

**CURRICULUM VITAE**

Dr. Ehab Mohamed Rabei Metwali



Name: Ehab Mohamed Rabei Metwali Gharieb

Date of Birth: 25/9/1971

Place of Birth: Zagazig-Egypt

Material Status: Married

Nationality: Egyptian

Religion: Muslim

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Work address:

Div. of Genetics, Dep. of Botany

Faculty of Agriculture

Suez Canal University

Ismailia 41522, Egypt

**Language:**

Language	conversion	Written	technical
Arabic	Excellent 100%	Excellent 100%	Excellent 100%
English	Excellent 98%	Excellent 100%	Excellent 97%
Germany	Good 70-74%	Very Good 100%	Good 72%

Present employment: Lecturer of Genetics and Molecular Genetics, Genetic Division, Dept. of Botany, Faculty of Agriculture in Ismailia, Suez Canal University, Ismailia 41522, Egypt

**Brief details of main duties :****\*Teaching Experience**

a- Teaching of the following modules for undergraduate and postgraduate students:

1- Principle of Genetics

3- Plant Breeding

5- Biochemical

7- Biometrical Genetics

9- Genetic Engineering

11- Radiation Genetics

12- Breeding and Inheritance of abiotic and biotic stress

13- Chemistry of Nucleic Acids

2- Environmental Genetics

4- Crop Physiology

6- Microbial Genetics

8- Environmental Mutagens

10- Tissue and Organ culture

14- Gene Regulations.

## 11-Introduction in Biotechnology

### \*Research Experiences :

- 1- Breeding of plants.
- 2- Selection of resistant plant under abiotic stresses.
- 3- Statistical analysis for quantitative and qualitative characters.
- 4-Tissue culture and Meristems Preparation.
- 5- Initiation and maintenance of a suspension culture.
- 6- Embryogenic and non-embryogenic cultures.
- 7- Isolation and preparation of zygotic embryos from different immature stages.
- 8- Transformation in Vegetables and Crops.
- 9- Phylogenetic pedigree.
- 10- Restriction digests.
- 11- Isolation of Plasmid.
- 13- Detection of Transformation events.
- 14-Isolation of haploid and protoplast.
- 15- Protoplast Fusion.
- 16- Purification of Protein
- 18- Analysis of Isozymes.
- 19- Immunisation
- 20- Isolation of DNA
- 21-Gel electrophoresis.
- 22- Western, Southern and Northern blot
- 23- DNA-hybridization.
- 24- RAPD, RFLP, AFLP and SSR
- 25-PCR
- 26- RNA and DNA Electrophoresis
- 29-Tissue Print.
- 27-Ouchterlony and ELISA test.
- 28- Induced Mutations by chemical mutagenesis.
- 29-GUS Gene assay
- 30- Molecular analysis of amino acid.
- 31- Biochemical analysis.
- 32-Hybridization technique in wheat and Barley.
- 33- Anther, mature and immature embryo culture in Barley and Wheat.
- 34- Hypocotyls, cotyledon, shoot apex and curd explants in Brassica species.

### \* Activities

- a- Assistant in organizer the conferences and workshop .
- b- Help in writing the research proposal for some projects – design the project and work plane.
- c- Supervisor on 6 Project students.

**Specialized in:** Genetic, , Biotechnology, Genetic Engineering, and Breeding for abiotic stress in plants.

**Employment history:**

Temporary:

- Part time lecturer at Plymouth university – School of Biological science (September 2003 until November 2006) - UK.
- Part time demonstrator at Hannover university – Institute of Botany (September 2001 until May 2002) – Germany.
- Assistant research at Tissue Culture Unite, Department of plant Breeding, Desert Research Centre, Ministry of Agriculture, (August 1993 to August 1994) Egypt.

