



الأكاديمية البحثية والعلمية
ACADEMY OF SCIENTIFIC RESEARCH
AND INNOVATION

THE 8TH INTERNATIONAL CONFERENCE

Egypt's Vision For COP 27:
The Role of Animal Health
in Egypt's National
Climate Commitments

"Healthy Animal for Sustainable life "

13th October
2022





Prof. Mohamed Othman Elkhosht

President of Cairo University



Prof. Iman Bakr Shaheed

Dean of Faculty of Veterinary Medicine

Cairo University

Conference Chairwoman



Prof. Mahmoud Sakr

President of Academy of Scientific Research

Organization Committee



Conference chairwoman

Prof. Iman Bakr Shaheed

Dean of Faculty of Veterinary Medicine, Cairo University



Conference convener

Prof. Adel Khalil Ibrahim

Professor of Veterinary Clinical
Pathology, FVM, CU



Conference Secretary

Prof. Manal Mostafa Zaki

Professor of Animal, Poultry, and
Environmental Hygiene, FVM, CU

Executive Team



Dr. Alaa Mohamed Ali

Lecturer of pathology, FVM, CU



Dr. Engy Taha Bayomy

Lecturer of Aquatic Animal Medicine
and Management, FVM, CU



Vet. Ghada Mohamed Khalil

Assistant Lecturer of Clinical
Pathology, FVM, CU



Vet. Salma Waheed Abdelhaleem

Assistant Lecturer of Clinical
Pathology, FVM, CU



Vet. Yasmeen Hamed Asfour

Demonstrator of Clinical Pathology, FVM, CU

CHAIRPERSONS

(SESSION 1)

Prof. Magdy Ahmed Ghoneim

Professor of Biochemistry and Molecular Biology,
Faculty of Veterinary Medicine, Cairo University.

Prof. Diea Gamal Eldien Abo El-Hassan

Professor of Infectious Diseases,
Faculty of Veterinary Medicine, Cairo University.

Eng. Hesham Hegazi

President and CEO
Perfect Consultancy & Project Management Company.

**Dr. Donya Ahmed
Hassan**



**Dr. Donya is an Economic Consultant at Perfect
Consultancy and Project Management Company**

The Road to COP27

Why is Egypt's COP27 particularly imp, what does Egypt hope to achieve

Abstract

The Presentation discuss the essence of the climate change challenges, adoption and mitigation techniques, while shedding the light on Egypt.

The presenter discuss the origins of COP, important milestones, and what the world expects of COP12.

The Presentation will then showcase Egypt's vision of COP27 of climate change and sustainability in general.

Dr. Mohamed Abdel Monem



Dr. Mohamed Abdel Monem is a senior advisor for land and climate change at the Regional Office for the Near East and North Africa of The Food and Agriculture Organization of the United Nations (FAO) from 2016 until now.

He is former staff of the United Nations Environment Program (UNEP), worked as Regional Team Leader for the Ecosystem Management in the Regional Office for Africa, UNEP in Nairobi, Kenya for 11 years from 2003 to 2014.

His professional experiences include **working** as Natural Resources Management Specialist with the International Centre for Agricultural Research in the Dry Areas (ICARDA) for 7 years and as a soil scientist with the University of Nebraska working with USAID project in Morocco from for 4 years 1986 to 1990.

Dr. Abdel Monem is a professor of land and water management.

His education background includes a PhD from Colorado State University, USA.

Climate change impact on the agrifood system in Egypt: possible role of Climate smart agriculture (livestock)

Abstract

The Agrifood system in Egypt is a major source of livelihood for more than half of the population, employing close to 30 % of the labor force. However the system is facing challenges of water scarcity and limited land with the ever increase in population.

Egypt is vulnerable to climate change. With increasing temperature and unstable precipitation in addition to sea level rise and its current and expected impact on the soils of North Delta are posing considerable risks to food and livelihood security that depend on agriculture.

