

CURRICULUM VITAE: DR. HALA F. EISSA

1. Personal details

Name: Hala Fawzy El-Sakka Eissa
Gender: Female
Religion: Muslim
Marital status: Married
Date of birth: 15/8/1968
Place of birth: Dameitta, Egypt
E-mail: halaeissa@must.edu.eg, halaeissa@yahoo.com
Tel: 0100 160 23 20, +238581025



2. Education

- B.Sc. (1990), Biology (Plant-Chemistry), Faculty of Science, Mansura University, Dakahliya, Egypt.
- M.Sc. (1997), Department of Genetics, Faculty of Agriculture, Ain Shams University, Cairo, Egypt.
Title: Molecular and physiological genetic bases of salt tolerance in maize (*Zea mays* L.)
- Ph.D. (2001), Department of Genetics, Faculty of Agriculture, Ain Shams University, Cairo, Egypt.
Title: Enhancement of wheat (*Triticum aestivum* L.) tolerance to environmental stress by genetic engineering

3. Employment history

- Assistant Researcher, 1999-2001, Agricultural Genetic Engineering Research Institute (AGERI), Giza, Egypt.
- Researcher, 2002-2007, Agricultural Genetic Engineering Research Institute (AGERI), Giza, Egypt.
- Senior scientist, 2007-2016, Agricultural Genetic Engineering Research Institute (AGERI), Giza, Egypt.
- Head of Research, 2016 – till now, Agricultural Genetic Engineering Research Institute (AGERI), Giza, Egypt.
- Associate Professor, 2007-2011, College of Biotechnology, Misr University for Science and Technology (MUST), 6 October, Giza, Egypt.
- Vice Dean for Education and Student Affairs, 2011 – 2021, College of Biotechnology, Misr University for Science and Technology (MUST), 6 October, Giza, Egypt.
- Dean, August 2021 – till now, College of Biotechnology, Misr University for Science and Technology (MUST), 6 October, Giza, Egypt.

4. Awards

- Science Creativity Award in Agriculture, 2003, The Arab Organization for Agricultural Development for the research paper entitled "Field Testing of Transgenic Wheat Expressing the *HVA1* Gene for Drought Tolerance".
- Award for Encouragement, Agricultural Research Center (ARC), Ministry of Agriculture and Land Reclamation, Egypt, 2009, for the applicant's research on "Wheat Biotechnology to Improve Its Tolerance to Drought and Salt Stresses".

5. Missions

- Fulbright mission to MSU, USA (April 2004 – October 2004). "Isolation and Molecular Characterization of Stress-Related Genes from Wild Barley".

6. Membership of professional organizations, associations and societies

- Egyptian Society of Genetics, Egypt (1991 – until now).
- Annual Evaluation and Verification Committee, Fulbright Commission (2005 - until now).

- Reviewer, Egyptian J. Genetics and Cytology (2007 - until now).
- Evaluation and Verification Committee for Research Proposals, Academy of Scientific Research and Technology, Egypt (2013 - until now)
- Member of Agricultural Sciences and Food Council, Specialized Councils Sector, Academy of Scientific Research and Technology, Egypt (2013-2015).
- Member of “Support the participation of young researchers in agriculture sector” Council, Ministry of Agriculture and Land Reclamation, Egypt (2014 -2015).
- Evaluation and Verification Committee for Research Proposals, Misr El-Khair Foundation (2014 - until now).
- Member of the coordinating committee of “The Food Security Information Center”, Ministry of Agriculture and Land Reclamation, Egypt (2015-2017).
- Member of National Biotechnology Network of Expertise, Academy of Scientific Research and Technology, Egypt (May 2019 – until now).