Permanent:

- Lecturer (Associate professor): Faculty of Agriculture, Suez Canal University, Egypt. (October 2006)
- Assistant Lecturer: Faculty of Agriculture, Suez Canal University, Egypt. (September 1999 to September 2006).
- Demonstrator: Genetic Division, Botany Department, Faculty of Agriculture, Suez Canal University, Egypt. (September 1995- July 1999).
- Assistant Research: at Ministry of Agriculture - International Rice Research Centre- Kafr El-Sheikh, Egypt. (December 1994-July 1995)

**Qualifications:**

- Bachelor degree (B.Sc): In Agriculture Science (Genetic and Genetic Engineering), Genetic Department, Faculty of Agriculture, Zagazig University, Egypt. (1989-1993). Grade: Very Good (77.8%)
- Master degree (M.Sc): In Agriculture Science, (Genetical studies on Salt Tolerance in Wheat (*Triticum aestivum L.*) Using embryo Culture Technique. Genetic Dep., Suez Canal University, Ismailia, Egypt. (1996 – 1999). Grade: Excellent
- Doctor of Philosophy (PhD): In Agriculture Biotechnology and Genetic Engineering, (Improving Abiotic Stress Resistance in Cauliflower (*Brassica oleracea var botrytis L.*) by Mutagenesis and Genetic Transformation. Biological Science Dep., School of Biological Science, University of Plymouth, United Kingdom ( September 2003 - August 2006).

**Awarded:**

- Scholarship from [Islamic Development Bank \(ISDB\)-KSA](#) to study (Mphil/PhD) in biotechnology and molecular genetic field: Improving Abiotic Stress Resistance in Cauliflower (*Brassica oleracea var botrytis L.*) by Mutagenesis and Genetic Transformation. (Plymouth University-UK)( September 2003-August 2006)
- Scholarship from [ICSC World Laboratory - Switzerland](#) to study Biotechnology and Molecular Genetic: ( Biochemical and Molecular Genetics studies on abiotic stress resistance in Barley (*Hordeum vulgare L.*). (Hannover University-Germany) (July 2001-June 2002).
- Scholarship from [Federal Republic Germany](#) , German Foundation for international Development to attend in International Advanced Professional Training in Biotechnology “ Micropropagation and Related Techniques for the Conservation and use of Plant Genetic Resources and the Improvement of Crops”: (Germany) (Aug 2000 – Des 2000).
- I had [certificate of appreciation](#) from Suez Canal University Education Development Centre for "Educational preparing and training program of improving staff member teaching skills" as a Training from February 13, 2004 to March 3, 2004 while I had this program with a grade (excellent) and I won the first position among all PhD trainers from different faculties and in various scientific fields

**List of Publications:**

- 1- Metalwly, T.f., Sadeek, S.E., Abdelkalik, A.F., El-rewiny, I.M and **Ehab, M.R. Metwali**. 2010. Genetic Behaviour of Some Rice (*Oryza sativa L.*) Genotypes under different Treatments of Nitrogen Levels. [American-Eurasian J. Agric. 7 Environ. Sci.](#) 8(1):27-34.
- 2- Abdelkalik, A.F., **Ehab, M.R. Metwali**, El-Adi, M., Abd El-Hadi, A.H. and El-Sahrnobi, D.E. 2010. Genotype-Environment Interactions for Seedling Vigor Traits in Rice (*Oryza sativa L.*) Genotypes Grown under Low and High Temperature Conditions. [American-Eurasian J. Agric. 7 Environ. Sci.](#) 8(1):27-34.
- 3- Manal. H. Eid, Bayoumi, T. Y. and **Ehab. M.R. Metwali** . 2009. Agronomical traits and biochemical genetics markers associated with salt tolerance in wheat (*Triticum aestivum L.*). [6<sup>th</sup> International Plant Breeding Conference , Suez Canal University, Ismailia, Egypt, 3-5/5-2009](#).page 609-623.

