

Curriculum vitae and publication list

Personal Details :-

Family Name : Hanafy
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Date of Birth : 22-9-1970
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Nationality : Egyptian
Marital Status : Married
Current employment : Research Professor of Plant Biotechnology
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German (Good), Japanese (Fair)
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Qualifications:-

- 1- B.Sc. Horticulture, Cairo University, Faculty of Agriculture, Egypt (1991).
- 2- M.Sc. Plant Tissue Culture, Cairo University, Faculty of Agriculture, Egypt (1996).
- 3- **Dr.rer.nat. (Ph.D.), Institute of Molecular Genetics – Hannover University, Germany (2002).**

Appointments:

- 1- Research Assistant, Plant Tissue Culture Lab., Agricultural Research Centre, Ministry of Agriculture and Land Reclamation (M.O.A.&L.R.), (1992-1993).
- 2- Research Assistant, Plant Cell & Tissue Culture Dept., Genetic Engineering and Biotechnology Division. National Research Centre NRC (1993 - 1996).
- 3- Associate Researcher, Plant Cell & Tissue Culture Dept., Genetic Engineering and Biotechnology Division. National Research Centre NRC (1996 - 1998).
- 4- Research Fellow at Institute of Applied Genetic - **Free University of Berlin - Germany (1998-2001).**
- 5- Ph.D student at Institute of Molecular Genetics – **Hannover University, Germany (2001-2002).**
- 6- Researcher at Plant Biotechnology Dept., Genetic Engineering and Biotechnology Division, National Research Centre (NRC). Cairo, Egypt.
- 7- Researcher at **National Agricultural Research Centre for Hokkaido Region, Sapporo - Japan, through a post-doctoral fellowship from Japan Society for the Promotion of Science (JSPS)** from November 2003 till November 2005.
- 8- Associate Professor at Plant Biotechnology Dept., Genetic Engineering and Biotechnology Division, National Research Centre (NRC). Cairo, Egypt- from August 2008 till 30th of March 2015.
- 9- Visiting scientist to Plant Molecular Genetics Department, **Hannover University, Germany**, through Georg Forester Fellowship for Experienced Researchers (**Alexander von Humboldt, AvH**) from October 2008 till December 2010.
- 10- Associate Professor, Biology Department, Faculty of science and Humanities, Salman bin Abdul-Aziz University, KSA. from January 2012 till June 2013.
- 11- Associate Research Professor at Plant Biotechnology Dept., Genetic Engineering and Biotechnology Division, National Research Centre (NRC). Cairo, Egypt- from June 2013 till 30th of March 2015.

12- Research Professor at Plant Biotechnology Dept., Genetic Engineering and Biotechnology Division, National Research Centre (NRC). Cairo, Egypt- from 31st of March 2015 till now.

Awards:

- **Prize of the president of the National Research Centre for best applied research, 2008.**
- **National Research Centre Prize for scientific encouragement in biology, 2013.**

Fellowships and honours:

1. Pre-doctoral fellowship from German Academic Exchange Service (DAAD) towards a doctoral degree, Channel system (June 1998 until March 2001).
2. Doctoral fellowship from Hannover University-Germany (April 2001-July 2002).
3. Postdoctoral fellowship from Japan Society of the Promotion of Science (JSPS) from November 2003 till November 2005.
4. Alexander von Humboldt post-doctoral fellowship for experienced researchers (AvH), Georg Forester program, from September 2008 till October 2010.

Training Courses:

Completed the following international courses:

- 1- Plant Biotechnology and Bio-safety, (14-24 October, 1995) Egypt, International Centre for Genetic Engineering and Biotechnology (ICGEB).
- 2- Basics in Biotechnology, (7-19 December, 1996) Ain Shams Univ., Ain Shams Centre of Genetic Engineering and Biotechnology (ACGEB) Egypt.
- 3- Biotechnology: Micropropagation and related Techniques for the Conservation and Use of Plant Genetic Resources and the Improvement of Crops, (Feb. 3– June 4, 1997) German Foundation for International Development (DSE), Germany.
- 4- Project management course, (November 11- December 25, 2005). Regional IT Institute a “registered Education provider” of the project management Institute (PMI). Cairo, Egypt.

