


FAISAL IBRAHIM ZEINELDIN, Ph.D.

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	Name	Dr. Faisal Ibrahim Zeineldin
	Nationality	Canadian
	Position	Faculty member
	Qualification	Ph.D., Colorado State University ,USA
	Work	Water Studies Center, King Faisal university
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		Assis. Professor of Irrigation, Soil and Drainage Engineering

EDUCATION BACKGROUND

- 1992-1998 **Ph.D.** May 1998. Department of Agricultural Engineering, Colorado State University, USA
1988-1992 **M.S.** December 1992. Department of Agricultural Engineering, Colorado State University, USA
1979-1985 **B.Sc.** December 1985. Agricultural Sciences, University of Gezira, Sudan

RESEARCH EXPERIENCE

2003-Now: *Assis. Professor of Irrigation, Soil and Drainage Engineering:* Water Studies Center, King Faisal University, Al-Ahsa, KSA. Leading research program of irrigation, soil and drainage engineering, related to agricultural environment of the KSA. Focusing on issues of micro-irrigation systems, water application uniformity, water use efficiency, and improve hydraulic properties of sandy soil with natural soil conditioners. Also interested in applying **IoT** and smart technology in irrigation scheduling and water management.

2001-2003 *Postdoctoral researcher.* Department of Renewable Resources, University of Alberta, Edmonton, AB, Canada. Participated in modeling movement of N and P with the runoff from site specific of watersheds to water sensitive bodies

1992-1998 *Doctoral student.* Department of Agricultural Engineering, Colorado State University, Fort Collins, CO, USA. Ph.D. dissertation of Soil and water chemistry effects on *surge flow irrigation*. Prof. Terence H. Podmore as advisor and Prof. David B. McWhorter as co-advisor

1988-1992 *Master student.* Department of Agricultural Engineering, Colorado State University, Fort Collins, CO. USA. MSc dissertation “Estimating effective rainfall for irrigated crops”. Prof. Terence H. Podmore and Prof. Harold R. Duke as co-advisor

EMPLOYMENT EXPERIENCE

- 2003- Now Acquired research skills and experience in the issues of adapting use of modern micro-irrigation systems on sandy soils, and hydroponic systems in production of green fodder and vegetable. Acquainted with the use of drainage lysimeters and theoretical models in determining crop water requirements. Familiar with use of automated technology in irrigation scheduling (Enviro-Scan, electric tensiometers and smart timers) for efficient water use and water conservation,
- 2001-2002 Via my work as post-doctoral researcher at University of Alberta, Alberta, Canada, gained research abilities in agricultural water solving problems and in soil reclamation and water conservation issues. In addition, I have attained experience in ARC/VIEW and GIS based hydrological applications models (TOP-Model and SWAT). Beside I have assisted in graduate and undergraduate research projects.
- 1993-1998 I worked with the USDA-ARS, Water Management Research Unit, Fort Collins, Colorado in laboratory and field. I participated in running precision farming experiments on research and commercial farms using GPS maps for soil sampling. Get acquainted with use of SAS program for statistical data analysis.
- 1987-1988 *Teaching assistant*, Agricultural Engineering Department, University of Gezira, Sudan. I have taught laboratory classes of undergraduates and graded exams. I organized and participated in tenants' summer extension workshops.
- 1986-1987 *Field Inspector*, Gezira Irrigated Crop Project. Monitored and managed operation of canal irrigation water system to meet water requirement for arid regional crops. Provided on-farm advisory and enhanced tenants to improve water use efficiencies, adopt new technology of agricultural practices to increase their crop productivity.
- 1985 -1986 *Teaching Assistant*. Agricultural Engineering Department, University of Gezira, Sudan. Coordinated and instructed machinery shop classes and graded undergraduate assignments.

SPECIAL SKILLS

I have excellent computer skills in text, data and graphics (Microsoft office /Word/ Excel/Power Point and Fortran Programming Language). Familiar in using ARC/VIEW, SAS, USGS hydrological models and FAO- Crop WAT model. Expert in **Bentley Water-GEMS** an application for water pipes construction and distribution

MEMBERSHIP IN SCIENTIFIC SOCIETIES

- American Society of Agricultural Engineers (ASAE)
- Society of Crop Protection, University of Gezira

PROFESSIONAL MEETINGS and CONFERENCES:

- *Attended and presented a paper at annual meeting of ASAE, Minneapolis, MI, USA. "Soil and Water Chemistry Effects on Surge Irrigation" August 1997*
- *Attended annual meeting of ASAE, Orlando, FL, USA. August 1998*
- *Attended annual meeting of ASAE, Ottawa, ON, Canada. August 2004*
- *Attended and presented a paper annual meeting of CSBE/SCGAB, Edmonton, AB, Canada "Polymer effects on available water capacity and percolation of sandy soils, Saudi Arabia". July, 2006*
- *Attended and presented paper at an International Conference on Chemistry and Chemical Engineering (ICCCE) August 1 - 3, 2010, Kyoto International Conference Center, Kyoto, Japan*
- *Attended and presented paper at conference World Academy of Science, Engineering and Technology "Reused water and hardpan impacts on alfalfa water demand and use efficiency, Saudi Arabia" Berlin 2012.*
- *Attended the 5th International Conference on Water resources & Arid Environments (ICWRAE 45), King Saud University in Riyadh, 7-9 January 2013*
- *Attended and presented a paper at European Conference on Agricultural Engineering 8-12/7-2018 Wageningen, Netherland*

PUBLICATIONS, PROCEEDINGS of RESEARCH and MANUSCRIPTS

- Yousef A. and F. Zeineldin. 2007. Improving conveyance and distribution efficiency through conversion of an open channel lateral canal to low pressure pipeline at Al-Hassa irrigation project, Saudi Arabia. *The Arabian Journal for Science and Engineering, Volume 32, Number 1c. Page 77-86 (ISI)*
- Zeineldin, F., Y. Sheng and Li. 2001. Runoff Prediction of Haynes Creek watershed M1 site using SWAT and TOP models. *38th annual Alberta soil science workshop proceedings, Lethbridge. Alberta*
- Zeineldin, F., Y. Aldakheel. 2004. Reduction of Agricultural Water losses by combining Effects of soil layering and Pre-hydrated Polymer. *Second International conference on water resources and arid environment. Riyadh, KSA.*
- Zeineldin, F. I. and Yousif J. Aldakheel. 2010. Evaluation contribution of ground shallow water table to irrigation of date palm trees under irrigation reduction in Saudi Arabia. *International Conference on Chemistry and Chemical Engineering (ICCCE 2010). Page 342-345*
- Zeineldin, F. I. and K. M. Al-Barrak. 2012. Reused water and hardpan impacts on alfalfa water demand and use efficiency, Saudi Arabia. *World Academy of Science, Engineering and Technology, issue 69. Page 1009-1014*
- Zeineldin, F. I., Khalid Biro, M.R. Al-Hajhoj, and I. 2018. Impacts of Artificial and Natural soil Conditioners on Water Holding Capacity and Hydraulic Conductivity of Sandy soils. *Proceedings of the European Conference on Agricultural Engineering: 560-567. <https://research.wur.nl/en/publications/proceedings-of-the-european-conference-on-agricultural-engineering>.*

- Khalid Biro, Faisal Zeineldin and Mohammed Refdan Al-Hajhoj. (2018). Land Use Changes in Al-Ahsa Oasis, Saudi Arabia: Towards A Sustainable Management for Natural Resources Using Remote Sensing and Geographic Information System (GIS). *Proceeding of International Workshop on Combating Desertification, Riyadh, Saudi Arabia*.
- Khalid Biro, Faisal Zeineldin, Mohammed Refdan Al-Hajhoj. 2019. Satellite-Based Water Status Assessment for Date Palm in Al-Hassa Oasis, Saudi Arabia. *International Journal of Water Resources and Arid Environments*, 8(1): 61-69.
- Khalid Biro, Zeineldin, F. I., Al-Hajhoj, M. R. and Dinar, H. M. 2020. Estimating irrigation water use for date palm using remote sensing over an oasis in the arid region. *The Iraqi Journal of Agricultural sciences*. Volume 51, issue (4).
- Khalid Turk, Faisal Zeineldin and Abdullah S. Aljughaiman. 2020. Mapping and assessment of evapotranspiration over an oasis in arid ecosystem using remote sensing and biophysical modelling. *Arabian Journal of Geosciences* 14: 2052. <https://doi.org/10.1007/s12517-021-08415-2>
- Munir M., Alhajhoj M.R., Maged E. A., Ghazzawy H.S., Elgarawany M.M., El-Habbab M.S. , Zeineldin F.I and Al-Bahigan A.M. 2020. Effects of Date Palm Biochar on Growth, Yield and Photosynthetic Capacity of Cucumber (*Cucumis sativus* L.) Under Glasshouse Conditions. *Pak. j. life soc. Sci.*, 18(1): 7-16.
- Zeineldin F. I., Khalid Biro, Abdulrahman O. Alghannam. **2021**. Influence of natural and artificial soil conditioners on water holding capacity and hydraulic conductivity of sandy Soils. *International Journal of Food Science and Agriculture*, 5(2):219-227. DOI: 10.26855/ijfsa.2021.06.003.
- Zeineldin, F.I. and Al-Molhim Y. **2021**. Polymer and deficit irrigation influence on water use efficiency and yield of muskmelon under surface and subsurface drip irrigation. *Soil & Water Res.*, 16 (3):191-203. <https://www.agriculturejournals.cz/web/swr.htm?type=article&id=94> 2020-SWR.
- **Book Chapter:** Mapping and Assessment of Evapotranspiration over Different Land-Use/Land-Cover Types in Arid Ecosystem. **2021**. Khalid G. Biro Turk, Faisal I. Zeineldin and Abdulrahman M. Alghannam. Book: Evapotranspiration-Recent Advances and Applications. Publisher IntechOpen. DOI: 10.5772/intechopen.9675