Egypt's vision for 2030, the Sustainable Development Strategy (SDS), and other national policy documents recognize the adverse impact of climate change on water resources and calls for adaptation and mitigation measures to address climate change

Climate-Smart Agriculture (CSA) is an approach that helps guide actions to transform agrifood systems towards green and climate resilient practices. It aims to tackle three main pillars: sustainably increasing agricultural productivity and incomes; adapting and building resilience to climate change; and reducing and/or removing greenhouse gas emissions, where possible.

Climate smart livestock principles and practices provides opportunity to addresses impact of climate change on livestock and suggest adaptation and mitigation measures. Some of practices that farmers already implementing should be evaluated from the lances of climate change and be upscale at wider scale for sustainable livestock system in Egypt.

CHAIRPERSONS

(SESSION 2)

Prof. Hussein Mohamed Omar

Professor of Parasitology, Faculty of Veterinary Medicine,
Cairo University.

Prof. Taher Ahmad Baraka

Professor of Internal Medicine, Faculty of Veterinary
Medicine, Cairo University.

Prof. Mohamed Moawad Ali El-Bahy

Professor of Parasitology, Faculty of Veterinary Medicine,
Cairo University.

Prof. Adel khalil Gohar



Dr. Adel is a professor of Clinical Pathology, Consultant of Biotechnology Laboratory. He is a director for Many Molecular Diagnosis Laboratory, Global Goodwill Ambassador, Vice editor-in-chief -Infectious Diseases Research journal, member in national committee of biotechnology and Genetic engineering. For 30 years, he is a clinical pathology specialist and molecular diagnosis of genetics and infectious diseases, in last 20 years, he has been responsible for a lab setting and the establishment of lab examinations using PCR, Real-Time PCR, Capillary sequencing, and recently, NGS sequencing in Gulf laboratories and Egypt. Moreover, he spent 18 years working in genetic testing and selection of embryos using PGD in the Egyptian IFV-ET center, which had allowed him to analyze all pedigree data efficiently and identify the presence of any genetic problems to calculate risk involvement and to evaluate the pattern of inheritance. Additionally, he was head for the laboratory part of the AstraZeneca project in Egypt for testing and reporting EGFR mutations in FBPE & CF-DNA in 3000 lung cancer Egyptian patients. He routinely Collect and validate the results of the analyses, Make decisions (action and corrective actions) planning of trends shared by enhancing production elements and SOP development and SOP modification, and be as accurate in my QC as it comes.

Global warming: impacts on animal health

Abstract

Based on significant and accelerated climate changes and consequent deleterious effect on both animal health and animal economy. Animal affected by increase in greenhouse gases but they may play role in raising up Methane (CH₄) that has both human and natural sources, and levels have risen significantly raising livestock. Wildlife in Africa will be greatly damaged due to climatic changes where both wild dogs and elephant seriously at risk Mediterranean sea turtles need immediate inference. On changing geographic zones and move to new area that make changes in epidemiological disease frequency specially those insect borne diseases. Direct risk in Egyptian wildlife mainly coming to changes in wild migratory birds both time and destinations, risk of coral health and diminish area of coral in our sea shore risk of losing turtles in our sea water. Potential increase in cases of food poisoning as we as attention should be devoted to changes in vector-borne disease patterns in relation to climate change. For solving and make a plan expected national strategy for fighting against global warming in animals sector we have to focus on achieving sustainable animal we should targeted the following point with national controlled program aiming for **Reducing methane emissions** The most promising approach for reducing methane emissions from livestock is by improving the productivity and efficiency of livestock production, through better nutrition and genetics. **Genetic selection** based on species as Holstein Frisian more sustainable cows than other breeds so testing for genetic markers (STRs) should be highlighted for ensuring future efficiency of livestock production **Enhancing diet** many feed additive with special reference to those increase efficiency of unit production and raising up usage of low value diet. **Testing adapted animals for detecting cellulolytic organisms** in rumen content will give power to make bank of isolates will be helpful **Disease control** with increasing power toward both diagnosis and vaccination specially those helminthes and snail host due to changes in ecosystem. Enhancing a regional and national reservation programs by FAO. OIE and other organization including both migratory birds, turtles and coral support by research and solving problems facing such animals.