7. Training

a. Trainee

- Number of English and computer training courses, American Univ. at Cairo, 1991-1995.
- Training course on intellectual property rights and its relation to biology, Egypt, Jan, 1-7, 2000.
- Regional workshop on biosafety development, Egypt, April, 15-18, 2002
- Training course on biosafety regulation at EU, Netherland, April 2007.
- Biotechnology regulatory services inspection training. United States of America, August 22-23, 2007.
- "Self-evaluation of colleges and institutes of higher education." National Authority for Quality Assurance and Accreditation of Education (NAQAAE). 2nd -4th April, 2019.
- "Description of programs and courses and evaluation of learning outcomes for colleges and institutes of higher education." National Authority for Quality Assurance and Accreditation of Education (NAQAAE). 9-11 April 2019.

b. Trainer

- Participation in the training course entitled “Plant Tissue Culture and Transformation Techniques”, AGERI, Egypt, 2005.
- Participation in the training course entitled “Molecular marker techniques and fingerprinting”, AGERI, ARC, Giza, Egypt, 2007.
- Training course entitled “Genetic transformation and DNA marker applications for Crops improvement”, ICARDA, Tel Hadya, Syria, 2008.
- Training course entitled “Molecular markers for crop improvement”, Agricultural Genetic Engineering Research Institute, Giza, Egypt, November, 2012.

8. Conferences and workshops attended

- The tenth international wheat symposium, held in Pestium, Italy, 2003, and presented a paper.
- Second International Conference of Genetic Engineering and its applications, Sharm El-Sheikh, Egypt, 2005, and presented a paper.
- The First International Conference on Biotechnology, King Fahd Cultural Centre in Riyadh, King Saud University, Riyadh, Saudi Arabia, 2009, and presented a paper.
- Third International Conference of Genetic Engineering and Its Applications, Sharm El-Sheikh, Egypt, 2011, and presented a paper.
- First Workshop for Applied Biotechnology, Biotechnology Research Center (CRBt), Constantine, Algeria, October 2011 and presented a lecture.
- A Workshop on “Biotic Stress: from Gene to Field” organized by Egypt Biotechnology Information Center (EBIC) at Misr University for Science & Technology (MUST) and presented a lecture.

- A Workshop on “Applications of Biotechnology in Agriculture” organized by Egypt Biotechnology Information Center (EBIC) and the National Research Center (NRC), February, 2014, and presented a lecture.

9. Research experience

- Crossing procedure of wheat, maize and barley.
- Standard procedure for developing cereal plants and seed maintenance in field greenhouse and growth chamber using regular solid and liquid media.
- Experimental design and statistical analysis.
- Basic techniques of electrophoresis for protein and DNA and molecular techniques, i.e., PCR, Southern, Northern and Western blotting.
- Protein gel scanning on the Bio- image instrument.
- Evaluation of plant salt and drought stress tolerance by using physiological, agronomic and molecular techniques.
- Construction of plasmid DNA constructs.
- Wheat tissue culture and genetic transformation of immature embryos.
- Gene expression analysis utilizing qRT-PCR.
- Isolation of stress-related genes utilizing PCR and Differential Display.

10. Research Projects

a. Principal investigator

- “Genomic characterization of stress-related genes from wild barley”. US-Egypt Joints Projects (Bio 7-001-013). The National Strategy of the Science and Technology Center, Academy of Scientific Research and Technology, Ministry of Higher Education and Scientific Research, Cairo, Egypt, 2004-2006.
- “Evaluation of transgenic wheat cultivars harboring drought tolerance gene”. Agricultural Research and Development Council. Ministry of Agriculture and Land Reclamation, Egypt, 2008-2010.
- “Development of transgenic wheat with improved fungal resistance”. Science and Technology Development Fund (STDF). Academy of Scientific Research and Technology, Ministry of Higher Education and Scientific Research, Cairo, Egypt, 2008-2014.
- “Development of Drought-Tolerant Bread Wheat via Biotechnological Approaches”. Agricultural Research and Development Fund (ARDF), Ministry of Agriculture and Land Reclamation, Cairo, Egypt. 2010-2014.

