

# Personal Profile

## ABDEL RAHIM ELSAYED KARRAR

(BVSc; DTVM; MSc; Ph.D)

Professor in Clinical Medicine

Molecular Biology Laboratory (MBL)

Department of Clinical Medicine,

Faculty of Veterinary Medicine,

University of Khartoum

## Education Professional Experience and Responsibilities

### **1971 B.V.Sc. Faculty of Veterinary Science, University of Khartoum Sudan.**

**1971** Part – time Demonstrator, Department of Veterinary Anatomy Faculty of Veterinary Science, University of Khartoum Veterinary Meat Inspector and Veterinary Quarantine Officer, Department of Animal Health (Ministry of Animal Resources).

**1973-1975** Assistant Research officer: Department of Virology, Veterinary Research Administration, Ministry of Agriculture, Food and Natural Resources, Khartoum, Sudan Deputy National Co-ordinator Sudan Livestock Census and Disease Survey.

**1976** (D.T.V.M.) Diploma in Tropical Veterinary Medicine,(Royal Dick Vet.) Faculty of Veterinary Medicine, University of Edinburgh, United Kingdom.

**1977** M.Sc.: (Royal Dick Vet.) Faculty of Veterinary Medicine, University of Edinburgh, United Kingdom.

**1977-Present.**Member of the General Council of The University of Edinburgh ,United Kingdom.

**1977-1979** Research Officer, Department of Virology, Veterinary Research Administration, Khartoum, Sudan.

**1979-1983** Department of Veterinary Preventive Medicine, the Ohio State University, Columbus, Ohio, U.S.A.

**1983** Ph.D.: The Ohio State University Columbus, Ohio, U.S.A.

**1981-1990** Senior Researcher in Virology, (Veterinary Research Administration ,Khartoum-Sudan).

**1989-1990** Head Department of Foot and Mouth Disease ,Veterinary Research Administration, Khartoum, Sudan.

**1990** Lecture Department of Medicine, Pharmacology and Toxicology, Faculty of Veterinary Science, University of Khartoum, Sudan.

**1990-1999** Associate Professor, Department of Medicine, Pharmacology and Toxicology, Faculty of Veterinary Science, University of Khartoum, Sudan.

**1999-present** Professor,Department of Medicine, Pharmacology and Toxicology.

**1992-1994** Head Department of Medicine, Pharmacology and Toxicology, Faculty of Veterinary Science, University of Khartoum, Sudan.

**1995-1998** Director, Scientific Research Directorate University of Khartoum. Deputy Vice Chancellors Office (Vice Dean Faculty Post & Status).

**1998-2001** Director, Alumni Affairs Directorate, Vice Chancellors Office. University of Khartoum. (Vice Dean Faculty Post & Status).

**2001-2002** Director,Directorate for Scientific Cooperation and Cultural Realations (Vice Dean Faculty Post& Status).

**1999-2003** Executive Manager of the University Development Programs and Projects, Vice-Chancellors Office.

**2003- present** Director, Molecular Biology laboratory (MBL), Department of Medicine, Pharmacology and Toxicology. Faculty of Veterinary Medicine, University of Khartoum.

**2006** – Convenor ,co-ordinator and Supervisor of Khartoum University ([www.UofK .edu](http://www.UofK.edu) ) web site on the Internet.( Dean Faculty Pay )

**2006-2009** Director Staff Development Center.(Dean Faculty Pay.)

**2010** – Chairman of the Committee of Khartoum University Staff Home and the International Hall Project

**2010** – Convenor of the Committee preparing the proposal for funding of University of Khartoum Medical City and The Sudan Library

**2010** – Member of The Academic Reform Committee of The Faculty of Veterinary Medicine.

**2010 – Present** .Advisor Africa City Of Technology .

**2010** – Member of the Equustrain School Committee

**2006 -Present** – Chairman of Science Popularization Committee of Sudan National Academy of Sciences.

## **Teaching at the Ohio State University (U.S.A)**

1. Vet.Prev.785 Biological Research Techniques (Virology) for Professional and Graduate Students.
2. Vet.Prev.693 Lab. Techniques in Virology for Professional and Graduate Students.
3. Vet.Prev.794.03 Prevention of Communicable Disease for Professional and Graduate Students.
4. Vet.Prev.621 Applied Veterinary Medicine for Professional and Graduate Students.
5. Undergraduate Honours Students Co-supervisor.