Professional Activities:-

- 1- American Society of Plant Biologists (ASPB).
- 2- Legume society (LS).
- 3- International Association for Plant Tissue Culture and Biotechnology (IAPTC&B).
- 4- Egyptian Society for Genetics.
- 5- Arab Society for Medicinal Plants Research.

List of Recent Publications:-

a. Published articles:

1. El Shabrawi HM, Asker M, Aly UI, Ghareeb H, Gabr AM, Hanafy MS, Liu CM (2015) In vitro functional analysis of synthetic Cupep-1 and Cupep-2 peptides from phloem sap of Chinese long cucumber. *Plant Tissue Culture and Biotechnology*, 25(1), 71-85.
2. **Hanafy MS**, Rahman SM, Ali UI, Fujiwara T., Ishimoto M. (2014). *Agrobacterium*-mediated transformation of soybean and recovery of transgenic plants by micro-grafting. Proceeding of the third international conference "Sustainable Development of Natural Resources in the Nile Basin Countries " Institute of African Research and Studies, 14-15 April 2014, Cairo University, Egypt. 149-170.
3. **Hanafy MS**, El-Banna A, Schumacher HM, Jacobsen H-J, Hassan F (2013) Enhanced tolerance to drought and salt stresses in transgenic faba bean (*Vicia faba* L.) plants by heterologous expression of the PR10a gene from potato. **Plant Cell Reports** 32:663-674. (<http://link.springer.com/article/10.1007%2Fs00299-013-1401-x>).
4. **Hanafy MS**, Rahman SM., Nakamoto Y., Fujiwara T., Naito S., Wakasa K. & Ishimoto M. (2013). Differential response of methionine metabolism in two grain legumes, soybean and azuki bean, expressing a mutated form of Arabidopsis cystathionine γ -synthase. **Journal of Plant Physiology** 170:338-345. <http://dx.doi.org/10.1016/j.jplph.2012.10.018>
5. Rady MR, Matter MA, Ghareeb HA, **Hanafy MS**, Saker MM, Eid SA, Hammada FM, Imbaby SI, Nazief NH (2013) In vitro cultures of *Silybum marianum* and silymarin accumulation, **Journal of Genetic Engineering and Biotechnology**. (in press) <http://dx.doi.org/10.1016/j.jgeb.2013.11.003>.
6. Aly UI., El-Shabrawi HM. and **Hanafy MS** (2010) Impact of Culture Conditions on Alkaloid Production from Undifferentiated Cell Suspension Cultures of Egyptian Henbane. *Australian Journal of Basic and Applied Sciences*, 4(10): 4717-4725.
7. **Hanafy MS**, Aly UI, Matter MA (2010) Regeneration and Transformation via *Agrobacterium tumefaciens* of *Echinacea purpurea* L. **Plant Tissue Cult. & Biotech.** 20(2): 101-111.
8. Ishimoto M, Rahman SM., **Hanafy MS**, Khalafalla MM, El-Shemy HA, Nakamoto Y., Kita Y., Takanashi K., Matsuda F., Murano Y., Funabashi T., Miyagawa H. and Wakasa K. (2010) Evaluation of amino acid content and nutritional quality of transgenic soybean seeds with high-level tryptophan accumulation. **Molecular Breeding**. 25:313–326
9. Kita Y, **Hanafy MS**, Deguchi M, Hasegawa H, Terakawa T, Kitamura K, Ishimoto M (2009) generation and characterisation of herbicide-resistant soybean plants expressing novel phosphinothricin *N*-acetyltransferase genes. **Breeding Sciences** 59:245-251.

