

## Dr. Hamdy Abd El-Naby Zaki Hussein

Assistant professor of Pomology, Horticultural expert and Research scientist  
Horticulture Department, Faculty of Agriculture, Fayoum University, Egypt.

**E-mail:** [haz00@fayoum.edu.eg](mailto:haz00@fayoum.edu.eg)

[hamdyzaky2010@gmail.com](mailto:hamdyzaky2010@gmail.com)

**Web site:** <http://www.fayoum.edu.eg/Agriculture/Horticulture/DrHamdy.aspx>



### Personal profile:

**Date of birth:** 16/07/1983

**Nationality:** Egyptian

**Mobile:** 002 01002140443 - 00201111015162

**Current work:** Assistant professor of Horticultural sciences, "Pomology", manager of the fruit research farm Faculty of Agriculture, Fayoum University, Fayoum, Egypt (2015- till now).

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### Education:

1. Ph.D. degree in Horticulture, Pomology, "fruit trees physiology", Fayoum University, Egypt, 2015.
2. M.Sc. degree in Horticulture, Pomology, "fruit trees physiology", Fayoum University, Egypt, 2010.
3. B.Sc. in Agricultural sciences, Horticulture, Cairo University, Egypt, 2004.

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### Work Experience

A. **Assistant Professor of horticultural sciences "Pomology" at Fayoum University**  
July 2015 - Present

I work as assistant professor of horticultural sciences, Pomology at Horticulture Department, Faculty of Agriculture, Fayoum University, Egypt.

**I am responsible for achieving the following tasks:**

1. **Teaching undergraduate and postgraduate courses** such as advance techniques of date palm production principles of horticultural production, fruit trees physiology, Biochemical changes in fruits, and postharvest quality management of fruits, preparation and handling of horticultural commodities, Preparing and storing fruits of horticultural crops, fruit production in arid zones, viticulture, citrus, grapes, mangoes, orchard management, postharvest biology of fruits, problems of pome fruit production in warm climates, date palm "Advanced" ecophysiology of fruit trees "Advanced", developed stress physiology and research and discussion.
2. **Research activities:** Designing, supervising and executing the field experiments for my postdoctoral work and postgraduate students, writing thesis and research papers.

Since my graduation till now, I am a research team work member containing many researchers in the field of production of fruit crops.

3. **Social service consultancy and environment development:** I am responsible for organizing events to transfer the agricultural technology to the local farmers through the extension campaigns I participate in the events organized for increasing the profitability of mango, citrus, date palm, olive, figs, stone fruits and other horticultural crops grown in our area.
4. **Supervising the research laboratory at horticulture department and managing the fruit research farm.**
5. **Extra curricula activities.**

**B. Fruit production expert for many private sector farms (2010 - present)**

I worked for many private farms sector producing mangoes, grapes, citrus, pomegranates, olives and date palm

**Duties:**

1. Organizing the production plans.
2. Planning the expansion activities.
3. Supervising the production and agricultural practices.

**5. Graduate Research and Teaching Assistant at Horticulture Department, Faculty of Agriculture, Fayoum University (January 2005 - March 2015).**

**Duties:**

1. Teaching the undergraduate courses related to horticulture in general.
2. Research serving my Ph.D. and M.Sc. studies.
3. Thesis writing and publication.

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**Familiarity with plant physiology:**

As a practical horticulturist, I studied in depth many courses related to different topics of plant physiology. Currently, as assistant professor of horticulture, I see that I have a developed understanding of plant physiology on both theoretical and practical scales. I am responsible for teaching many courses to undergraduates and postgraduates. I teach physiological topics related to:

- a) Cellular and molecular aspects of fruit tree physiology "cell cycle regulation in plants, Biosynthesis of photosynthetic pigments, bioenergetic aspects of photosynthetic gas exchange and respiratory processes, cell membrane functioning, plant cell water relations, biochemistry of plant cell".
- b) Plant growth and development "germination, vegetative growth flowering, fruit set, fruit development, ripening, biochemical changes in fruits, senescence and abscission, dormancy".
- c) Plant soil water relations: water absorption, translocation and transpiration, stomatal conductance, water potential, intrinsic water use efficiency, water stress indices.
- d) Root physiology: root growth, adventitious root formation, root growth measurements, soil and root relations, root architecture, root/shoot signals, root/ soil organisms

interactions, rootstock and scion relationship, water and nutrient uptake and translocation, osmosis.