## **Scholarships, Honors and Awards**

1. The British Council Scholarship (Provided by the O.D.A. of the British Government) for Postgraduate Studies in the United Kingdom, 1975-1977.

2. Phi Zeta (Honors Society of Veterinary Medicine, U.S.A).
3. The Ohio State Graduate Students Alumni Research Award, 1981-1982.

## **Degrees, Memberships, Certificates and others**

1. BVSc (Bachelor of Veterinary Science) University of Khartoum.
2. DTVM (Diploma in Tropical Veterinary Medicine) University of Edinburgh, Great Britain.
3. MSc (Master of Science) University of Edinburgh, Great Britain.
4. Ph.D. (Doctor of Philosophy) the Ohio State University U.S.A.
5. Association of Teachers of Veterinary Public Health and Preventive Medicine,ATVPHPM, (U.S.A and Canada) lately renamed Association of veterinary epidemiology and preventive veterinary medicine (AVEPM).
6. Membership in the Delta Chapter of Phi Zeta (Honours Society of Veterinary Medicine, U.S.A).
7. Letter of Congratulation from the State Representative 28<sup>th</sup> district, the Ohio House of Representative the State of Ohio.U.S.A.

8. Certificate of Achievement for Dedicated Service as Coach of the Class of 1983 Woman Soccer Team Ohio State Columbus. Ohio, U.S.A.
  
9. A Certificate Awarded by the National Council for Research (NCR) Sudan Atomic Energy Commission in Participation on a Training Course on Radioisotopes in Animal Health and Production.
10. Two Certificates Awarded by the Republic of Turkey Ministry of Agriculture Forestry and Rural Affairs on training Course on Production of Veterinary Vaccines held in Turkey 1987.
  
1. A Certificate from the Dean Faculty of Arts University of Khartoum in appreciation for active Contribution into the 2<sup>nd</sup> Deans of Faculty of Arts of Arab Universities Conference.
  
2. Certificate of Attendance by the UNESCO and Arabian Gulf University on Organization, Management and Evaluation of Applied Scientific and Technological Research Systems in Arab Universities, Held in Bahrain 1996.
  
3. A Training Certificate by the University of Khartoum Computer Center, Held in Sudan 1998.
  
4. A Certificate of Attending an Internet Training Program for Deans of Faculties of University of Khartoum
5. More than 50 Certificates of Acknowledgment , Thanks,Appreciation etc

## **Professional Organizations and Committees**

1. Sudan Veterinary Association (Secretary 1988-1992).(1998-present) Member of the executive committee)
2. Member of the Editorial Board of Sudan Journal of Veterinary Research (1987-1990).
3. Phi Zeta (Honours Society of Veterinary Medicine, U.S.A).
4. Association of Veterinary Epidemiology and Preventive Medicine (AVEPM) for North America (U.S.A and Canada).
5. Sudan Society for Microbiology.

