CURRICULUM VITAE

Ayman M.H. Esh
Plant Pathology (PhD)
Mol. and Gen. Eng. (PhD)

Personal/Contact Information:

Name:	**Ayman Mohamed Hosny El-Saied Esh**
Date of Birth	24-05-1965
Marital status	Married (1 kid)
Address (work):	Sugar Crops Research Institute Agricultural Research Center 9 Cairo University street, Giza, EGYPT
Address (Home):	24, Street no. 4, Hay El-zohour Zagazig, EGYPT
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Academic background:

1982-1986	**B.Sc. Plant Pathology**, Zagazig Univ. Average grades (**V. Good**).
1987-1992	**M.sc. Plant Pathology**, Zagazig Univ. "Studies on Potato Storage diseases In Egypt" Average grades (**Excellent**)
1995-2000	**PhD Plant Pathology**, Zagazig Univ. "Studies of Some Sugar Beet Root Rot Diseases In Egypt" Average grades (**Excellent**)
2006-2007	**Higher Diploma** "Laser Applications In Biotechnology and Agriculture" The National Institute of Laser Enhanced Sciences (NILES), Cairo Univ. Average grades (**V. Good**)
2013	**PhD in Molecular biology and Genetic Engineering**, Genetic engineering and biotechnology Research Institute, Sadat City Univ. Sadat City, Egypt. Average grades (**Excellent**)

Professional Experience:

1986 - 1992	**Research Assistant** (Plant Pathology) Fac. Agric., Zagazig Univ.
1992 -2000	**Assistant Researcher** (M.Sc.) Plant Pathology, Sugar Crops Research Institute (SCRI), ARC, Giza,

	EGYPT
2000-2006	**Researcher** (PhD.) Plant Pathology, Sugar Crops Research Institute (SCRI), ARC, Giza, EGYPT
2006 - 2011	**Senior Researcher**. Plant Pathology, Sugar Crops Research Institute (SCRI), ARC, Giza, EGYPT.
2008 - 2009	Director of SCRI's Molecular Biology and Tissue Culture Laboratories and Greenhouses.
2011- 2013	**Research Professor** Plant Pathology, Sugar Crops Research Institute (SCRI), ARC, Giza, EGYPT.
2013- present	**Head of Plant Pathology and Entomology Research Department** Sugar Crops Research Institute (SCRI), ARC, Giza, EGYPT.

Technical experiences and Skills:

- Isolation and identification of plant pathogenic fungi, bacteria and virus pathogens
- Producing polyclonal antibodies.
- Immunological techniques, ELISA, dot- blot and Immunofloresent technique
- DNA Based techniques, RAPD-PCR, SSR, ISSR, RT-PCR, AFLP, DNA libraries, DNA cloning, transformation of plant, fungi and bacteria
- Bioinformatics: Familiarity with the use of bioinformatics analysis tools and methodologies.
- Proteins, isoenzymes electrophoresis and western blotting.
- Lypholyzation.
- Plant histopathology techniques.
- Tissue, organ and plant cell culture.
- Experimental design and a strong analytical, problem solving, data evaluation and statistical skills.
- Excellent presentation and report making abilities

Related other experiences:

Computer:

- Gel analysis software :
- Phoretix software analysis 1D pro electrophoresis gels
- Easy lab software gel analysis
- Statistics analysis
- SPSS
- MSTAT
- Microsoft office
- Adobe Photoshop
- Corel draw

International training courses:

1997 (2 weeks)	-CIRAD-CA, Montpelier, France " use of different DNA based techniques and immunological techniques in detecting and identifying sugarcane viral and bacterial

pathogens".

