

## **Personal**

NAME : **MOHAMED HASSAN DAHAB AHMED**

NATIONALITY : Sudanese

PLACE OF BIRTH : Wadi Halfa, North of Sudan

PRESENT STATUS : University Lecturer

LANGUAGES : Arabic, English

MARITAL STATUS : Married with kids

ADDRESS : Department of Agricultural Engineering,

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Present Title : **PROFESSOR**

## **Education**

1. Elementary School – Wadi Halfa, New Halfa, Argeen :1963 – 1968

2. General Secondary School , New Halfa-AlShamalia :1968 – 1973

3. High Secondary School, New Halfa-Alakademia :1973 – 1976

4. Faculty of Science, University Khartoum :1976 – 1977

5. Faculty of Agriculture, University of Khartoum :1977 – 1981

6. Faculty of Agriculture,University of Khartoum : 1982 – 1984

7. Faculty of Agriculture and Biological Sciences, University of

ewcastle upon Tyne, England, U.K : 1991 – 1994

## **Qualifications**

1. B.Sc. Agriculture (Honors), Class One. Major subject: Agricultural Mechanization. Faculty of Agriculture, University of Khartoum (May 1981)
2. M.Sc. (Agriculture). Irrigation Water management. Faculty of Agriculture, University of Khartoum (March 1984)
3. Ph.D. (Farm Machinery Management). Faculty of Agriculture and Biological Sciences, University of Newcastle UponTyne, Newcastle Upon Tyne, United Kingdom (May 1994)

## **Field Of Specialization**

Agricultural Engineering, with special interest in Farm Power and Agricultural Machinery Management.

## **Professional and Academic Experience**

### **1.TEACHING**

a- Taught and revised all Practical course work at the Department of Agricultural Engineering, Faculty of Agricultural, University of Khartoum (1982 - 1985 and 1988 – 1991).

b- Teaching the following undergraduate courses at the Faculty of Agricultural, University of Khartoum since 1994 - present

i- Introduction to agricultural mechanization .

ii. Farm Power and machinery management.

iii. Soil mechanics and tillage.

iv. Introduction to computers (1998-2006)

c- Teaching the following postgraduate courses for M.sc. students at the Department of Agricultural Engineering, Faculty of Agricultural, University of Khartoum (2000 – present):

i- Machinery seleection & mangement

ii- Organization of farm machinery servicing

iii- computers

iv- Statistics and Experimental Design

d- Taught the following undergraduate course at Faculty of Forestry, University of Khartoum

1. Introduction to Agricultural mechanization (1994 - 2006)

e. Taught the following undergraduate courses at other Sudanese Universities:

1. Introduction to Agricultural mechanization, Faculty of Natural Resources, University of Kordofan (1995)

2. Farm Power and agricultural implements

3. Farm electricity

Faculty of Agriculture and Natural Resources, University of Kassala (1999)

4. Fundamentals of Agricultural Engineering, Faculty of Agriculture, University of El Azhary (1998 - 2000)

5. Soil Mechanics and Tillage, Faculty of Agriculture, University of Bakht ElRida (2002-2004)

6. Farm power and machinery management, Faculty of Agriculture and Environment Studies, University of ElGedareif

f. Taught the following postgraduate courses for M.Sc. students at the Department of Agricultural Engineering, College of Agricultural Studies, University of Sudan for Science and Technology (2006).

1. Computer modelling application for machinery management

## **2. TRAINING**

1. Supervised the training of more than 42 postgraduate students for M.Sc. and Ph.D awarded and supervising more than 10 postgraduate students in progress in the Faculty of Agriculture, University of Khartoum, Sudan

2. Supervised the training of undergraduate students on tractor driving and on appropriate methods of implements hitching and land preparation

3. Supervised the Training of some farmers on tractor driving and maintenance at the workshop of Faculty of Agriculture, University of Khartoum, Sudan (1999).

4. Developed and trained some farmers for the appropriate methods of land preparation for vegetables production. Wad Ramli Agricultural Servicing centre, Khartoum State, Sudan

5. Training of some agricultural engineers on appropriate methods of implements hitching and land preparation at the farmers school of Faculty of Agriculture, University of Khartoum, Shambat, Sudan (2011).