- 4- Haragy, M. S., **Ehab, M. R. Metwali**, Felali A. and Farouk A. A. 2009. The role of biotechnology in improving the crops production under drought conditions. *The International Water Conference, El-Jabal El-Gharbei University, Libya*, 15-17 November, 2009. Page 61-76.
- 5- Bayoumi, T. Y., Manal, H. E. and **Ehab, M.R. Metwali**. 2008. Application of Physiological and biochemical indices as a screening technique for drought tolerance in wheat genotypes. *African Journal of Biotechnology*. Vol. 7 (14), pp. 2341-2352.
- 6- Fuller, M.P., **Metwali, E.M.R.**, Eed, M.H. and Jellings, A.J. 2006. Evaluation of Abiotic Stress Resistance in Mutated Populations of Cauliflower (*Brassica oleracea var. botrytis*). *Plant Cell, Tissue and Organ Culture*. 86:239-248.
- 7- **Metwali, E.M.R.**, Fuller, M.P. and Jellings, A.J. 2006. Optimization of a Protocol of *Agrobacterium* mediated transformation of Cauliflower (*Brassica oleracea var. botrytis*) and confirmation of integration and expression of APX and SOD Stress Genes. *Bibliotheca Fragmenta Agronmica*. 11:173-174.
- 8- Greish, S.M., Abd-El-Raheem, A., Mohamed, F.H. and **Metwali, E.M.R.** 2000. Genetic Analysis of Some Growth Characters in Wheat (*Triticum aestivum L.*) under Salt Stress Using Embryo Culture Technique. *Zagazig Journal of Agriculture Research*. Vol. 27. No. (2):441-445.
- 9- **Metwali, E.M.R.**, Greish, S.M., and Abd-El Raheem A. 2000. Genetic Analysis of Peroxidase and Esterase Isozyme in Callus Induced from Mature Embryos of Wheat (*Triticum aestivum L.*) Grown under Different Level of Salinity. *Journal of Agriculture Science- Mansora University*. Vol. 25, No. (5):2627-2639.
- 10- **Metwali, E.M.R.** and Greish, S.M. 2000. Callus Ability and Heterosis for Callus Content of Sodium, Chloride, Potassium and Phosphorus under Saline and Non-Saline Condition in Wheat (*Triticum aestivum L.*). *Journal of Agriculture Science- Mansora University*. Vol. 25, No. (7):4109-4116

#### Oral presentation:

- 1- Metwali, E.M.R. 2009 . Agronomical traits and biochemical genetics markers associated with salt tolerance in wheat (*Triticum aestivum L.*). *6<sup>th</sup> International Plant Breeding Conference* ,Suez Canal University, Ismailia, Egypt, 3-5/5-2009

- 2- Metwali, E.M.R. 2006. Optimization of a protocol of *Agrobacterium* mediated transformation of Cauliflower (*Brassica oleracea* var. *botrytis* L.) and confirmation of integration and expression of APX and SOD stress genes. IX ESA congress, Warszawa, Poland. 4-7 September, 2006.
- 3- Metwali, E.M.R. 2005. The Evaluation of Stress Resistance in Mutant Lines of Cauliflower. American Society of Agronomy, Crop Science Society of America and Soil Science Society of America. USA. Nov.6-10, 2005.
- 4- Metwali, E.M.R. 2005. In-Vitro and In-Vivo Screening of Cauliflower (*Brassica oleracea* var. *botrytis* L.) Lines for Salinity, Hydroxyproline and Frost Resistance. Plymouth University Symposium.UK.
- 5- Metwali, E.M.R. 2004. Genetic Transformation in Cauliflower. Plymouth University. UK.