10. Ghareeb H., Aly UI, El-Kazzaz A., **Hanafy MS** (2009) Optimization of Rice Regeneration System from Mature Seeds of Five Egyptian Rice Cultivars. **The African Journal of Plant Science and Biotechnology** (63-66).
11. El-Kazzaz A. A., **Hanafy MS**, Abdel-Kader MM (2009) *In vitro* selection of resistant rice plants against rice blast caused by *Pyricularia oryzae* via tissue culture technique. **Archives of Phytopathology and Plant Protection**, 42(9): 847–856.
12. Aly U. and **Hanafy MS** (2008) Geranium Oil Production in Suspension Cultures of *Pelargonium graveolens* L. **Medicinal and Aromatic Plant Science and Biotechnology**. 2 (1) 24-28.
13. Bekheet S.A., Taha H.S., **Hanafy MS** and Solliman M.E. (2008) Morphogenesis of sexual embryos of date palm cultured *in vitro* and early identification of sex type. **Journal of Applied Sciences Research** 4 (4): 345-352.
14. **Hanafy M.S.**, Abou-Setta LM. (2007) Saponins Production in Shoot and Callus Cultures of *Gypsophila paniculata*. **Journal of Applied Sciences Research**. 3 (10):1045 -1049.
15. **Hanafy MS**, Khalafalla MM, Rahman S M , Elshemy HA, Nakamoto Y, Wakasa K. and Ishimoto M (2006) Accumulation of free tryptophan in azuki bean (*Vigna angularis*) induced by expression of a gene (OASA1D) for a modified α -subunit of rice anthranilate synthase. **Plant Science** 171:670-676.
16. **Hanafy MS**, Pickardt T, Kiesecker H. and Jacobsen H-J (2005). *Agrobacterium*-mediated transformation of Faba bean (*Vicia faba* L.) using embryo axes. **Euphytica** 142: 227–236.
17. Rady M R, Nazif NM. **Hanafy MS**, Khalil MN, Abou-Setta LM (2005) Stimulation of Rosmarinic Acid, Essential Oils and Anthocyanin Biosynthesis of *in vitro* Cultures of Basil (*Ocimum americanum* L.) in Response to Different Cultural Conditions. **Egypt. Pharm. J.** 4,1: 91-107.
18. Rady MR and **Hanafy MS** (2004). Synthetic seeds technology for encapsulation and regrowth of *in vitro*-derived *Gypsophila paniculata* L. shoot-tips. **Arab Journal of Biotechnology**. 7, 2: 251-264.
19. **Hanafy MS** (2002). Development of an efficient transformation system to field bean (*Vicia faba*)-Manipulation of the sulphur-rich protein content via genetic engineering. **Dissertation, Hannover University-Germany**.
20. El- Kazzaz AA, Fahmy GE, El-Bahr MK, **Hanafy MS** and Moemen SH (1997). Propagation of Mulberry (*Morus alba* L.) via tissue culture. **Bull. NRC, Egypt**. 22, 2: 175-188.
21. Fahmy GE, El-Bahr MK, El-Kazzaz AA, **Hanafy MS** and Moemen, S. H. (1996). Factors affecting *in vitro* multiplication of mulberry shoots. **Al-Azhar J. Agric. Res.**, 23: 167- 184.

b. Chapters in books:

- 1- Ishimoto M and **Hanafy MS** (2005) Development and application of transformation technology in soybean. In: Kimura M. - Japanese Society of Soil Science and Plant Nutrition (Ed.) Improvement of Production and Quality of Soybean in Relation to Plant Nutrition and Physiology. Hakuyusha Co., LTD. (129-156).
- 2- **Hanafy MS**, Jacobsen H-J, Böttinger P and Pickardt T. (2008) *Agrobacterium*-mediated genetic transformation of faba bean, *Vicia faba* L. In: P.B.Kirti (Ed) Handbook of New Technologies for Genetic Improvement of Legumes. The Haworth Press, Taylor & Francis Group, New York. (287-300).
- 3- Link W, **Hanafy MS**, Malenica N, Jacobsen H-J, Jelenic S. (2008) Faba bean. In: Kole C, Hall TC (eds) A Compendium of Transgenic Crop Plants. Volume 3. Wiley-Blackwell Publishing. (71-88).
- 4- Bekheet SA and **Hanafy MS** (2011) Towards sex determination of date palm. In: Jain S. M., Al-Khayri J. M. and Johnson D. V. (eds.), Date Palm Biotechnology. Springer, the Netherlands. 26:551-560.
- 5- Bekheet SA and **Hanafy MS** (2014) Towards sex determination of date palm. In: Jain S. M., Al-Khayri J. M. and Johnson D. V. (eds.), Date Palm Biotechnology. Springer, the Netherlands. (**Arabic translation, in press**)