b. Researcher

- “Development of Transgenic Wheat with Improved Salt and Drought Tolerance”, The National Strategy of the Science and Technology Center, Academy of Scientific Research and Technology, Ministry of Higher Education and Scientific Research, Cairo, Egypt, 1998-2001 and extended to 2008.
- “Genetic transformation of some pathogenesis-related genes for fungal resistance into bread wheat”. US-Egypt Joints Projects, The National Strategy of the Science and Technology Center, Academy of Scientific Research and Technology, Ministry of Higher Education and Scientific Research, Cairo, Egypt, 2004-2006.
- “Developing drought-resistant cereals to support efficient water use in the Mediterranean area (CEDROME)”, 6th Framework Programme on Research, Technological Development and Demonstration, 2006-2009.
- “Microarray Studies on phytochrome B”, Agricultural Research and Development Council. Ministry of Agriculture and Land Reclamation, Egypt, 2008-2010.
- “Identification of stress-related genes from rice using microarray technology”. Science and Technology Development Fund (STDF). Academy of Scientific Research and Technology, Ministry of Higher Education and Scientific Research, Cairo, Egypt, 2009-2011.
- “Identification of biotic stress-related genes from wheat using microarray technology”. Science and Technology Development Fund (STDF). Academy of Scientific Research and Technology, Ministry of Higher Education and Scientific Research, Cairo, Egypt, 2010-2012.

- “Desert Cereals - Boost Drought Tolerance by Jasmonate Signaling”, Wyptian-German Projects (GERF), No. 5109. Science and Technology Development Fund (STDF). Academy of Scientific Research and Technology, Ministry of Higher Education and Scientific Research, Cairo, Egypt. (2014-till now).

11. Academic school

Supervised MSc. and Ph.D. students as the following:

University	Degree	Research title	Student name	Date
Faculty of Agriculture, Ain Shams University	Ph.D	Comparative studies of transgene expression levels in plants	Ahmed M. M. Ramadan	2007-2009
Faculty of Agriculture, Ain Shams University	Ph.D	Functional genomic analysis for salt related gene(s) in barley	Lamyaa M. Sayed	2007-2010
Faculty of Agriculture, Cairo University	Ph.D	Isolation of drought stress-related genes from wild plants <i>via</i> gene expression	Heba Gharib	2009-2013
Faculty of Agriculture, Cairo University	Ph.D	Development of wheat transgenic plants harboring <i>Hal2</i> -like gene for salinity tolerance	Sheren Abou-El-Maaty	2006-2010
Faculty of Agriculture, Alexandria University	Ph.D	Identification of drought tolerant molecular markers in rice	Reda Sallam	2010 – 2013
Faculty of Science, Ain Shams University	Ph.D	Development of transgenic wheat (<i>Triticum aestivum</i> L.) resistant to insects of stored cereals	Heba Hamdy Abou Seada	2011-2014
Faculty of Agriculture, Ain Shams University	PhD	Comparative studies on gene expression of rice and wheat in response to fungal infection	Nermin Gamal Mohamed Ibrahim	2013- 2019
Faculty of Agriculture, Ain Shams University	PhD	Profiling of Drought Responsive miRNAs in Wheat	Yasser Bahaa-Eldin Morsy	2014 – 2017
Faculty of Agriculture, Suez Canal University	M.Sc.	Regeneration and genetic transformation for some wheat lines	Sara Khairy Mahmoud El-esawe	2005 - 2008
Faculty of Science, Ain Shams University	M.Sc.	Improvement of transgene expression in wheat	Heba Hamdy Abou Seada	2006-2010
Faculty of Agriculture, Azhar University	M.Sc	Genetic engineering approaches to improve abiotic stress tolerance in an Egyptian rice variety	Abdel-Rahman Abdel Hady	2006-2011
Faculty of Agriculture, Ain Shams University	M.Sc.	Molecular Genetic Studies on Some Fungal Diseases in Rice	Yasser Bahaa-Eldin Morsy	2010 - 2013
Medical Research Institute, Alexandria University	M.Sc	Comparative Studies on Gene Expression of Rice and Wheat in Response to Fungal Infection	Shimaa Shouman	2011- 2015
College of Biotechnology, Misr University for Science and Technology	M.Sc	Identification of the Methylation Pattern(s) in Some Cancer Cells after being Treated with Different Chemotherapeutic Drugs	Sara Samy Al-Taweel	2015-till now

