestivum* L. *African Journal of Biotechnology*.11 (43): 10108 - 10114.

## ✦ TRAINING EXPERIENCE

Training	Place
<ul style="list-style-type: none"> <li>• Innovation and Intellectual property workshops 09-13/04/2017</li> </ul>	Deanship of Skills Development, KSU, Saudi Arabia
<ul style="list-style-type: none"> <li>• Effective university teaching skills 27-28/03/2017</li> </ul>	Deanship of Skills Development, KSU, Saudi Arabia
<ul style="list-style-type: none"> <li>• Designing and building of an academic course 19-20/03/2017</li> </ul>	Deanship of Skills Development, KSU, Saudi Arabia
<ul style="list-style-type: none"> <li>• Collaborative English Communication 05-07/03/2017</li> </ul>	Deanship of Skills Development, KSU, Saudi Arabia
<ul style="list-style-type: none"> <li>• Continual improvement process (Kaizen) 28-29/02/2017</li> </ul>	Deanship of Skills Development, KSU, Saudi Arabia
<ul style="list-style-type: none"> <li>• Solving problems and making decisions 21-22/02/2017</li> </ul>	Deanship of Skills Development, KSU, Saudi Arabia
<ul style="list-style-type: none"> <li>• Measurement of mRNA and long non-coding RNAs using next-generation sequencing (RNA seq) 21/04/2016</li> </ul>	NowGen IT training center, Manchester, United Kingdom

<ul style="list-style-type: none"> <li>• Introduction to genome variation analysis using NGS 18-19/04/2016</li> </ul>	Bioinformatics Training Room, Craik-Marshall Building, Cambridge University, Cambridge, United Kingdom
<ul style="list-style-type: none"> <li>• Network visualization and analysis of biological data 14-15/04/2016</li> </ul>	Bioinformatics Training Room, Craik-Marshall Building, Cambridge University, Cambridge, United Kingdom
<ul style="list-style-type: none"> <li>• Introduction to Next Generation Sequencing 03-07/04/2016</li> </ul>	European Bioinformatics Institute (EMBL-EBI) - Wellcome Genome Campus, Hinxton, Cambridge, United Kingdom
<ul style="list-style-type: none"> <li>• Breaking New Ground in plant biology workshop 31/03/2016</li> </ul>	Distinguished scientist fellowship program, College of Science, KSU, Saudi Arabia
<ul style="list-style-type: none"> <li>• Molecular Biology and Heat Stress Response workshop 07-08/12/2015</li> </ul>	Dept. of Botany & Microbiology, College of Science, KSU, Saudi Arabia
<ul style="list-style-type: none"> <li>• <b>Trainer in</b> "In vitro conservation and cryopreservation of Date Palm" workshop 09-12/02/2015</li> </ul>	Dept. of Botany & Microbiology, College of Science, KSU, Saudi Arabia
<ul style="list-style-type: none"> <li>• <b>Trainer in</b> "Establishment of a DNA Bank of Flora of Saudi Arabia: Prospects and Challenges" workshop 20-22/04/2013</li> </ul>	Dept. of Botany & Microbiology, College of Science, KSU, Saudi Arabia
<ul style="list-style-type: none"> <li>• Diploma of Bioinformatics 06/04/2008 – 20/07/2008</li> </ul>	SIRA (Scientific Informatics Research Academy), Egypt
<ul style="list-style-type: none"> <li>• Practical Microbiology program 15/08/2006 – 15/09/2006</li> </ul>	ESRU (Environmental Studies & Research Unit), Col. of Agriculture, Cairo university, Egypt
<ul style="list-style-type: none"> <li>• Advanced molecular genetics &amp; tissue culture techniques 05-16/08/2007</li> </ul>	AGERI (Agriculture Genetic Engineering Research Institute), Giza, Egypt
<ul style="list-style-type: none"> <li>• International Computer Driving License (ICDL) 1/2/2008 – 15/3/2008</li> </ul>	CompEx for IT center, Cairo, Egypt
<ul style="list-style-type: none"> <li>• A+ "Computer technical training course" 1/7/2008 – 1/8/2008</li> </ul>	ESS (E-Solution System), Giza, Egypt

#### ✚ **NCBI SUBMITTED SEQUENCES:**

- Accession numbers of published sequences in NCBI database generated from economic, rare, endangered, and medicinal plants using various PCR barcoding techniques:

KU243700 KJ623266 KF805088 KF805089 KF805090 KF805091 KF805092 KF805094  
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## ✚ REFERENCES

Available upon request.