1997 (2 weeks)	- CIRAD-CA, Guadeloupe, France " use of different tissue culture and micropropagation techniques in producing free-disease sugarcane plants".
2006 (10 days)	International center of Genetic Engineering and Biotechnology – Trieste. Italy ""Quorum Sensing in Plant Associated Bacteria"
2007 (30 days)	University of Delaware, Plant and soil Sciences Dept., USA. "Detecting endo-parasitic microorganisms on plant pathogenic fungi 2 Aug. – 31 Aug. 2007." A full board invitation from Prof. Dr. Thomas Evans
2007 (60 days)	University of Delaware, Plant and soil Sciences Dept., USA. Visitor Post-Doctor, on detecting endo-parasitic microorganisms on plant pathogenic fungi. Nov. 2007 – 1 Jan. 2008."
2008 (6 days)	The 9th International Congress of Plant Pathology (ICPP) Torino, Italy 24 – 29 Aug. 2008.
2009 (6 month)	North Carolina state University, Plant Pathology Department, Prof,Dr. Marc Cubeta laboratory USA. Post-Doctor, on detecting endoparasitic microorganisms on plant pathogenic fungi (Rhizoctonis solani).
2010 (1 month)	Visiting scholar, USDA, Houma sugarcane research station USA, Dr. M. Grisham laboratories
2011 (14 days)	Tangier, Morocco "Europian Molecular biology association (EMBO) Lecture Course: Bioinformatics training workshop: Tools, Resources and Applications ", from 13th - 26th June 2011.
2013 (3 months)	North Carolina state University, Plant Biology Department, Prof, Dr. M. Daub laboratory USA. Visitor Scholar, on Identifying some putative crcosporin resistant genes from the fungus Cercospora beticola, C. nicotianae. 12/Jan to 15 April 2013.

Local training courses:

1994 (10 days)	-National Agriculture Research project and USAID, Agriculture ResearchCenter, Egypt. "sugar beet breeding and production".
1995 (2 weeks)	-The Academy of Scientific research in collaboration with International Center of Genetic Engineering and Biotechnology, Egypt " Plant biotechnology and biosafety" (Plant transformation, Molecular cloning).
1996 (10 days)	-The Center of Agricultural studies and Consulting, Ain Shams Univ. Egypt " use of protein, isozyme and immuno electrophoresis and western blotting in generating fingerprints to the genetic resources".

1997 (2 weeks)	-The Center of Agricultural studies and Consulting, Ain Shams Univ. Egypt " the use of PCR in generating fingerprints for the genetic resources and generating a genetically modified plants by using gene-gun"
2002 (5 days)	-Genetic Engineering and biotechnology Institute, Monufya Univ. Egypt – the Egyptian German workshop on plant genomics: from the gene to the product.
2004 (5 days)	Egypt-USA Molecular biotechnology protocol for continuous medical education " insights into molecular and biomedical advances" Ein Shams Univ, and Rosalind Franklin Univ., Cairo, Ain Shams University.
2004 (2 days)	Sigma-Aldrich workshop on "Molecular biology and cell culture, the Egyptian society of genetics
2005 (3 days)	National research center, workshop on "Prospects of the recent agricultural research"
2005 (12 days)	The central laboratory of date palm research and development, ARC, Giza "Plant tissue and Organ Culture"

Research Projects:

- **Project 336, National agriculture Research Projects (NARP)** "Integrated pest management of the main vegetables in the newly reclaimed lands", 1989-1993 (assistant researcher).
- **Egyptian-Franco Project Co with CIRAD-CA** "Screening Sugarcane varieties for resistance to diseases and pests" 1996-1999)assistant researcher).
- **Egyptian Franco Project with collaboration with CIRAD-CA.** "Screening Sugar cane Varieties for Resistance to Diseases and Pests in Greenhouse and in the Sugarcane Growing Areas. 1996-1999. (PostDoc).
- **US-EGYPT Joint Research Grant** "Genetic Exploration of the Evolution of Pectobacterium Pathogenesis" 2003 – 2007.(PostDoc).
- **Academy of Scientific Research and Technology Research Grant** "Integrated pest management of sugar beet and sugarcane crops 2004-2008.(PostDoc).
- **US-EGYPT Joint Research Grant,** SCRI and Sugarcane research unit, USDA, Houma " Improving Sugarcane Production Efficiency by Inoculating Disease-free Plants with N_2-Fixing Bacteria." (co-PI , 2008-present)
- **Academy of Scientific Research and Technology Research Grant** "The role of endophytic microorganisms in major sugarcane diseases resistance (co-PI , 2008-present)
- **Academy of Scientific Research and Technology Research Grant "** Agro Extension and approaches to improve sugarcane Productivity through transplanting methods" (co-PI, 2012 – present).
- **US-EGYPT Joint Research Grant, _** North Carolina state university, USA and Fayoum University Egypt. « Development of Disease Resistance to Cercospora Diseases of Crops » (co-PI 2011 to present)

Affiliation/ Memberships:

- Egyptian Phytopathology Society.
- The Egyptian Sugar Council.
- The Arab Society for Plant Protection.
- The Egyptian Sugar experts Society.