12. Teaching experience

a. Post Graduates

- Molecular Genetics
- Genetic Engineering
- Scientific Writing

b. Undergraduate

- Molecular Genetics
- Genetic Engineering

- Molecular Biology of Biotic and Abiotic stresses
- Plant Tissue Culture
- Biosafety
- Research in Biotechnology
- Seminar in Biotechnology

13. Publications

- Abdel-Tawab, F.M., Eman M. Fahmy, A. Bahieldin and **Hala F. Eissa** (1997). Molecular markers for salt tolerance in some inbreds of maize (*Zea mays* L.). Arab Univ. J. Agric. Sci., Ain Shams Univ., 5: 389-417.
- Abdel-Tawab, F.M.; Eman M. Fahmy; A. Bahieldin; Asmahan A. Mahmoud; H.T. Mahfouz; **H. F. Eissa** and O. Moseilhy (2003). Marker-assisted selection for drought tolerance in Egyptian bread wheat (*Triticum aestivum* L.). Egyptian J. Genetics and Cytology, 32: 43-63.
- Bahieldin, A., F.M. Abdel-Tawab, E.M. Fahmy, H.T. Mahfouz, **H.F. Eissa** and M.A. Madkour (2003). Constitutive expression of bacterial fructan-accumulating gene for drought tolerance in Egyptian wheat. Egyptian J. Genetics and Cytology, 32: 391-405.
- Mahfouz , H. T., Dina El-Khishin, F.M. El-Domyati and **H.F. Eissa** (2003). Identification of some Egyptian wheat cultivars utilizing PCR-based analysis. Egypt. J. Genet. Cytol., 32: 183-210.
- Bahieldin, A., H.T. Mahfouz, **H.F. Eissa**, O.M. Saleh, A.M. Ramadan, I.A. Ahmed, W.E. Dyer, H.A. El-Itriby and M.A. Madkour (2005). Field evaluation of transgenic wheat plants stably expressing the *HVA1* gene for drought tolerance. *Physiologia Plantarum*, 123: 421-427.
- Bahieldin, A., **H.F. Eissa**, H.T. Mahfouz, W.E. Dyer, M.A. Madkour and R. Qu (2005). Evidence for non-proteinaceous inhibitor(s) of β -glucuronidase in wheat (*Triticum aestivum*) leaf and root tissues. Plant Cell, Tissue and Organ Culture, 82: 11-17.
- Bahieldin, A., I.A. Ahmed, Gh.A. Gad El-Karim, **H.F. Eissa** and O.M. Saleh (2006). DGGE-RAPD analysis as a useful tool for cultivar identification. African Journal of Biotechnology, Vol. 5 (8), pp. 566-569.
- Eissa, H.F.**, A. Shokry, O.M. Saleh, A.M. Ramadan, A. Bahieldin and W. E. Dyer (2007). Genomic characterization of stress-related genes from wild barley. Second International Conference of Genetic Engineering and its applications. Egypt. J. Genet. Cytol., 36: 1-23.
- Shokry A., A. Bahieldin, F. M. Abdel-Tawab, **Hala F. Eissa**, O.M. Saleh, and Gh. A. Gad El-Karim (2007). Functional Genomics for Salt Tolerance in Rice (*Oryza sativa* L). Second International Conference of Genetic Engineering and its applications. Sharm El-Sheikh, Egypt. Egypt. J. Genet. Cytol., 36: 207-217.
- Bahieldin A., **H. F. Eissa**, A. Ramadan and A.Z.E. Abdelsalam (December 2007). Applications of Genetic Engineering in Addressing Adverse Environmental Conditions for Agricultural Productions. Journal of Agricultural Investment (A refereed Scientific Journal), The Arab Authority for Agricultural Investment and Development (AAID), P.O. Box: 2102 Khartoum, Sudan.