#### **Poster Presentation:**

- 1- **Metwali, E.M.R.**, Haragy M. S., Felali A. and Farouk A. A. 2009. The role of biotechnology in improving the crops production under drought conditions. The International Water Conference, El-Jabal El-Gharbei University, Libya, 15-17 November, 2009.
- 2- **Metwali, E.M.R.**, Fuller M.P. and Jellings A.J. 2006. Optimization of a protocol for *Agrobacterium* mediated transformation of Cauliflower (*Brassica oleracea* var. *botrytis* L.) and confirmation of integration and expression of APX and SOD stress genes. First Mediterranean Congress on Biotechnology (MCB1), Tunisia. 25 – 29<sup>th</sup>, March 2006.
- 3- **Metwali, E.M.R.**, Fuller M.P. and Jellings A.J. 2006. *In-Vitro* and *In-Vivo* Screening of Cauliflower (*Brassica oleracea* var. *botrytis* L.) Lines for Salinity, Hydroxyproline and Frost Resistance. 3<sup>rd</sup> UK Cereal Genetics & Genomics Workshop & Biotechnology for Arable Crop Transformation (BRAC) Workshop JIC, Norwich 5<sup>th</sup>, 6<sup>th</sup> & 7<sup>th</sup> April 2006.
- 4- **Metwali, E.M.R.**, Fuller M.P. and Jellings A.J. 2005. *Agrobacterium* Mediated Transformation and Integration of Stress Genes into Cauliflower (*Brassica oleracea* var. *botrytis* L.). Genetic Modification 10 years Conference, Association of Applied Biologists, Wellesbourne, 14 – 16, December 2005.

#### **Training programme:**

- 1- Molecular Aspects of Salt and Drought Tolerance in Crops (Plants). ICGEB and Genetic Engineering Research Centre, Cairo University, Egypt. 1 – 8 September, 2007
- 2- Genetic Engineering: Institute of Graduate Studies and Research, Alexandria University, Egypt. 15-19 April, 2007.
- 3- Protein Biosynthesis: Institute of Graduate Studies and Research, Alexandria University, Egypt. 25-29 March, 2007.
- 4- Gas course. Plymouth University, UK. 2005.
- 5- Safety handling of cryogenic liquids. Plymouth University, UK. 2005
- 6- Detection of Genetic Modification in Food and feed. Suez Canal University, Egypt. 8-10 January 2001.
- 7- International Advanced Professional Training programme in Biotechnology “Micropropagation and Related Techniques for the Conservation and use of Plant Genetic Resources and the Improvement of Crops”: (Germany) (Aug. 2000 – Dec. 2000).
- 8- Breeding of Rice. International Agriculture Research Centre, Egypt. 4-16 February 1995.
- 9- Biotechnology and Molecular Genetics. El-Sadat Centre for Genetic Engineering, Genetic Department, Menofya University, Egypt. 14-21 July 1993.

**Conferences attended:**

- 1- Water Conference , El-Jabal El-Garbei University, Libya, 15-17 December, 2009.
- 2- 6<sup>th</sup> International Plant Breeding Conference , Suez Canal University, Egypt, 2-5 May, 2009.
- 3- First Conference Around Olive Tree, Libya. 27-29 November, 2007.
- 4- European Society of Agronomy. IX ESA congress, Warszawa, Poland. 4-7 September, 2006.
- 5- First Mediterranean Congress on Biotechnology. Tunisia. 25-29<sup>th</sup> March, 2006.
- 6- ASA-CSSA-SSSA Annual Meetings .Salt Lake City, Utah, USA. November. 6–10<sup>th</sup>, 2005.
- 7- Genetic Modification 10 Years. Cambridge, UK. December 14 – 16<sup>th</sup>, 2005.
- 8- GM technology in horticulture-where do we stand? Warwick HRI, Wellesbourne, Warwick, UK. 18<sup>th</sup> November 2004.
- 9- Genetic conference. Alexandria University, Egypt. 1999.
- 10- Genetic Conference. Menofya University, Egypt. 1993.

**Other Professional Activities:**1- Assistant Research in local project :

Title of project: The Effect of Drought Treatment on the Quality Flour in Wheat.

Funding by: Ministry of Agriculture-Egypt co-operation with FAO.

Type of work: Collect Data –Chemical and Biochemical Analysis – Statistical analysis for the data.