Books and Chapters:

- **Esh, A.M.H 2010**. Chapter 17, Etiology, Epidemiology and Management of Fungal Diseases of Sugarcane. In Editors Arun Arya and Analía Edith Perelló 2010. Management of fungal plant pathogens, CABI , England.

- **Esh et al., 2009** Viral diseases affecting sugar crops (sugarcane and sugar beet) Chapter 14, In Makkouk, K., G. Figla and S. Kumari 2009. Viral Diseases of the economic crops in the Arabian region. Arab society of plant protection, pp530. (In Arabic).

- **El-Kholi M.A. And A.M.H. Esh (2012) "**Techno-economic study on Stevia production and development opportunities under Egyptian conditions » Agriculture and agro-Industrial technologies, and EMPA, 40 pp (www.emap-eg.org).

- **Esh, A.M.H** . Chapter xx , « Molecular Markers and Phytopathology" In Editors Neeta Sharma, Plant pathology and recent technologies. (Under Publication).

GeneBank Accession numbers:

- **JQ290342** Sporisorium scitamineum isolate ADA1 b East mating-type protein gene, partial cds.
- **JQ912111** Sporisorium scitamineum strain ADA-1 18S ribosomal RNA gene,partial sequence; internal transcribed spacer 1, 5.8S ribosomal RNA gene, and internal transcribed spacer 2, complete sequence; and 28S ribosomal RNA gene, partial sequence.
- **JQ912112** Sporisorium scitamineum strain HAQ-2 18S ribosomal RNA gene,partial sequence; internal transcribed spacer 1, 5.8S ribosomal RNA gene, and internal transcribed spacer 2, complete sequence; and 28S ribosomal RNA gene, partial sequence.

Reviewer of the scientific Journals:

- Phytopathology (USA).
- African Journal of Agriculture Research
- International Journal of Physiology and Biochemistery

Publications:

- -Tohamy MRA, MI Abou Zaid, MA Khedr, **AMH Esh (1992).** Factors affecting the susceptibility of potato tubers to soft rot bacteria. Zag. J. Agric Res. 19:96-107.
- -Aly, A.Z.; M.R.A. Tohamy; M.A. Khedr; and **A.M.H. Esh (1993)**: chemical control of potato soft rot disease incited by Erwinia carotovora subsp. carotovora. Zag. J. Agric Res. 20:177-187.
- -El-Kholi, M. MA.; and **A.M.H. Esh (1999)**. Rapid micropropagation of sugarcane as a tool for producing pathogens free cuttings. Proceeding of The First International Conference in Egypt on Plant Tissue Culture and its Applications Giza, Egypt 449-457.
- -Tohamy M.R.A.; M.MA. El-Kholi; A.Z. Aly and **A.M.H. Esh (2002)**. Boi-agents for controlling sugar beet seedling diseases. Proceedings of First Conference of the Central Agricultural Pesticide Laboratory, Giza, Egypt 338-347.
- -**Esh, A.M.H.** and M.MA. El-Kholi **(2003)**. Sclerotium rolfsii saac. Root rot and its effect on sugar beet quality. Proceedings of First Conference on Farm Integrated Pest Management, Fac. Agric, Fayoum Univ. Egypt 72-80.
- -El-Kholi, M.MA.; A.S. El-Debaby; **A.M.H**.**Esh** and Rehab T. Behairy **(2003)**. Sugar beet transplanting via paper-pots to control damping off and root rot diseases. Proceedings of First Conference on Farm Integrated Pest Management, Fac. Agric, Fayoum Univ. Egypt 61-71.
- -**Esh, A.M.H.**; M.MA.El-Kholi; A.Z. Aly and M.S. Shalaby **(2004)**. Characterization and diversity of Rhizoctonia solani Kuhn infecting sugar beet under Egyptian conditions. Proceeding of the International Conference of Genetic Engineering and its Applications Sharm El-Shaikh, Egypt, 299-316.
- El-Kholi M.MA.; A.Z. Aly and **A.M.H. Esh (2005)**. Enzymatic activity and Isozymes Patterns in mature healthy and infected (Rhizoctonia solani) sugar beet roots. Egypt. J. Agric. Res. 2: 225-241.
- -**Esh, A.M.H. (2005)**. Controlling sugar beet Cercospora leaf spot disease using environment friendly calcium salts. Zagazig J. Agric. Res.,32-1517-1535.
- -**Esh, A.M.H** and M.MA. El-Kholi **(2005)**. Effect of Pseudomonas fluoresces extracellular enzymes and secondary metabolites on Rhizoctonia solani the causal of sugar beet damping-off disease. Zagazig J. Agric. Res., 32:1537-1557.
- -**Esh, A. M. H**. and M. MA El-Kholi **(2005)**. Influence of Sugarcane Streak Mastrevirus"SSV" on Metabolic Activity, Yield and Sucrose in cane. Egypt J. Agric. Res., 83:1415-1430.
- **Esh, A. M. H**. and M. MA El-Kholi **(2006)**. The effect of calcium compounds on Cercospora beticola growth parameters and cercosporin production in vitro Egypt J. appl. Sci. 21:29-40
- Atia, M.M.M and **A.M.H., Esh (2005)**. Role of Biotic and Abiotic Agents on controlling Alternaria Fruit rots of Tomato and Pepper.Annals of Agric. Sci., Moshtohor, 43:1423-1440.
- El-Kholi, M.MA.; A.Z Aly; and **A.M.H. Esh (2006)**. Role of Calcium