- Hassanein, F.M. Abdel-Tawab, E.M. Fahmy, Gh. A. Gad El-Karim, T. Alniemi, M. Abdelsalam, S. Mostafa, A.M. Ramadan, O.M. Saleh, **Hala F. Eissa** and A. Bahieldin (2009). Molecular assessment of chitinase activity in transgenic wheat. *Egypt. J. Genet. Cytol.*, 38: 207-220.
- Assem, Shireen K., **Hala F. Eissa** and O.M. Saleh (2009). Optimization of *Agrobacterium*-mediated transformation conditions for Egyptian bread wheat cv. G164. *Egypt. J. Genet. Cytol.*, 38: 221-234.
- Abou Ali, R.M.I., G.M.L. Shanab, A.S. El-Din Haider, **Hala F. Eissa** and A.M. Salem (2010). Characterization and expression of abscisic acid inducible gene(s) in wild legumes. *Egypt. J. Genet. Cytol.*, 39: 57-71.
- Ramadan, A.M., **Hala F. Eissa**, F.M. El-Domyati, O.M. Saleh, N.E. Ibrahim, M. Salama, M.M. Mahfouz and A. Bahieldin (2011). Characterization of inhibitor(s) of β -glucuronidase enzyme activity in GUS-transgenic wheat. *Plant Cell, Tissue and Organ Culture (PCTOC)*, 107(3): 373-381.
- Sayed L.M., F.M. Abdel-Tawab, Eman M. Fahmy, A. Shokry, **Hala F. Eissa** and A. Bahieldin (2011). Isolation of salt related gene (*HVP1*) from barley (*Hordeum spontaneum* L.). *Proceed. 3rd Inter. Conf. Genet. Eng. & Its Appl.* : 117-130.
- Ramadan, K.A.; A.Z. Abdel Azeiz, S.E. Hassanien and **H.F. Eissa** (2012). Biodegradation of used lubricating and diesel oils by a new yeast strain *Candida viswanathii* KA-2011. *African Journal of Biotechnology*, 11(77): 14166-14174.
- Bahieldin, A.; M.A. Aziz, O. Osama and **H.F. Eissa** (2012). Comparative analysis of biolistic device versus laser beam micropuncture on efficiency in transforming bread wheat *Triticum aestivum* L. *Science Series Data Report*, 4(4): 35-43.
- Bahieldin, A., A.M. Ramadan, A. Atef, N.O. Gadalla, S. Edris, A.M. Shokry, S.M. Hassan, **H.F. Eissa**, K.B.H. Kamal, S. Rabah, O.A. Abuzinadah, M.A. Al-Kordy and F.M. El-Domyati (2012). Detection of Stably Expressed Genes Contributing To PCD Triggered by Exogenous Oxalic Acid Treatment in Tobacco. *Life Science Journal*, 9(4): 5027-5034.
- Mansour, H.M., F.M. Abdel-Tawab, Eman M. Fahmy, Suzan R. Mahrous, **Hala F. Eissa** and O.M. Saleh (2012). Modifications of gene expression of some quality traits in bread wheat using gamma irradiation. *Egypt. J. Genet. Cytol.*, 41: 37-48.
- Ramadan, A.M., **H.F. Eissa**, S.E. Hassanein, A.Z. Abdel Azeiz, O.M. Saleh, H.T. Mahfouz, F.M. El-Domyati, M.A. Madkour and A. Bahieldin (2013). Increased salt stress tolerance and modified sugar content of bread wheat stably expressing the *mtID* gene. *Life Science Journal* 10(2): 2348-2362.
- Alzohairy, Ahmed M., Gábor Gyulai, Mohamed F. Ramadan, Sherif Edris, Jamal S. M. Sabir, Robert K. Jansen, **Hala F. Eissa** and Ahmed Bahieldin (2014). Retrotransposon-based molecular markers for assessment of genomic diversity. *Functional Plant Biology*, doi: 10.1071/FP13351.
- Bahieldin, Ahmed, Magdy A. Al-Kordy, Ahmed M. Shokry, Nour O. Gadalla, Ahmed M.M. Al-Hejin, Jamal S.M. Sabir, Sabah M. Hassan, Ahlam A. Al-Ahmadi, Erika N. Schwarz, **Hala F. Eissa**, Fotouh M. El-Domyati and Robert K. Jansen (2014). Corrected sequence of the wheat plastid genome. *Molecular Biology and Genetics*, C. R. Biologies, 337: 499–502.