e) Physiology of rootstocks: Effects Scion–rootstock interaction on the physiology and fruit quality, physiological and biochemical characterization of fruit rootstocks.

f) Crop physiology and physiological aspects of plant production processes (mineral nutrient transport in plants, nitrogen metabolism and crop productivity, carbon export from source leaves, production-related assimilate transport and partitioning, phloem transport of solutes in crop plants, carbohydrate synthesis and crop metabolism.

g) Foliar plant nutrition.

h) Plants responses to environmental factors and climactic changes, physiological responses under stressful (salt, drought, and other environmental stresses) conditions.

i) Role of physiology in improving crop adaptation to abiotic stresses, adaptive components of salt tolerance, physiological mechanisms of nitrogen absorption and assimilation in plants under stressful conditions, induction of proteins in response to biotic and abiotic stresses, regulation of gene expression during abiotic stresses and the role of the abscisic acid.

j) Oxidative stress physiology.

k) Plant growth hormones: growth promoters and inhibitors, application of plant growth regulators in fruit production.

l) Physiological relationships between lower and higher plants.

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## **Technical key skills as fruit production expert**

1. Planning the production schedule for the common fruit tree species.
2. Variety and rootstock selection according to available soil conditions and metrological data.
3. Establishment of high density plantations of fruit trees.
4. Setting irrigation and fertilization systems based on actual plant needs.
5. Training and pruning of recently planted and fruiting orchards.
6. Managing orchards under adverse conditions such as salinity, drought, calcium carbonate and heat stress conditions.
7. Mastering the application of good agricultural practices and safe farming procedures.
8. Suggesting solutions for increasing yields and improving fruit quality.
9. Mastering different propagation techniques.
10. Diagnosis of different diseases and pests and other encountered problems.
11. Conducting feasibility studies for horticultural producers.
12. Training local farmers, pomologists and experts through field demonstration and hands on activities.

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## **Working with regional and international development organizations:**

### **1- Trainer at MUCIA project, USAID (2005)**

#### **Duties:**

- Building teaching capacities of Agricultural secondary education teachers in Fayoum.

## **2- Horticultural scientific consultant at FAO regional office, Egypt**

I am working as a consultant for one of the FAO projects aiming at minimizing post-harvest losses in vegetables and fruits in Egypt. I am a major participant in the Food Loss and Waste Systematic Review under the project GCP/RNE/004/ITA "Food Loss and Waste Reduction and Value Chain Development for Food Security in Egypt and Tunisia".

### **Duties:**

- Review the research papers related to postharvest losses in horticultural crops.
- Screening the research efforts in the field of preharvest treatment to elongate shelf life.
- Analyze and summarize the bibliography.
- Final report edition.

## **3. Fruit production consultant, North South Consultants Exchange (NSCE), Egypt from April, 2019 to date.**

as consultant in the project entitled: Producers Organizations Supporting Farmers and Rural Areas - North Africa (OPSAT) Funded by IFAD/ AFD/FERT.

### **Duties:**

- a) Building the technical capacities of pear and olive framers in targeted villages in upper Egypt.,
- b) Training assessment needs specially for fruit trees small farmers.
- c) Developing a farm field School training of trainers curriculum.
- d) Preparation of olive production technical guide.
- e) Field visits reporting

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## **Trainings, Seminars, Conferences and Research & Scientific Activities:**