Levels in Sugar Beet Resistance to Root-rot Disease. Proceedings of The Ninth Arab Congress of Plant Protection Syria, Damascus, 19-22 November, 2006.

- **Esh, A. M. H.** and El-Kholi M. MA **(2007)**. First record of The Perfect Stage of Powdery Mildew of Sugar Beets In Egypt. Zagazig J. Agric. Res. 85: 1263
- Shalaby, A.A.; T.A. Evans; Sahar. A. Youssef and **A.M.H. Esh (2007)**. Detection, identification and salt tolerance of potato soft rot Erwinia spp. in Egypt. Proceeding of the 7th African Potato Association Conference: Alexandria University, Egypt 22-26 August 2007.
- **Esh, A. M. H** and M.S. Shalaby **(2008).** Environmentally Safe Compounds In Controlling Sugar Beet Powdery Mildew. Proceeding of the 14th International conference of Plant pathology ICPP, Torino, Italy (Abst.).
- **Esh, A. M. H** and M.S. Shalaby **(2008).** Environmentally Safe Compounds In Controlling Sugar Beet Powdery Mildew. Egypt J. appl. Sci. 23:447-461.
- **Esh, A. M..H.** and T. Evans **(2008)**. A New Endoparasitic Microorganism Infecting Rhizoctonia solani and other Plant Pathogenic Fungi. Proceeding of the 14th International conference of Plant pathology ICPP , Torino, Italy 24 Aug. – 29 Aug. 2008
- El-Kholi, M.MA.; A.Z Aly; and **A.M.H. Esh (2008)**. Role of Calcium Levels in Sugar Beet Resistance to Root-rot Disease. Proceedings of International conference IS-2008, International Association of professionals in Sugar and integrated Technologies (IAPSIT), Arish, Egypt 11-14 September 2008 pp 405-411.
- Khaled, K.A. and **A.M.H. Esh (2008)**. High quality Genomic DNA Impurities-free From Sugar Crops and Other Plant Tissue. Proceedings of International conference IS-2008, International Association of professionals in Sugar and integrated Technologies (IAPSIT), Arish, Egypt. pp 330-332.
- Taghian, Shadia**; A. M. H. Esh;** A. Z. Aly and M. R. A. Tohamy **(2008).** Bacillus subtilis as bioagent used to control cercospora sugar beet leaf spot disease Zagazig J. Agric. Res. 35 : 210-224.
- **Esh, A. M. H.;** M. M. M. Atia and Shadia, Taghian **(2010).** Phyllosphere microflora of sugar beet and their interaction with Cercospora beticola the causal agent of cercospora leaf spot disease. Egypt J. appl. Sci. 25:340-361.
- Atia, M.M.M., **A.M.H. Esh,** and Taghian, Shadia **(2011).** Effect of leaf surface fungal isolates in controlling cercospora leaf spot of sugar beet. Egypt J. appl. Sci. 26:13-37.
- **Esh, A. M. H.,** M. M. M. Atia, M.R.A. Tohamy, Shadia, Taghian **(2011).** Systemic resistance in sugar beet eliciated by non-pathogenic, phyllosphere-colonizing bacillus pumilus and b. Subtilus against the pathogen cercospora beticola sacc. Mansoura J. Plant Prot. and Path.,2:67-83.
- El-Kholi, MA. and **Esh, A.M.H. (2011).** Comparative structural and biochemical study on calcium effects on cercospora leaf spot disease of sugar beet. Mansoura J. Plant Prot. and Path.,2:58-97.