## **Supervision of Post Graduate Students**

## **Supervision with Degrees Awarded**

- Supervised the training and research of more than **fifty students** in different fields of agricultural power and farm machinery and they are awarded M.Sc. and Ph.D degrees in Agricultural Engineering
- More than then students still under mu supervision

## **Research**

1- 1982- 1984: Conducted research on effect of water quantity and some soil amendments on salt redistribution in a saline – sodic clay soil. The research carried out in partial fulfillment for the requirement of M.Sc. degree in Agriculture. (*University of Khartoum, Faculty of Agriculture*).

2- 1985-1987: Research on comparison of zero tillage with wide level disc harrowing for production of sorghum in the rain-fed sector of Gedarif area (*Euro Action ACCORD Organization, NGO*).

3- 1991-1994: Developed two computer models for cereal crops growth and a wheat crop disease growth to be linked and used as tool for agricultural mechanization management. A field experiment was also carried out for model validation. (*University of Newcastle Upon Tyne, UK*).

4- 1995-2008: Supervised the research of 41 postgraduate students at the Faculty of Agriculture, University of Khartoum. The research investigated different aspects on farm power and machinery e.g. Farm and tractor power performance and management, Farm operations performance and evaluation, Tillage implements field performance, Tillage systems management and Farm machinery management and selection

5- 2008-2009: Design, Fabrication and field performance Test of Animal Drawn Groundnut Planter for Small holdings in North Kordofan State- Sudan, Moayed Mohammed Balal Zai (University of North Kordofan, Elobied, North Kordofan State, Sudan), Mohamed Hassan Dahab Ahmed (University of Khartoum, Khartoum, Khartoum State, Sudan), Rafie Mohammed Ali Elmahdi (University of North Kordofan, Elobied, North Kordofan State, Sudan)

## **Current Research**

\* Evaluation and improvement of land preparation packages for the main crops in the irrigated agricultural schemes

\* Development and simulation computer programs for farm machinery management and selection

\* Animal traction for small and traditional farming mechanization

\* Guar crop mechanical harvesting in comparison to traditional manual

\* Wheat production mechanization systems investigation under central pivot irrigation system and conventional farming in Northern state (Sudan)

\* Technology transfer for optimization and management of crop-machinery systems using advanced techniques for crops production

\* Crop and field variability and precision farming techniques

## **Administrative Experience**

### **1. Administrative Duties in University of Khartoum**

1. 1995 -.1997 and 1998 – 2000: Workshop admimistrative supervisor, Department of Agricultural Engineering, Faculty of Agriculture, University of Khartoum
2. 1997 – 2000. Post - graduate studies coordinator, Department of Agricultural Engineering, Faculty of Agriculture, University of Khartoum
3. Acting head Department of Agricultural Engineering University of Khartoum for many occasions
4. 2000 – 2001. Head Department of Agricultural Engineering, Faculty of Agriculture, University of Khartoum
5. 2001- 2010. General manager of Khartoum University Print

### **2. Other Activities and Resposibilities in Khartoum University**

1. Memder of Department of Agricultural Engineering board, Faculty of Agriculture, University of Khartoum (1994- Present).
2. Member of Faculty board, Faculty of Agriculture, University of Khartoum (1998 – 2000).
3. Suprvisor of Shambat staff nursery (1998 – 2000).
- 4- Member of Khartoum University Advisory Committee for Academic Studies (2004-Present)
5. Member of Khartoum University senate (2000 – 2009).

## **Other Professional Activities**

- 1.Internal examiner for many M.Sc. and Ph.D students in the Faculty of Agriculture, University of Khartoum

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2. External examiner for some B.Sc., M. Sc. and Ph.D student in some Sudanese Universities other than Khartoum University.
4. Member of technical committee for Agricultural tractors and machinery bidds, Agricultural Engineering department, Agricultural bank of Sudan (2004- Present).
5. Member of managerial board for ElShimalia Agricultural services, Dongla, Northern State (2005- Present)
6. Member of technical committee for testing and evaluation of tractors and agricltural equipments, GIAD for tractors and agricultural equipments (2006-present)
7. Member of technical committee for testing and evaluation of new combine harvesters from China, Agricultural bank of Sudan (2011).