c. Articles presented in international Conferences

Presented several articles in several international conferences and workshops

1. Hanafy MS (2013) grain legumes transformation, where we are. Plant Biotechnology Classical and New trends symposium. December 5th 2013, National research Centre (NRC). Egypt.
2. Amian AA, **Hanafy MS**, Hassan F and Jacobsen H-J (2010) Improving Drought Tolerance and Insect Resistance in West and Central African Cowpeas. ABIC 2010: Bridging Biology and Business, September 12 -15, 2010 Saskatoon, Saskatchewan, Canada.
3. **Hanafy MS**, El-Banna A, Schumacher HM, and Jacobsen H-J (2010) Overexpression of a PR10a gene enhanced tolerance to drought stress in transgenic faba bean (*Vicia faba* L.). Pflanzenbiotechnologie in Deutschland – Wo Stehen wir? 13.-15.09.2010 Leibniz Universität Hannover, Germany.
4. **Hanafy MS**, El-Banna A, and Jacobsen H-J(2010) Generation and characterization of transgenic faba bean plants containing a pathogens-related protein (PR10a) gene. Legumes for Global Health, Legumes Crops and Products for Food, feed and Environmental Benefits,IFRCV&AEPVIII-April 26-30 Antalya, Turkey.
5. Sharaf –Eldin MA, **Hanafy MS**, Bailey JP, Piqueras A, Heslop-Harrison JSP, Fernandez JA(2009) In vitro production of callus and microcorms in Saffron (*Crocus sativus* L.). 3rd International Symposium on Saffron, Forthcoming Challenges in Cultivation Research and Economics. 20.23 May, Krokos, Kozani, Greece.
6. **Hanafy MS**, Rahman S M, Fujiwara T, Ishimoto M (2007) Green fluorescent protein as a vital marker for detection of transformation events in transgenic soybean produced by *Agrobacterium*-mediated transformation. Plant Biology 2007-Chicago, USA. Abs. no. P45001- <http://2007.botanyconference.org/engine/search/index.php?func=detail&aid=49>.
7. **Hanafy MS**, Rahman SM, Fujiwara T, Ishimoto M (2006) Over Expression of the feedback-insensitive cystathionine- γ -synthase gene from Arabidopsis causes methionine accumulation in soybean and azuki bean. 1st Egyptian-Jordanian Conference on Biotechnology and Sustainable Development: Current Status and Future Scenarios, Cairo-Egypt on December 11-14, 2006. Selected for verbal presentation.

8. Hanafy MS, Khalafalla MM, Rahman SM, Nakamoto Y, Ishimoto M, Kyo Wakasa K (2005). Enhancement of tryptophan accumulation in two grain legumes, azuki bean and soybean, expressing a modified rice anthranilate synthase α subunit (OASA1D). Plant Biology 2005-Seattle 2005. Abs. no. 1071-
9. Hanafy MS, Rahman SM, Fujiwara T, Ishimoto M (2005) Enhancement of the methionine content in two grain legumes; soybean and azuki bean by the overexpression of cystathionine γ -synthase. Conference of the Australian Branch of the International Association for Plant Tissue Culture and Biotechnology (IABTC&B) - Contributing to a Sustainable Future, Perth-Australia on September 21-24, 2005. Abs. no 12.
10. Hanafy MS, Waigand K, Gebhardt D, and Pickardt T (2001). Inheritance and expression of foreign genes in transgenic *Vicia faba* cultivars. Last minutes poster in the 4th European Conference on Grain legumes. 8-12 July 2001 Cracow- Poland.