- **The 7<sup>th</sup> Arabic conference for horticultural plants** organized by horticulture department, faculty of agriculture, Suez Canal University, Egypt. 24 - 26 Mar. 2013.
- **The 3<sup>rd</sup> , 4<sup>th</sup> , 5<sup>th</sup> , 6<sup>th</sup> and 7<sup>th</sup> conference for Sustainable Agricultural development** organized by faculty of agriculture, Fayoum University, Fayoum, Egypt. Nov. 12 - 14, 2007, 20 - 22 October 2008, 21 - 23 Dec. 2009 , 27-29 Dec. 2010 and 6-8 Mar 2017.
- **The 5<sup>th</sup> Scientific conference of Agricultural Science** organized by faculty of agriculture, Assuit University, Egypt. 16-17 October 2010.
- **Utilization of MS office package in data base, calculations and scientific reports preparation**, by the central lab of plant and soil analysis, 11-25/11/2009.
- **Tissue culture training course** organized by Tissue Culture and Genetic Engineering Centre, faculty of agriculture, Assuit University, Assuit, Egypt, Dec. 8 - 14, 2007.
- **"Fruit tree production"** Organized by AERI\* Institutional Linkage Project - MUCIA \*\*, Cairo - Egypt, 2006.

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\* AERI is belonging to the Agricultural Exports and Rural Income project funded by the United States Agency for International Development (USAID) in Egypt.

\*\* MUCIA is belonging to the Midwest Universities Consortium for International Activities, Inc. which is a USAID partner in Egypt.

- ***Cantaloupe and Watermelon Production for Exportation***” Workshop organized by MUCIA, Luxor, Egypt, November 2005 (Participant).
- **Utilization of micro technique in horticultural plants** Workshop organized by Cairo university, April, 2005
- **Training course on integrated pest management** organized by Ministry of Agriculture Fyoom, Egypt, July 2003.
- **Training programs on fruit and vegetables production under new land conditions** organized by agricultural co-operation, Ain Shams university, Egypt, July 2003 and July 2004.
- **“Preparing Competitive Research Projects”** Training Program Organized by Faculty and Leadership Development Project (FLDP), Fayoum University, Fayoum, Des. 23rd - 25th 2008.
- **“Using Technology in Education”** Training Program Organized by Faculty and Leadership Development Project (FLDP), Fayoum University, Fayoum, 30 Dec. 2008 -1 Jan 2009.
- **“Students’ Evaluation”** Training Program Organized by Faculty and Leadership Development Project (FLDP), Fayoum University, Fayoum, Jan. 23rd -25th 2010.
- **"Quality standards in teaching"** Organized by Faculty and Leadership Development Project (FLDP), Fayoum University, Fayoum, Mar. 23<sup>rd</sup> -25<sup>th</sup> 2010.
- **“University’s Code of Ethics”** Training Program Organized by Faculty and Leadership Development Project (FLDP), Fayoum University, Fayoum, Jan. 26<sup>th</sup> -28<sup>th</sup> 2010.
- **“International Publishing of Research”** Training Program Organized by Faculty and Leadership Development Project (FLDP), Fayoum University, Fayoum, Mar. 16<sup>th</sup> -18<sup>th</sup> 2010.
- **“Time and Meetings Management”** Training Program Organized by Faculty and Leadership Development Project (FLDP), Fayoum University, Fayoum, Apr. 15<sup>th</sup> -17<sup>th</sup> 2014.
- **“Research Team Management”** Training Program Organized by Faculty and Leadership Development Project (FLDP), Fayoum University, Fayoum, Jun. 7<sup>th</sup> -9<sup>th</sup> 2014.
- **"Active Presentation Skills”** Training Program" Organized by Faculty and Leadership Development Project (FLDP), Fayoum University, Fayoum, Jun. 10<sup>th</sup> -12<sup>th</sup> 2014.
- **“The Credit Hour System Book”** Training Program" Organized by Faculty and Leadership Development Project (FLDP), Fayoum University, Fayoum, Jul. 5<sup>th</sup> -7<sup>th</sup> 2014.
- **“Quality Trends in Teaching”** Training Program" Organized by Faculty and Leadership Development Project (FLDP), Fayoum University, Fayoum, Aug. 12<sup>th</sup> -14<sup>th</sup>, 2014.
- **“Financial and Legal Affairs of Universities”** Training Program" Organized by Faculty and Leadership Development Project (FLDP), Fayoum University, Fayoum, Sep. 13<sup>th</sup> - 15<sup>th</sup>, 2014.
- **“Description of course”** Training Program" Organized by Faculty and Leadership Development Project (FLDP), Fayoum University, Fayoum, Dec. 27<sup>th</sup> -29<sup>th</sup>, 2014.
- **“Programs and courses descriptions”** Training Program" Organized by National Authority For Quality Assurance And Accreditation Education Fayoum, Nov. 22<sup>th</sup>-24<sup>th</sup>, 2015.