## **Seminars and Workshops**

1. Monthly discussion meetings on agricultural mechanizatioon in the Sudan : obstacles, problems and solutions . Ministry of Agriculture and Forestry, Khartoum, Sept.1997.
2. Workshop on: Agricultural mechanization in the Sudan, “Mechanization of Horticultural and Forestry Crops” Arab Organization for Agricultural Development . Khartoum, Feb.1998
3. Seminar on: Agricultural Engineering challenges in the Third Century, Agricultural Research Cooporation, Wad Medani, May 2000
4. Workshop on Agricultural Engineering for developing and improving production, Khartoum, Jan. 2002
5. Symposium on: Agricultural and water resources developments in the region of the Two Holey Mosques, Effect of tractor power and speed on some field performance parameters on a clay loam soil. College of Agricultural and Food Sciences, King Faisal University, Kingdom of Saudi Arabia, Jan. 2002
6. Symposium on: The private sector contribution in developing Agricultural Engineering. Khartoum, Jan. 2003
7. Workshop on: Agric. Engineering technology transfer by practicing and teaching, khartoum, Jan. 2005
8. Workshop on: Evaluation of agricultural operations mechanization in Northern State. “The role sustained agricultural mechanization in development of agricultural production”. Northern State , Dongla- July 2007
9. Seminar on: The role of agricltural engineering in evolution of agriculture of Sudan. Fедral Ministry of Agriculture and Forestry, Khartoum, Nov. 2008
10. Present and future research in DAT in Sudan, from an engineering perspective: Draught animal technology between academic curriculum and field experience. Ahfad University, Omdurman, Nov. 2010

11. Technical management of seeding and planting machines. Exhibition for seedin and seeds. Gedarif, Ministry of Agriculture and Forestry, March 2011
12. Participation in the BADEA/ICBA training course on “Biosaline agriculture technologies and its role in the mitigation of climate change in Africa, 9-20 October 2011, Dubai , UAE

## Membership of Societies

- 1.Member of The General Union of Sudanse Agricultural Engineers
2. Member of U.K. Agricultural Engineers Association
3. Member of Sudan Agricultural Council
4. Member of Society of Sudanese Colleges of Agricultural Sector
5. Member of Sudanese Society for Environment
6. Member of Sudanese Society for Desert and Desertification
7. Member of Argeen non-gonernmental organization for development

## Publications

### A) Research Papers Published in Refreed Journals:

1. **DAHAB, M.H.**, Mustafa, M.A. and Abdel Rahman, H.A. (1988). Intermrrtent evaporation, moisture distribution and salt redistribution through saline sodic soil as affected by irrigation fequency and quantity. *Soil science*, 146(3): 168 - 175.
2. O`Callaghan; J.R., Hossain, A.H.M.S., **DAHAB, M.H.** and Wyseure, G.C.L. (1994). SODCOM : A solar driven computational model of crop growth. *Computers and Electronics in Agriculture*, 11(4): 293 - 308.
3. O`Callaghan; J.R., **DAHAB, M.H.**,Hossain, A.H.M.S. and Wyseure, G.C.L.(1994). Simulation of *Spetoria tritici* - Winter Wheat interaction. *Computers and Electronics in Agriculture*, 11(4): 309 - 321.
4. Murphy, D.P.L **DAHAB, M.H.**, Wyseure, G.C.L. and O`Callaghan; J.R. (1994). The simulation of the effects of shading on the growth and yield of winter barley (*Hordeum distichum*). *Computers and Electronics in Agriculture*, 11(4): 347 - 350.
5. Abdel Rahman, H.A., **DAHAB, M.H** and Mustafa, M.A. (1996). Impact of soil amendments on intermittent evaporation, moisture distribution and salt redistribution in saline sodic clay soil columns. *Soil science*, 161(11): 1-10
6. **DAHAB, M.H.** and O`Callaghan, J.R.(1997). A simulation modeling approach to the management of spray treaments of fungal attacks on Wheat. *Journal of Agricultural Engineering Research*, 66: 287 - 293