Workshops:

1. Sharing as a lecturer in the international training workshop on plant biotechnology: A new promise for sustainable development which has been organized by the cooperation of National Research Centre and COMSATS, Egypt (December, 2005).
2. **Proposal Writing for International Research Projects – Part 1**, Organized by DAAD, bibliotheca Alexandrina/CSSP, Free University of Berlin in Cooperation with University of Kassel and Potsdam and Ministry of higher Education and State of Scientific Research at the Bibliotheca Alexandrina, from 9th – 14th of November 2007.
3. **Proposal Writing for International Research Projects – Part II, Organized by DAAD**, bibliotheca Alexandrina/CSSP, Free University of Berlin in Cooperation with University of Kassel and Potsdam and Ministry of higher Education and State of Scientific Research at the Bibliotheca Alexandrina, from 27th of May – 1st of June 2008.
4. Sharing in the organization of the training workshop on “formulation and writing project proposals” which has been organized by Research project proposal writing committee of National Research Centre, 11th – 13th March 2008.
5. **International DAAD-Alumni Summer School "Sustainability in the Organic Chemistry Lab Course". Braunschweig – Germany from 23 to 30 March 2009.**
6. **UNESCO World Conference on Education for Sustainable Development - Moving into the Second Half of the UN Decade" Bonn- Germany from March, 31st to April 2nd 2009.**
7. **The Saudi International Biotechnology Conference. Held on 18 -19 September 2012 at King Abdulaziz City for Science and Technology (KACST), Riyadh, Kingdom of Saudi Arabia.**
8. The Saudi digital library Symposium (2012). 28-29 Feb. Salman bin Abdulaziz University, Al-kharj, Kingdom of Saudi Arabia.

Research Projects:-

Principal Investigator of the following projects:

- 1- Development of fungal resistant and drought tolerant faba bean lines through genetic transformation, funded by Egyptian Academy of Scientific Research and Technology (ASRT) from 2005 till 2008.
- 2- USA-Egyptian project entitled: Genetic Transformation of Some Pathogenesis Related Genes for fungal Resistance into grain legumes (faba bean and pea) (2007-2009). Funded by USA-Egypt partnership program.
- 3- Improvement of faba bean tolerance to drought/ salt stresses by genetic modification (2015-2017). Collaborative research project Funded by Alexander von Humboldt Foundation- Germany.

Shared in the following Research Projects :-

1. Cloning of pest resistance genes from barley. Funded by USA-Egypt partnership program. (2007-2009).
2. Production of transgenic sugar beet resistant to insects. Funded by International Centre for Genetic Engineering and Biotechnology, ICGEB. (2006-2008)
3. Mapping and Cloning of Genes Controlling Insect Resistance in Barley. Funded by USA-Egypt partnership program. (2005-2007)
4. Towards production of transgenic date palm resistant to pests. Funded by International Centre for Genetic Engineering and Biotechnology ICGEB (2003-2006).
5. Production of plant-derived vaccines against both hepatitis B and C viruses. Funded by Midwest Universities Consortium for International Activities (MUCIA) and University of Illinois (2004-2006)
6. Semi-industrial production of virus-free potato seeds in vitro. Funded by Academy of Scientific Research and Technology, ASRT-Egypt (1993-1996).
7. In vitro propagation of superior cultivars of mulberry for sericulture industry. Funded by Academy of Scientific Research and Technology, ASRT-Egypt (1993-1997).
8. In vitro propagation and molecular characterization of Egyptian date palm. Funded by Academy of Scientific Research and Technology, ASRT-Egypt. (1997-2002).
9. Manipulation of the seed storage proteins of grain legumes. EU project. (1998-2002, Germany)
10. Manipulation of the seeds amino acids in soybean and azuki bean (2003 - 2005, Japan).
11. Improvement of potato resistance to black scurf and stem canker diseases using gene transfer. In house project. Contract No. WN102, (2006-2008)
12. Improvement of production and adaptation of some medicinal plants, woody plants and ornamental plants as a source for national income. In house project, contract No. 8040771. (2007-2010)
13. Development of drought tolerant faba bean lines through genetic transformation. In house project, contract No. WN20101.2007 till 2010.
14. Development of clove (*Eugenia caryophyllus*) cell lines contain high ratio monoterpenes essential oils using biotechnology for adding to some dairy products as natural antioxidant. In house project, contract No. 10070206.

Teaching Experiences :

- 1- Teaching in training courses for postgraduate students.
- 2- Supervising several M.Sc. and PhD Students.

References:

1-Prof. Dr. Hans-Jörg Jacobsen

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2- Prof. Dr. M. Ishimoto

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3- PD. Dr. Thomas Pickardt

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