6. Chairman of Examinations committee, Faculty of Veterinary Science, University of Khartoum (1991-1994).
7. Faculty Representative in the Examinations and Prizes committee, University of Khartoum (1991-1994)
8. Faculty Board Member, Faculty of Veterinary Science, (1992-1994) (1999-present).
9. University of Khartoum Senate Member (1992-1994) – (1995-present)
10. University of Khartoum Council (Elected Member) 2009-2013.
11. Member of Arabicization Committee of the Faculty of Veterinary Science, (1992 -1999).
12. Deputy Chairman Planning and Projects Committee of the University of Khartoum Call, (1994-1997)
13. Chairman, Board of the Trustees of Computer Studies Academy, (1990-2000).
14. Member of the Board of Directors of Sakina Institute for Physically and Mentally Disabled Children (1990-present).
15. Member of the Scientific Board of the National Center for Diplomatic Studies, Ministry of Foreign Affairs (1997-2002).
16. Member of the Board of Trustees of Abd El Karim Mirghani Cultural Center (1999-present).
17. The Academic Staff Assisting the Blind students of the University (1998-present).
18. Chairman of the Voluntary High Committee for the Development and Employment of Graduate Students in The Sudan.(1997-2001)
19. Member of the Executive Committee of The International Forum on African Civilization (IFAC).
20. President of Assilat Attaiba International Organization.(Good Will Connection ) An N.G.O. For persons with special needs.
21. President of The Society of Sudanese Colleges of Agriculture Sector (2005-Present )

## **Teaching at the University of Khartoum and other Academic Institutions Activities**

1. Part-time Lecturer (M.Sc. course of Medical Entomology). Medical Virology and Immunology, Faculty of Science, University of Khartoum. Course sponsored by the WHO of the United Nations.
2. Part-time Lecturer (Diploma in Tropical Animal Health) Viral Vaccines Research and Production, Faculty of Veterinary Science.
3. Part-time Lecturer, Department of Medicine, Pharmacology and Toxicology Faculty of Veterinary Science.
4. External Examiner, (Mastership in Clinical Pathology), Faculty of Medicine.
5. External Examiner in Medicine, Therapeutics and Toxicology Faculty of Veterinary Science.
6. External Examiner, Faculty of Science University of El Neelein.
7. External examiner for Ph.D Faculty of Veterinary Medicine and Animal Production, Sudan University of Science and Technology.
8. External examiner, Faculty of Basic Medical Science, Omdurman Islamic University, (MSc)

9. External examiner ,Faculty of Veterinary Science,University of Nyala
10. External examiner Faculty of Veterinary Science University of Bahr El Ghazal
11. External Examiner,Faculty of Medical Laboratory Science,University of Sudan for Science and Technology.
12. External examiner.Faculty of Veterinary Medicine and Animal Husbandary,Sudan University for Science and Technology.
13. Exernal examiner Faculty of Health Sciences University of Medical Sciences and Technology.
14. Part time Lecturer Faculty of Health Sciences,University of Medical Sciences and Technology.
15. Part time lecturer Sudan Academy of Sciences (Medical Microbiology-Virology.)
16. External Examiner For MSc Students in Medical Immunology Sudan Academy of Sciences.
17. PhD Examiner examiner Sudan Academy of Sciences.
18. Accessor for the promotion to the status of Professor (The Central Veterinary Research Laboratories )
19. Accessor for the promotion to the status of Associate Professor ( The National Center for Research )
20. Accessor for the promotion to the status of Associate Professor ( University of Gezira )
21. Accessor for the promotion to the status of Associate Professor ( King Faysal University – Saudi Arabia )
22. Member of the Scientific Board of The Sudanese Veterinary Council..
23. Member of The Continuing Education Committee Of The Professional Union of Universities and Higher Institutions Staff.
24. Editor in- Chief of ACT-BRCs (Africa City of Technology-Biotechnology Research Communications)

## **Record of Contribution to Department, Faculty, the University or any other Organization**

1. Head Department of Medicine Pharmacology and Toxicology. (1992-1994).
2. Member of Faculty Board (1992-1994).(1999-present)
3. Member of Faculty Research Board (1992-1994).(1999-present)
4. Chairman of Faculty Examination Committee (1991-1994).
5. Faculty Representative (Examination and Prize Committee) (1991-1994).
6. Member of the University Senate (1992-1994) (1995-present)
7. Member of the University Council (Elected Member ) 2009 – 2013
8. Member of Arabicization Committee of the Faculty of Veterinary Science, (1992-1999).
9. Deputy Chairman Planning and Projects Committee of the University of Khartoum Call, (1994-1997).