7. Ballel, Z.M. and **DAHAB, M.H.** (1997). Effect of soil condition on a two - wheel drive tractor performance using three types of tillage implements. *University of Khartoum Journal of Agricultural Sciences*, 5(2): 1-22

8. **DAHAB, M.H.** and O'Callaghan, J.R. (1998). Simulation modeling for crop - disease spraying management. *Agricultural Mechanization in Asia, Africa and Latin America*, 29(3): 27 - 32.

9. **DAHAB, M.H.** and Mohmaed, M.D.(2002). Tractor tractive Performance as affected by soil moisture content, tyre inflation pressure and implement type. *Agricultural Mechanization in Asia, Africa and Latin America*, 33(1): 20 – 34.

10. **DAHAB, M.H.** and Adam, O.H. (2002). Development of Mathematical models for estimation of tractor repair and maintenance costs in the main irrigated Schemes of the Sudan. *University of Khartoum Journal of Agricultural Sciences* 10(2): 251 - 266.

1. **DAHAB, M.H.** and ALHashem, H.A.E. (2002). Study on the effect of tractor power and speed on some field performance parameters working on a clay loam soil. *Journal of Agricultural Sciences, Mansoura University*, 27(1): 573 - 582.

12. **DAHAB, M.H.** and Hamed, S.F.E. (2003). comparative of weeding by animal-drawn cultivator and manual hoe in EN- nohoud area, Western Sudan. *Agricultural Mechanization in Asia, Africa and Latin America*, 34(3): 27-30.

13. **DAHAB, M.H.** and Elsheikh, A.O. (2003). Quantitative losses of Sunflower Combine harvesting as affected by machine header modification, forward speed and crop seed moisture content. *University of Khartoum Journal of Agricultural Sciences*, 11(2): 179 – 203.

4. **DAHAB, M. H.** and Mohamed, O. M. (2005). Effect of some tillage practices under two irrigation intervals on moisture and salt redistribution in a saline-sodic clay soil. *University of Khartoum Journal of Agricultural Sciences* 13(3): 452 – 473.

5. **DAHAB, M. H.** and Mohamed, O.E. (2006). A computer model for selection of farm machinery. *University of Khartoum Journal of Agricultural Sciences* 14(2):167 – 181.

16. Ballel, Z.M., **DAHAB, M.H.** and Tong, J. (2006). Effect of soil conditions on power performance of primary tillage implements (Abstract). *Agricultural Mechanization in Asia, Africa and Latin America*, 37(3): 93 - 94.

17. **DAHAB, M. H.** and Elgaali, I. E. (2007). Effect of partially mechanical and manual harvesting and sowing method on yield losses of sesame in Eastern Sudan. *University of Khartoum Journal of Agricultural Sciences* 15(1): 84 – 100.

18. **DAHAB, M. H.** and Hebiel, E. A. (2007). Field performance of some tillage implements as affected by soil type and forward speed. *Sud. J. Stnds.Metrol.* 1(1): 41 – 52.

19. Omer, A. Abdalla, **DAHAB, M. H.** and Saeed, A. B. (2007). Effect of soil condition, sowing depth and amount of simulated rainfall on water concentration and wheat growth in a glass house. *University of Khartoum Journal of Agricultural Sciences* 15(1): 39 – 51.

20. **DAHAB, M. H.**, Mohamed, H. I, Awad elkarim, T. D. and Elramlawi, H. R. (2007). A combined chisel-ridger implement for economizing power under heavy clay soil. *Journal of Science and Technology* 8(1): 162 – 172.

1. **DAHAB, M. H.**, Hassan, H. E. and Nayel, M.H. (2007). Modifiction of power transmission system to the stationary combine thresher. *Agricultural Mechnization in Asia, Africa and Latin America* 38(3): 9 – 14
2. **DAHAB, M. H.** and Ahmed, A. O. (2007). Energy requirements for two tillage implements as affected by soil condition and depth of ploughing in clay soils. *AlBuhuth* 11(1): 79 - 91.