## **Social skills and competences**

**Team work:** since my graduation till now, I am a research team work member containing many researchers in the field of pomology.

**Teaching skills:** I am responsible for teaching the practical and theoretical lessons of many undergraduate and postgraduate courses and I like this very much.

**Managerial skills:** I have been appointed as the manager of the experimental farm of my university.

**Communication skills:** I have held a lot of seminars in my faculty as well as I attended a lot of extra curricular activities.

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## **Organisational skills and competences**

- I am a team work member in the organization committee of the annual conference of sustainable agriculture conference in our faculty.
  - I organized a series of seminars related to different topics in Impact of climate change on the growth and production of mango cultivars.
  - I was a member of the extension campaigns organized by my department.
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## **Publications:**

- **Ph.D.** thesis: "Effect of temperature change on growth and productivity of some mango cultivars grown under Fayoum governorate conditions". April 2015.
  - **M.Sc.** thesis: "Evaluation of some olive cultivars grown under Fayoum new land condition". March, 2010.
  - Morphological Characters, Flowering and Fruit Set of Thirteen Olive Cultivars Grown under Fayoum New Land Conditions. The 5<sup>th</sup> scientific conference for agriculture sciences, Fac. Agric. Assiut Univ. Oct. 16-17, 2010, 94 - 115.
  - Fruit Growth and Dropping, alternate bearing, Productivity and Leaf Chemical Composition of Thirteen Olive Cultivars Grown under Fayoum New Land Conditions. The 5<sup>th</sup> scientific conference for agriculture sciences, Fac. Agric. Assiut Univ. Oct. 16-17, 2010, 72 - 93.
  - A Study on the evaluation of some grape vine cultivars (*Vites vinifera*) grown in new reclaimed land. Fayoum Journal of Agricultural Research and Development March 2019.
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## **Under publication**

1. "Effect of climate change on growth and flowering of some mango cultivars grown under Fayoum governorate conditions.
2. Promising mango land races selection in Fayoum area.
3. Natural extracts as bio stimulants for grapes production.
4. Trails for dragon fruit adaptation to open field conditions of Fayoum district.
5. Selection of salinity tolerance strains in Guava.

6. The best fertilizer formula for Arabqueen olive production under calcareous soil conditions.
  7. Triacantanol enhance fruit quality and storability of Barhi date palm fruits.
  8. Kaolin and potassium phosphite as heat stress protectants in Fremont mandarin production and Wonderful pomegranates.
  9. "Effect of climate change on productivity and fruit quality of some mango cultivars grown under Fayoum governorate conditions.
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## **Languages**

English  
Arabic

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## **Computer skills and competences**

- Very Good command of Microsoft office package: MS Windows, MS Word, MS Excel, MS Power Point, Internet and Basic concepts of IT.
  - Aware of statistical analysis programs such as Genstat, SPSS, Minitab and MSTATc.
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## **Current research vision**

- Determination of optimum maturity index of fruit crops.
  - Temperature effects on the cropping, development and quality of some fruit crops
  - Physiological studies on flowering, Fruit set, fruit drop, fruit growth and yield of fruit crops.
  - Fruit crops production for exportation.
  - Post-harvest Management for Fresh Fruits
  - Impact of climate change on the growth and production of fruit crops.
  - Relationship between the climate change and production of fruit crops.
  - Selection of some date palm seedlings and evaluation of some imported mango cultivars.
  - Determination of heat units (G.D.D.) of some fruit crops.
  - Causes and dealing with biennial bearing in some fruit crops.
  - Influence of temperature on the growth and development of olive trees
  - Interactions between the vegetative growth, flowering and yield of fruit trees.
  - Flowering, pollination and fruiting of some olive cultivars at high temperature.
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