10. Director, Scientific Research Directorate University of Khartoum (Deputy Vice Chancellors Office) (1995-1998).
11. Director, Alumni Affairs Directorate, Vice Chancellors Office University of Khartoum (1998-present).
12. Executive Manger of the University Development Programs and Projects (1999-2003) in Addition to the Above Responsibilities
13. Director,Cultural Relations and Scientific Cooperation (Deputy Vice Chancellors Offoce (2001-2002).
14. Director Staff Development Center 2006-2009

## **Teaching in Other Universities**

1. University of Juba, Faculty of Natural Resources (Veterinary Medicine).
2. University of Bahr El Ghazal, Faculty of Veterinary Science (Veterinary Medicine).
3. Ahfad University for Women, School of Family Science (Medical Virology).
4. Sudan Academey of Science ( Medical Virology.)
5. University of Deling ( Scientific Research )
6. El Imam E Mahdi University ( Scintific Research )
7. University of Gezira ( Scientific Research & Staff Development Center Setup and how it operates )
8. University of Sennar ( Scientific Reasearch )
9. University of Dongola (Scientific Research)

## **Other Activities**

1. Deputy Chairman of the Parents Council of Ahlia Junior Secondary School Omdurman.
2. National Co-ordinator FAO Workshop on Poultry Viral Vaccines.
3. Lecturer on the FAO Workshop on the Diagnosis of Rinderpest.
4. Member of the Parents Council of El Mulazmine School for Girls Omdurman.

## **Postgraduate Students Supervision**

1. Major Supervisor for 12 Graduate Students. (9MSc and 3 Ph.D.) 7 MSc and 3 Ph.D Students Already Graduated
2. Two Ph.D Students has recently been addmitted into the program under my supervision.
3. Co-supervisor for 1 Graduate Student. (MSc – Also Graduated).



## **Postgraduate Students Examinations**

More than 30 Graduate Students had been Examined at the level of the Master Degree and the Ph.D.

## **Assessment for Promotion**

Assessor for the Promotion to the Status of Associate Professor and Professor .(Academic and Research Institutions)

## **Consultancy**

1. Animal Health Advisor-Butana Dairy Company.
2. Animal Health Expert, Arab Organization for Agriculture Development (Sultanate of Oman 1992-1993).
3. Africa City of Technology, Ministry of Science & Technology

## **Organization of Conference and Seminars (1988-1999)**

A Member of the Steering Committee of the Following:

1. The Thirteenth Veterinary Conference (S.V.A.) Khartoum Sudan.
2. The Seminar of the Role of Animal Wealth in Food Security and Development.
3. The Silver Jubilee of the Faculty of Veterinary Science.
4. Fifth Arab Veterinary Conference .Khartoum Sudan
5. Conference of Faculties of Arts Union (Association of Arab Universities) Khartoum Sudan.
6. Conference on Town Planing, Casual Dewelling and Environmental Effect in the Arab World (Ministry of Higher Education and Scientific Research, and Association of Arab Scientific Research Council, Baghdad, Iraq).

7. Eighth Arab Veterinary Conference Khartoum Sudan.
8. Conference on African Civilization at the Turn of the Century 21.
9. The Graduate College Silver Jubilee.
10. The First International Conference on Biotechnology ( Africa City Of Technology )
11. The Summer School workshop on Nanotechnology ( Africa City Of Technology )
12. The Second International Conference on Biotechnology (Africa City Of Technology)
13. Medical & Health Sciences Graduate Studies Conference.(University of Khartoum Graduate College)
14. The Conference on the Occasion of 250 years of the Veterinary Profession.Faculty of Veterinary Medicine University of Khartoum.