23. **DAHAB, M. H.** and Abu Zaid, K. A. (2007). Tillage methods management for fodder sorghum production under irrigation in a clay-loam soil (Sudan), *Sud. J. Stnds.Metrol.* 1(2): 41 – 51.

4. **DAHAB, M. H.** and Suliaman, K. H. (2008). Evaluation of some tillage systems for cotton production in New Halfa Agricultural Scheme- Sudan. *University of Khartoum Journal of Agricultural Sciences* 16(1): 61 – 74
5. Elhadi, E. A., Abualgasim, M. R. and **DAHAB, M. H.** (2008). Tillage implements effect on three soil physical properties of Elrawakeeb dry land research station. *AlBuhuth* 12(1): 30 - 41.

26. Abd Elmowla , M. A., DAHAB, M. H. and Mohamed H. N. (2009). Air compressor assembly,installation and evaluation on agricultural tractor. *University of Khartoum Journal of Agricultural Sciences* 17(1): 100 - 117

7. **DAHAB, M. H.** and Mahgoub, M. A. (2009). Effect of tillage and sowing methods on wheat production in the upper terraces of the Nothern State (Sudan). *University of Khartoum Journal of Agricultural Sciences* 17(3): 380 – 391
8. **DAHAB, M. H.**, Yassin H. M. and Alhashim H.A.(2009).Computer aided farm machinery ownership cost and renting comparison. *J. Saudi for Agric. Sci.* 8(2): 68- 84.
9. **DAHAB, M. H.** andNuha B. E. (2010). Spray droplet number and volume distribution as affected by pressure and forward speed. *Agricultural Mechnization in Asia, Africa and Latin America* 41(4): 36-42

30. Mohamed A. L. and **Dahab, M. H.** (2010). Computer programming for selection of boom width and tank capacity of field sprayers. *University of Khartoum Journal of Agricultural Sciences* 20 (3): 363-374

1. **DAHAB, M.H.** and Safia A. E. (2011). Effect of selected tillage implements on physical properties of two soils in Khartoum area (Sudan). *Agricultural Mechnization in Asia, Africa and Latin America* 42(2): 9-13

**B) Accepted papers for Publication in Refreed Journals:**

- **Dahab, M.H.** and Awad, O.M. Effect of Agricultural Tractor Hours of Use and Age on Estimation of Repair and Maintenance Costs in New Halfa area (Sudan). *AlBuhuth*, (accepted).

**C) Papers on Process:**

**Dahab, M. H.** and Moayed, M. B. computer programming for prediction of soil bulk density effect on tencher design parameters.

**Dahab, M. H.** and Mohamed I. Physical energy input/output estimation for some irrigated crops in the central clay of Gezira scheme (Sudan).

**Dahab, M. H.** and Tarig, H. T. Agricultural tractor diesel fuel consumption estimation by computer programming.

Balal, M. M., **Dahab, M. H.** and Elmahdi, R. M. A. Design and fabrication of animal drawn G/N planter for small holdings in western Sudan.

**Dahab, M. H.**, Balal, M. M. and Elmahdi, R. M. A. Field performance evaluation of animal – drawn ground nut planting machine for traditional agriculture of western Sudan.

#### **D) Thesis and Books :**

1. **DAHAB, M.H.** (1984) . Effect of irrigation quantity and frequency and some amendments on salt leaching in a saline-sodic caly soil . *M.Sc. Thesis*, Faculty of Agriculture, University of Khartoum.
2. **DAHAB, M.H.** (1994). Crop constraints on the mechanization of disease mangement. *Ph.D Thesis*, Faculty of Agriculture and Biological Sciences, University of New Castle upon Tyne, England U.K.
3. **DAHAB, M.H.** (2000). Power utilization in the farm and Machimery Selection.Text book (in Arabic) , Khartoum Universtiy printing press
4. **DAHAB, M. H.** (2008). Principles of Soil Mechanics and application inTillage. Text book (in Arabic) . , Khartoum Universtiy printing press