

## Dr. Zienab Fawzy Reiad Ahmed



### Associate Professor of Horticulture

United Arab Emirates University (UAEU)

Integrative Agriculture Department

College of Agriculture and Veterinary Medicine

---

### My Beginning: Where Curiosity Took Root

My research journey began with a simple but powerful question: *How can we help plants thrive under stress and still nourish people sustainably?*

As a young student of horticulture at Assiut University, I was fascinated by fruit physiology—how a living system transitions from growth to ripening, from potential to nourishment. That curiosity deepened during my PhD at University of Wisconsin–Madison, where I studied horticultural physiology and biochemistry.

There, I investigated how a natural lipid—lysophosphatidylethanolamine—could regulate ripening and delay senescence in banana fruit. I was exploring the invisible conversations within plant cells, discovering how small molecules could make a profound difference in postharvest quality. That was when I realized: research is not just about experiments—it is about understanding life at its most intricate level.

---

### Returning Home: Science with Purpose

After years abroad, I returned to the Middle East with a clear vision: to apply high-level scientific research to the realities of arid agriculture. South Valley University, Egypt 2014 to United Arab Emirates University 2019, my work evolved to focus on:

- Sustainable horticultural crop production systems
- Organic and zero-runoff nutrient solutions of hydroponic
- Postharvest technologies to reduce fruit loss and long-term storage
- Nanotechnology for crop stress resilience
- Smart pollination technologies, including drone-assisted date palm pollination
- Genome editing perspectives for climate resilience

In a country where food security is a strategic priority, research is not theoretical—it is national responsibility.

---

## Challenges Along the Way

### Academic and Institutional Challenges

Building a research program in a competitive international environment required resilience. Securing funding, publishing in top-ranked journals, and building collaborations across continents meant constant learning and adaptation.

When I joined UAEU in 2019, I built my research portfolio from the ground up. Since then, I have secured multiple internal and external grants, led interdisciplinary projects, and published over 65 peer-reviewed articles in Q1 and top-ranked international journals in the field.

But numbers do not tell the full story. Behind every grant was persistence. Behind every publication was revision after revision.

---

## Challenges as a Woman in Research

As a woman in agricultural sciences—a field traditionally male-dominated in many regions—I navigated subtle and overt expectations:

- The assumption that leadership roles are better suited to men
- Balancing motherhood, family responsibilities, and international academic commitments
- Proving competence repeatedly in technical and engineering-related discussions
- Traveling globally for conferences while managing cultural and personal responsibilities
- Collaborating internationally to enhance the diversity of my research program

In the field, greenhouses, laboratories, and conference halls, I sometimes found myself the one of the rare women presenting technical innovations.

But I learned something powerful: **excellence speaks. Consistency builds credibility. Impact earns respect.**

---

## Overcoming and Building

I did not overcome challenges alone. I built systems:

- I established fruit tree orchard, nurseries, and greenhouse facilities at UAEU and South Valley University.
- I lead research group, and supervised dozens of undergraduate, MSc, and PhD students.
- I created collaborative bridges with institutions in the USA, Chile, Cyprus, Germany, Japan, Malaysia, Australia, China, India, Pakistan, Arabic countries, and beyond.

- I embraced emerging technologies—nanoparticles, CRISPR, smart agriculture—without fear of stepping into new territories.

Resilience for me meant staying scientifically rigorous while remaining deeply human.

---

### **Support Systems**

Behind every successful woman researcher is a network of belief:

- My family, who accepted long nights of writing and travel across continents.
- My PhD mentor, who treated me as a scientist first.
- My students, who challenge me to stay innovative.
- My colleagues at UAEU who believe in sustainable agriculture for the region.

To them, I owe gratitude beyond words.

---

### **“Give to Gain” — What I Gave, What I Gained**

**What I gave to research:**

- Time that could not be measured
- Intellectual courage to explore interdisciplinary science
- Leadership in building programs and laboratories
- Mentorship to young scientists

**What I gained:**

- The joy of seeing students graduate and publish
- The honor of being an associate editor and editorial board member
- The privilege of shaping sustainable food systems in arid lands
- A voice in global scientific conversations

Research gave me not just a career—but identity, confidence, and global belonging.

---

### **Advice to Future Women Researchers**

To every young woman considering research:

1. Do not wait for permission to lead.
2. Publish with courage, even when reviews are harsh.
3. Learn statistics, technology, and communication equally well.
4. Build collaborations internationally.

5. Remember: your perspective is not a limitation—it is an asset.

Science needs diversity not as a slogan, but as a necessity.

---

### A Message to the World

Women in research are not exceptions. We are contributors, innovators, mentors, and leaders.

In agriculture especially—where food security, sustainability, and climate resilience define the future—women scientists bring systems thinking, long-term vision, and community-centered approaches.

Society must understand that supporting women in research is not charity. It is strategic investment.

When a woman leads a laboratory, she is not only publishing papers. She is shaping ecosystems, students, institutions, and future generations.

---

### My Continuing Mission

My mission remains clear:

To advance sustainable horticulture.

To reduce postharvest losses.

To integrate smart technologies into arid agriculture.

To mentor the next generation of scientists—especially young women.

Because research is not only about discovery.

It is about responsibility.

It is about resilience.

It is about impact.

And my journey is still unfolding.