## **Invited Speaker, Delivering Scientific talk at the Following Institutions**

1. Prevalence of Parainfluenza Antibodies in Sheep. Veterinary Research Laboratories, Khartoum, Sudan, 1978.
2. A Review of the Status of Bovine Viral Diarrhoea. Virus Department of Veterinary Preventive Medicine, the Ohio State University, U.S.A.1979.
3. BVDV. Similarities between Cytopathic and non-Cytopathic Strains by Electron Microscopy. Conference of Research Workers in Animal Diseases Chicago, Illinois, November 1981.
4. Comparative Electron Microscopy between Cytopathogenic and non- Cytopathogenic Strains of Bovine Viral Diarrhoea Virus (BVDV). Department of Microbiology, College Biological Science, the Ohio State University, 1982.
5. Some Aspects of Veterinary Research in the Tropics. Department of Microbiology, College of Biological Science, The Ohio State University, 1982.
6. Kinetics of RNA Synthesis for Cytopathogenic and non- Cytopathogenic Bovine Viral Diarrhoea Virus Strains. Conference of Research Workers in Animal Diseases Chicago, Illinois, November 1982.
7. Scientific Research in Arab Universities Problems and Solutions. The Cultural Program Faculty of Science University of Khartoum (1998).
8. The Art of Studying and Answering – the Cultural Program Faculty of Science University of Khartoum (1998).
9. Scientific Research as it Applies to Veterinary Science. Constrains and Mechanics for Proper Application. Ministry of Animals Resources, State of Northern Kordofan, El Obied (1998).

## **PUBLICATIONS**

## 1. Conventional and Molecular Virology

1. **Aradaib, I. E.**, M. E.H. Mohammed; N. O. M. Ali; A. A. Majid; S, H. Idris; A. E, Karrar, 2004. A simple and Rapid method for Detection of African horse sickness virus serogroup using RT-PCR. **Veterinary Research Communication (Accepted).**

2. **Aradaib, I. E. Karrar, A. E. 2004.** Rapid detection of pork in processed food using polymerase chain reaction amplification technology. **Journal of Animal and Veterinary Advances (Accepted).**

3. **Aradaib, I. E.,** Karrar, A. E. **2004.** Molecular characterization of a member of the Palyam orbiviruses serogroup recovered from sheep in South Africa. **Veterinary Research Communication (Accepted).**

4. Elamin, S. M., **Karrar, A. E.;** Mohammed, M. M.; Majid, A.A.; **Aradaib, I. E.** 2004. Comparison of dsRNA profiles of Sudanese isolates of epizootic hemorrhagic disease of deer virus. **Pakistan Journal of Biological Sciences (accepted).**

5. Elamin, S. M., Salih, M.M., Omer, R. A., Abdalla, M. A., **Aradaib, I. E.,** Karrar, A. E. 2004. Detection of Bluetongue Virus Serogroup in Cell Culture Using RT-PCR. **Pakistan Journal of Biological Sciences (accepted).**

6. Elamin, S. M. M.; Omer, R. A.; El Nahas A. E. ; Karrar, A. E.; **Aradaib, I.E** 2004. A complementary DNA (cDNA) Probe for detection of Sudanese epizootic hemorrhagic disease virus serogroup. **Journal of Animal and Veterinary Advances (Accepted).**

7. Rihab A. Omer; Elamin, S. M. M.; Omer, R. A.; El Nahas A. E. ; Karrar, A. E.; **Aradaib, I.E** 2004. PCR for detection of Echinococcus granulosus strains in Tamboul. **The Sudan Journal of Veterinary Science and Animal Husbandry (In press).**

8. Elamin, S.M.M; Karrar, A. E.; Majid, A. A.; Elamin, S. M.; Salih; **Aradaib, I. E** 2004. Detection of Sudanese isolates of Palyam serogroup of orbiviruses using reverse transcriptase polymerase chain reaction. **The Sudan Journal of Veterinary Science and Animal Husbandry (Accepted).**