Reaching Community

In 2016- 2021, I have participated in number of training sessions via KFU entities for enhancing capacity of the employees of the Agriculture Ministry and HIDA (SIO now) in water conservation and management:

- 1- *Training titled: Design of modern irrigation systems (14-18/5/20170) in cooperation with the faculty of society service*
- 2- *Training titled Agriculture and Modern Irrigation control in green houses (12-16/3/2017). in cooperation with MEWA*

- 3- *Training titled: Agriculture and Irrigation in Green houses (4-8/12/2016)*
- 4- *Training titled: Crop Water Requirement (29-2 to 3/3 -2016) in cooperation with HIDA and now Saudi Irrigation Organization (SIO)*
- 5- *Training titled: Fundamentals of Estimation of Water Requirement of Crops (20-22 /3-2016) in cooperation with HIDA and now Saudi Irrigation Organization (SIO)*
- 6- *Training titled: Designing, scheduling and operating farmers' exits using a program **WaterGEMS** (31-2/11/2021) in cooperation with the faculty of society service*
- 7- *On-Farm training: Provided guidance services on modern technologies to raise the efficiency of irrigation water management for employees of the MEWA and for the farmers (3-4/11/2021)*

Current Research Activities

- 1- *Writing a scientific paper and assist in the writing of a final report for finalizing project no. 10-WAT1150-06 titled " **Conservation of Water using new Technology in the Sustainable Green fodders and Vegetables** " funded by **KACST***
- 2- *As Co-Author, Writing a chapter of a book titled "**Water security: status quo and future prospects**" in a book of chair "**Food and Nutrition Security in the Kingdom of Saudi Arabia**" supervised by the Faculty of Agriculture and Food Sciences, KFU.*
- 3- *Conducting a research project number 1860022 titled "**Assess Water Percolation and Water Requirement of Al-Ahsa rice**" funding by contact of Water studies Center and the Deanship of Scientific Research.*
- 4- *As Co-investigator participating in writing a report and a paper fort new developed subsurface irrigation method for date palm trees irrigation, now under assessment in a project I participate as co-investigator, the project titled "**Assess Performance of Micro-irrigation methods in Management of Irrigation water in Date palm trees, Saudi Arabia**" funding by the Center of Date Palm*
- 5- *As P-investigator writing a scientific paper of project of Nasher (NA000201) titled "**Assess of a Modified Drip Irrigation Coupled with Low Permeability Subsurface Soil Layer on Yield and Water Use Efficiency of Tomato-Greenhouse**" funded by DSR, 2022.*

Administration, Coordination and consultancy activities

Coordinator of the council of the Deputy of Graduate Studies and Scientific Research (GSSR) from 2015 to 2018

*I have been awarded consult mission with **FAO-UN** in capacity building and project development at Al-Ahsa Irrigation project in the Kingdom of Saudi Arabia (2010)*

*Member of arbitration committee of **King Faisal University Prize** for the National Academic Accreditation and Assessment in 2013, appointed by the President of the University*

Member of the Research Scientific Standard committee (Standard 10) from 2015 to 2017 in preparing KFU institutional self-study report to the National Academic Accreditation and Assessment (NAAA)

Assisted and supervised a Master graduate student, dissertation titled "Evaluation use of soil moisture sensor-based automation subsurface (ICOMAT) and spraying irrigation systems on irrigation of Bermuda grass in Al-hsa Oasis" department of environmental and agricultural resources, faculty agriculture and food science. 2021.

Awarded consult mission with the Research and Consulting Institute, in designing automated advance micro-irrigation systems. Part of the Agricultural practices initiative to improve the productivity of fruits, vegetables, dates and field crops in the KSA. 2021

Currently contributing in Project No. (8-3): Maximizing the Environmental Impact of the KFU campus as part of the Strategic Plan 2020-2024, Draft No. (63936), under the supervisor of the University vice president office. 2022.

REFERENCES:

- Prof. Terence H. Podmore, Professor, Colorado State University, Fort Collins, Colorado. Phone (970) 491-1624
- Prof. Harold Duke, Research Scientist, United State Department of Agriculture, Water Management Research Unit, Fort Collins, Colorado. Phone (970) 491-8230
- Prof. Feng, Yongsheng, Ass. Professor, University of Alberta, Department of Renewable Resources. Phone (780) 492-4942
- Dr. Abdulrahman O. Elgaanam. Director of the Water Studies Center