- Ghareb, H. E., B.A. Hussein, **Hala F. Eissa**, A. M. Shokry, S.E. Hassanein, M. F. Gabr and N.A. Abdallah (2014). Isolation of some drought stress related cDNAs from *Rhus tripartita* plant via differential display. Arab J. Biotech., Vol. 17, No. (1): 43-58.
- Heba H Abouseadaa, Gamal H Osman, Ahmed M Ramadan, Sameh E Hassanein, Mohamed T Abdelsattar2, Yasser B Morsy, Hussien F Alameldin, Doaa K El-Ghareeb, Hanan A Nour-Eldin, Reda Salem, Adel A Gad, Soheir E Elkhodary, Maher M Shehata, Hala M Mahfouz, **Hala F Eissa** and Ahmed Bahieldin (2015). Development of transgenic wheat (*Triticum aestivum* L.) expressing *avidin* gene conferring resistance to stored product insects. BMC Plant Biology, 15: 183-191. DOI 10.1186/s12870-015-0570-x.
- Ahmed Bahieldin, Ahmed Atef, Jamal S.M. Sabir, Nour O. Gadalla, Sherif Edris, Ahmed M. Alzohairy, Nezar A. Radhwan, Mohammed N. Baeshen, Ahmed M. Ramadan, **Hala F. Eissa**, Sabah M. Hassan, Nabih A. Baeshen, Osama Abuzinadah, Magdy A. Al-Kordy, Fotouh M. El-Domyati, Robert K. Jansen (2015). RNA-Seq analysis of the wild barley (*H. spontaneum*) leaf transcriptome under salt stress. C. R. Biologies, 338: 285–297.
- Eissa, F. Hala** (2016). Characterization of photosystem transmembrane genes under sudden water supply in *Calotropis procera*. Egypt. J. Genet. Cytol., 45: 1-32.
- Eissa, Hala F.**, Sameh E. Hassanien, Ahmed M. Ramadan, Moustafa M. El-Shamy, Osama M. Saleh, Ahmed M. Shokry, Mohamed Abdelsattar, Yasser B. Morsy, Maher A. El-Maghraby, Hussien F. Alameldin Sabah M. Hassan, Gamal H. Osman, Hesham T. Mahfouz, Gharib A. Gad El-Karim, Magdy A. Madkour and Ahmed Bahieldin (2017). Developing transgenic wheat to encounter rusts and powdery mildew by overexpressing barley chi26 gene for fungal resistance. Plant Methods. 13:41, DOI 10.1186/s13007-017-0191-5.
- Ramadan, Ahmed M, Ahmed Abdel Azeiz, Saeed Baabad, Sameh Hassanein, Nour O Gadalla, Sabah Hassan, Mardi Algandaby, Salwa Bakr, Thana Khan, Heba H Abouseadaa, Hani Mohammed Ali, Areej Al-Ghamdi, Gamal Osman, Sherif Edris, **Hala F. Eissa**, Ahmed Bahieldin (2019). Control of β -sitosterol biosynthesis under light and watering in desert plant *Calotropis procera*. Steroids, 141,1–8. <https://doi.org/10.1016/j.steroids.2018.11.003>.