9. Elamin, S. M., **Karrar, A. E.;** Mohammed, M. M.; Majid, A.A.; **Aradaib, I. E. 2004.** Comparison of dsRNA profiles of Sudanese isolates of epizootic hemorrhagic disease of deer virus. **Pakistan Journal of Biological Sciences (accepted).**

10 Elamin, S. M., salih, M.M., Omer, R. A., Abdalla, M. A., **Aradaib, I. E., Karrar, A. E. 2004.** Detection of Bluetongue Virus Serogroup in Cell Culture Using RT-PCR. **Journal of Animal and Veterinary Advances 3 (11): 671-674.**

1. **Karrar, A. E.;** **Aradaib, I. E.;** Majid, A. A.; Elamin, S. M.; Salih; Osburn, B. I.. 2003. Detection of Sudanese isolates of Palyam serogroup of orbiviruses using reverse transcriptase polymerase chain reaction. **Journal of Animal and Veterinary Advances 2 (12): 671-674.**

2. **Aradaib, I.E.;** Abdalla, M. A.; **Karrar, A. E.;** Osburn, B. I. 2003. Detection of North American Orbivirus serogroup using RT-PCR. **Veterinariski Arhiv 73:123-130**

13. Abdalla, M. A.; **Aradaib, I. E.;** **Karrar, A. E.;** Osburn, B. I. 2003. PCR detection of Sudanese isolates of Bluetongue virus serogroup. **Veterinariski Arhiv 73:311-318.**

4. N., A. Ali ; **Karrar, A. E.**; Mohammed , M. M.; Majid, A.A.; Aradaib, I. E. 2003. RNA genome profiles of some Sudanese isolates of Blue tongue virus using agarose gel electrophoresis and SDS-PAGE. **Journal of Animal and Veterinary Advancement. 6: 358-362.**
  5. Aradaib, I. E.; **Karrar, A. E.**; Mohammed , E.H.M.; Elamin, S.M.; Salih, M.M. 2003. Simultaneous Detection and differentiation of Epizootic hemorrhagic disease virus serotype 1 and 2 using RT-PCR. **Journal of Animal and Veterinary Advancement 10: 584-588.**
  6. **Karrar, A. E.**; Aradaib, I. E ; Omer, R. A., Majid, A. A.; Elamin, S. M.; Salih; Osburn, B. I. 2003. Characterization of epizootic hemorrhagic disease virus serogroup recovered from sentinel cattle at Shambat. **Journal of Animal and veterinary Advances 11: 611-614.**
  7. **Karrar, A. E.**; Aradaib, I. E ; Majid, A. A.; Elamin, S. M.; Salih; Osburn, B. I. 2003. Characterization of epizootic hemorrhagic disease virus serogroup recovered from sentinel cattle at Shambat. **Journal of Animal and veterinary Advances 10: 611-614.**
  8. **Karrar, A. E.**; Mohammed , E.H.M.; Elamin, S.M.; Salih, M.M. Aradaib, I. E. 2003. Detection and differentiation of Epizootic hemorrhagic disease virus serotype 1 and 2 using RT-PCR. **Journal of Animal and Veterinary Advancement 10: 584-588.**
  9. N., A. Ali ; **Karrar, A. E.**; Mohammed , M. M.; Majid, A.A.; Aradaib, I. E. 2003. RNA genome profiles of some Sudanese isolates of Blue tongue virus using agarose gel electrophoresis and SDS-PAGE. **Journal of Animal and Veterinary Advancement. 2(6):358-362.**
  10. Aradaib,I.E.; **Karrar, A. E.**; Abdalla, M. A; Osburn, B. I. 2003. Detection of North American Orbivirus serogroup using RT-PCR. **Veterinariski Arhiv 73: 123-130**
- 21.** Abdalla, M. A.; Aradaib, I. E.; Karrar, A. E.; Osburn, B. I. 2003. PCR detection of Sudanese isolates of Bluetongue virus serogroup. **Veterinariski Arhiv 73: 311-318.**
2. Aradaib, I.E. ; **Karrar, A. E.** ; Mohammed, M. E. H. 2003. Molecular characterization of GP 18 virus isolate, a member the palyam serogroup of Orbiviruses, recovered from *Culicoides schltzei* in Shambat, Central Sudan. **Journal of Science and Technology (In press).**
  3. Aradaib I.E. Mohammed, M.E.H.; **Karrar, A. E.**; Ibrahim, K.E.E.; Osburn, B.I. 2003. Detection of Australian palyam serogroup of orbiviruses using antigen derived from Sudanese GP18 orbivirus isolate. **Journal of Science and Technology (In press).**
  4. Aradaib, I. E.; Mohammed , E.H.M.; **Karrar, A. E**; Omer, R. A.; Elamin, S.M.; Salih, M.M.. 2003. Molecular Charaterization of Sudanese and North American serotypes of Epizootic hemorrhagic disease virus. **Journal of Animal and Veterinary Advancement. 2(6):358-362.**
  5. Aradaib, I.E. 2003 ; **Karrar, A. E.** ; Mohammed, M.E. H. 2002. Molecular characterization of GP 18 virus isolate, a member the palyam serogroup of Orbiviruses, recovered from *Culicoides schltzei* in Shambat, Central Sudan. **Journal of Science and Technology (In press).**
  6. Abdalla, M.A; Omer R.A.; **Karrar A.E**; Mohammed M.E.H; Aradaib, I.E.; Osburn, B.I. 2000. Experimental palyam virus infection in Nubian goats. **The Sudan Journal of Veterinary Science and Animal Husbandry 39: 116-121.**
  7. Aradaib, I.E.; Moderos, R ; **Karrar, A. E.**, Ibrahim, K.E.; Osburn, B.I. 2000. Evaluation of epizootic hemorrhagic disease virus infection in sentinel cattle from the San Joaquin