- **Esh, A.M.H,** El-Kholi, MA. M. and Taghian (Shadia) **(2011).** Antagonistic activities of bacillus amyloliquefaciens from phyllosphere of sugar beet against cercospora beticola sacc. Mansoura J. Plant Prot. and Path., 2:99-116.
- **Esh, A.M.H.** and Kamhawy, M.A. **(2010).** Carbendazim and Mancozeb combination for controlling Cercospora leaf spot in Sugar Beet (Beata vulgaris L.). Egypt J. appl. Sci. 25:242-255.
- **Esh, A. M. H.** and R. E. A. Moghaieb **(2011).** Analysis of morphological, pathological and genotipic diversity in (Cercospora beticola sacc.) from different sugar beet cultivation in Egypt. Arab journal of biotechnology 14:77-88.
- M. P. Grisham, P.M. White, Jr., **A.M.H. Esh** and M. El-Kholi **(2011)**. Biological Nitrogen Fixation in Louisiana Sugarcane. Journal of the American Society of Sugar Cane Technologists 31: 65 (Abst.).
- **Esh, A. M. H. ;** ElKholi, MA ; Tohamy, M. R. A. and A. Z. Ali **(2011).** The relationship between production of cell wall degrading enzymes by sugar beet root rot pathogens and cell walls isolated from the roots of different sugar beet varieties. Proceeding of the International Conference of Genetic Engineering and its Applications Sharm El-Shaikh, Egypt.
- **Esh, A.M.H**; A.A. Guirgis; M.MA. Elkholi; E. A. El-Absawy; M.I. Nasr; Hassanien E.H. **(2011)**. Pathogenesis Related Proteins Activity in Sugarcane Resistant and Susceptible Mutants To Ustilago Scitaminea Proceeding of the International Conference of Genetic Engineering and its Applications (Oct., 5-8 2011), Sharm El-Shaikh, Egypt. 3:163-183.
- Hassanien E.H.; M.I. Nasr; M.MA. Elkholi; A.A. Guirgis; E.A. El-Absawy; **Esh, A.M.H. (2012).** Gamma radiation induced mutagenesis-selection system for smut resistance in sugarcane. The Egyptian J. Agric. Res. The Egyptian J. Agric. Res. 90:711-726.
- **Esh, A.M.H.;** M. El-Kholi; M. P. Grisham and P.M. White, Jr. **(2012).** Diversity and antifungal activity of endophytic diazotrophic bacteria colonizing sugarcane in Egypt. Proceedings of International Society of Sugar Cane Technologists, 10th Pathology Workshop, Nanning, China. pp.61
- M. El-Kholi and **Esh, A.M.H.**. **(2012).** Sugarcane diseases in egypt research and development. Proceedings of International Society of Sugar Cane Technologists, 10th Pathology Workshop, Nanning, China. pp.43

Papers under publication :

- **Esh, A.M.H.** and Moghabi R. **(201x)**. Characterizing the genetic diversity of Ustilago scitaminea In Egypt. (In press).
- **Esh, A.M.H. (201x)** Occurrence of Gluconacetobacter diazotrophicus in sugarcane Egyptian cultivars. (In press)
- **Esh, A.M.H.** El-Kholi, M.MA.; and Taghian (Shadia) **(201x)**. Enzymatic activity and Isozymes Patterns in mature healthy and infected (Cecospora beticola) sugar beet.
- **Esh, A.M.H. (201x)** Development and evaluation of an enzyme-linked immunosorbent assay (ELISA) and Dotblot-ELISA for the early detection sugarcane smut (Ustilago scitaminea).
- **Esh, A.M.H. (201x)** Production of Polyclonal Antibodies Against

Ustilago scitaminea

References:

In Egypt:

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Notarization. I have read the following and certify that this curriculum vitae is a current and accurate statement of my professional record.

Signature  **Date** (mm /dd / yyyy) **01 / 14 / 2013**