2- Assistant Leader in Local project:

Title of project: Using tissue culture technique for selection of mutant lines under *in-vitro* condition and test the F1 and F2 in the field under salinity treatment.

Funding by: Ministry of Agriculture-Egypt

Type of work: Help in writing the project proposal – design the project and work plane – set up the experiments- collect data- measurement the parameters- statistical analysis.

3- Research Assistant in Local Project:

Title of Project: Evaluate for Mutant Lines of Wheat under different Condition and Location in Egypt.

Funding by: Ministry of agriculture

- 4- Assisted in Fast Tissue Culture Workshop, Plymouth University, UK.
- 5- Helped Supervise 4 MSc project students in allied projects. Plymouth University, UK.
- 6- Helped demonstrated Crop Biotechnology practical to MSc and undergraduate students.
- 7- Developed a working understanding of the university and UK ordering system for laboratory consumables, UK.
- 8- Attended the MSc Sustainable Crop Production Field Trip to Brittany- France (7 days) and East Anglia-UK (7 days).
- 9- Arranged and Attended in many several visits to farmers, private agriculture company and Royal Agricultural Show in UK (2004).

**Skill Development courses attended:**Courses hold in UK ( between 2005-2006)

- 1- Learning, Teaching and Assessment: Theory and Practice
- 2- Preparing to Teach (GTA course).
- 3- Effective Poster Presentation.
- 4- An Introduction to qualitative Research.
- 5- Economic and social data service Workshop.



- 6- Essential tips for Using Microsoft Word.
- 7- Working With Long Document.
- 8- Presenting your research using Microsoft PowerPoint.
- 9- Improving / developing your research design.
- 10- Intermediate PowerPoint.
- 11- Preparing for the viva
- 12- Surviving job interviews and assessment centres
- 13- Negotiation skills. 14- Rapid reading
- 15- Problem solving techniques 16- Time management
- 17- Visio 2002 – Chart and Drawings
- 18- Presentation Skills-Oral Presentation
- 19- Creating Web Pages Using ms front Page
- 20- Effecting CV Writing
- 21- Designing a Database using ms Access
- 22- Career Planning – How your Personality types can impact on career decisions.

#### *Courses Hold in Egypt*

- 1- The Modern Methods in Teaching. Faculty and Leadership Development Project (FLDP), University Education Development Centre (UEDC), Suez Canal University, Egypt. 26-29/6/2007.
- 2- Experimental Methodology, Methods in Behavioral Research, experimental Designs, Hypotheses Testing and Statistical Principals in Experimental Design. University Education Development Centre, Suez Canal University, Egypt. 5-8/11/2006.
- 3- System Approach, System Thinking, Global Thinking, Creative Thinking, Strategies for Managing the Thinking Process and Creative Problem Solving. Faculty and Leadership Development

- Project (FLDP), University Education Development Centre (UEDC), Suez Canal University, Egypt. 5-8/11/2006.
- 4- Using the Technology in Teaching and Research. FLDP and UEDC, Suez Canal University, Egypt. 4-6/2/2007
  - 5- Micro Teaching. FLDP and UEDC, Suez Canal University, Egypt. 7-12/2/2007.
  - 6- The Effective Role for Staff Members in Developing the University. FLDP and UEDC, Suez Canal University, Egypt. 30/1-3/2/2007

**Membership:**

- 1- BRACT (Biotechnology Recourses for Arable Crop Transformation) UK
- 2- AAB (Association of Applied Biologists). UK.
- 3- ASA-CSSA-SSSA (American Society of Agronomy, Crop Science Society of America, Soil Science Society of America). USA.
- 4- HRI (Horticulture Research International Association). UK.
- 5-ZEL (Food and Agriculture Development Centre). Germany.
- 6- ICBA (International Centre for Biosaline Agriculture). United Arab Emirates.
- 7- Genetic and Biotechnology Organization. Egypt
- 8- Plant Stress Group. Pakistan.
- 9- Science Development Network. Saudi Arabia.