- Valley of California. **The Sudan Journal of Veterinary Science and Animal Husbandry 39: 1-14.**
8. Aradaib, I.E.; Ibrahim, K. E. E.; **Karrar, A. E.**; Osburn, B.I.. 1999. A review on the diagnosis of orbivirus infection in Veterinary Medicine. **The Sudan Journal of Veterinary Science and Animal Husbandry 38: 1-29.**
  9. Mohammed, M.E.H.; Mukhtar, M.M.; Ibrahim, K.E.E.; **Karrar, A.E.**; Osburn, B.I. **Aradaib, I.E.** 1999. RNA genome profiles of Sudanese isolates of palyam virus serogroup using PAGE and agarose gel electrophoresis. **The Sudan Journal of Veterinary Science and Animal Husbandry 38: 30-35.**
  10. El Hassan, O. O. **Karrar A.E.**, and Mohasin El Nur Abdel Rahman (1999). Response of Seven Day Old Chicks to Vaccination with a Mesogenic and a Lentogenic Strain of Newcastle Disease Vaccine in Drinking Water. **The Sud.J.Vet.Sc.Anim.Husb.Vol.38 (1,2)P:150-156)**
  11. El Hassan, O. O., **Karrar A.E.**, and Mohasin El Nur Abdel Rahman (1999). The Immune Response of Baby Chicks to LaSota Newcastle Disease Vaccine Administered at Different Concentrations in Drinking Water. **The Sud.J.Vet.Sc.Anim.Husb.Vol.38 (1,2) P:157-161).**
32. El Hassan O.O, **Karrar A.E.**, and Mohasin El Nur Abdel Rahman (1999). A Study of two Routs of Administering Newcastle Disease at Different Environmental Conditions. **The Sud.J.Vet.Sc.Anim.Husb. 38 (1,2) P: 143-149 )**
  33. Hassan, A.K.M. and **Karrar A.E.**, (1988) Point Prevalence of Bovine Herpesvirus-1 Antibodies in the Sudan. **Trop. Anim. Health and Prod. 20:163-164.**
  34. Mona, A.Babiker, **Karrar A.E.**, and M.El Nasri, (1998). Fowl Pox in Khartoum State, **The Sud.J.Vet.Sc.Anim.Husb.Vol.37 (1.2) P:43-48)**
  35. Siham E.S., **Karrar A.E.**, and El Amin, Salah, M.M. (1998) Prevalence of Eimeria spp. In Nubian Goats in Khartoum State (Short Communication), **The Sud.J.Vet.Sc.Anim.Husb.Vol.37 (1.2) P:193-194).**
6. Siham E.S., **Karrar A.E.**, and El Amin, Salah, M.M. (1997) Clinical Picture and Chemotherapy of Experimental Haeomonchus Contortus and Coccidial Infection in Goats. **The Sudan Journal of Veterinary Science and Animal Husbandry. Vol .36 (1,2): 158 – 166.**
  37. Siham E.S., **Karrar A.E.**, and El Amin, Salah, M.M. (1997) Clinical Aspects on Caprine Coccidiosis. **The Sudan Journal of Veterinary Science and Animal Husbandry. Vol .36 (1,2): 175-182.**
  38. **Karrar A.E.**, Hughes, J.H. and Heuschele, W.P (1983). Kinetics of RNA Synthesis of Cytopathogenic and non-Cytopathogenic Bovine Viral Diarrhoea Virus Strains. **Sudan Journal of Veterinary Research. 5:58-64.**
9. Eisa, M., **Karrar A.E.** and Abdel Rahim, A.H. (1980). Probable Occurrence of Infection due to Adenoviruses and Parainfluenza-3 virus in Residents of Khartoum Province in the

Sudan. **Transaction of the Royal Society of Tropical Medicine and Hygiene.** 74(3). 252-263.

40. Eisa, M., Osman M.O., **Karrar A.E.** and Abdel Rahim, A.H. (1980). An Outbreak of Bluetongue Virus in Sheep in the Sudan. **The Vet. Record** 106 (23) 481-482.

1. Eisa, M., **Karrar A.E.** and Abdel Rahim, A.H.(1979). The Occurrence of Antibodies to Parainfluenza Virus in Sera of Some Domestic Animals of the Sudan. **British Veterinary Journal.** 135:192 – 197.
2. Eisa, M., **Karrar A.E.** and Abdel Rahim, A.H. (1979). Incidence of Bluetongue Virus Precipitating Antibodies in Sera of Some Domestic Animals in the Sudan. **Journal of Hygiene, Cambridge.**83: 539 – 545.

## Forensic Medicine

43. Aradaib, I.E.; Kabour ,M.; **Karrar, A.E.**; Ibrahim, K.E.; Cortopassi, G.A.; Osburn, B.I.; Cullor, J.S.; 1998. Application of nucleic acid amplification technology for detection of ruminant-derived contaminants in animal feed concentrates. **The Sudan Journal of Veterinary Science and Animal Husbandry** 37: 13-26.

44. Aradaib, I.E.; **Karrar, A.E.**; Ibrahim, K.E.; Cortopassi, G.A., Osburn, B.I.; Cullor, J.S.; 1998. Specific identification of sheep meat or sheep-derived products based on ovine mitochondrial cytochrome-b genome sequence analysis. **The Sudan Journal of Veterinary Science and animal husbandry** 37: 105-112.

5. Aradaib, I.E.; Cortopassi,G.A.; **Karrar, A. E.**; Ibrahim, K.E.E.; Karrar, A.E.; Osburn, B.I.; Cullor, J.S. 2001. Specific identification of goat meat or goat-derived products using mtcyt-b PCR amplification technology. **Journal of Science and Technology** 1 (1): 1-12.

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