Prof. Hussein Mohamed Omar



Hussein Mohamed Omar is an emeritus professor at the Department of Parasitology, Faculty of Veterinary Medicine, Cairo University. His research interest is on parasite taxonomy, immune biology, pathophysiology, zoonoses and molecular diagnosis of parasitic diseases. He has published 77 papers. He joined international research projects in Germany, Britain, Spain, USA, Egypt and Saudi Arabia.

He has been awarded the state incentive prize in biological science, Egyptian Academy of Science and Technology (1994).

Dr. Omar is a peer-reviewer for international and local journals and active member in several societies of parasitology and related fields. He has been visiting professor at Ohio State University and Texas A&M and adjunct professor at Al-Qassim University, Saudi Arabia.

Climate Impact to Geo-and Bio-helminth Parasites of Medical and Veterinary Importance

Abstract

Our planet's warming is increasing and threatening many ecosystems everywhere. As the global temperatures continue to climb, it raises confusion to the relationship, prevalence, and spread of parasites and disease.

Egypt is highly subjectable to water scarcity, droughts, rising sea levels, and other adverse impacts of climate changes, of these, gradual or pulse rise of temperature. Such adverse changes affect helminth parasites (Geo- or Bio-helminths) and their different hosts.

Warming can alter a parasite's life cycle, limit the range of suitable host species, or even impair the host's immune response. However, not all pulse heat events will cause the same response. What may benefit a particular helminth parasite or host in one ecosystem can be detrimental in another.

The extrinsic incubation period of helminth species in the soil (Geohelminths such as ascarids and trichurids) or within the invertebrate intermediate hosts or in the vertebrate paratenic host (Bio- helminths, as spirocercan and acanthocephan) will be greatly affected.

Some invertebrate intermediate hosts can withstand and adapt themselves with environmental changes like the ants (Hymenopteran vectors) others, severely affected as beetles (Coleopteran vectors) or fail to keep larval stage developing as soil mites (Acarine, cryptostigmin vectors).

Other vertebrate hosts (Paratenic hosts, mammalian, or non-mammalian) may also be affected and consequently disease dispersion should be variable. Species from different classes of helminths, namely trematode, cestode, nematode and acanthocephalan worms will be dealt with.

From above, it is clear how climate change, has the capability to drive helminth parasites of animal and human worldwide.

Prof. Taher Ahmad Baraka



Dr. Taher Ahmad Baraka is a full Professor of Internal Medicine at Department of Medicine and Infectious Diseases, Faculty of Veterinary Medicine, Cairo University. He was born in Giza (Egypt) on January, 1, 1968 and received his Veterinary Medical Degree at Faculty of Veterinary Medicine, Cairo University in 1990, Master (1995) and Ph.D. under co-supervision with VFU, Czech Republic (2002) in Veterinary Sciences. During Ph. D. graduation he had a scientific mission to OARDC,

Ohio State University, USA (2000). He was appointed to Assistant Professor in 2007 and Professorship in 2012 in Cairo University. He was appointed to many academic positions and units' supervision. He shared as PI of two Research Projects and Co-PI of another one, and all financially supported by Cairo University Research Sector. He created Research Laboratory of Rumenology in his department (since 2007 and current), and achieved several theses and published papers. He prepared a proposal for four teaching programs (Occupational Certificate, Diploma and Master degree of farm animals, equine, camel and pet animal Veterinary Medicine). He has authored and co-authored several peer reviewed researches in International and local journals. He is a reviewer in Scientific Committee for Graduation of Assistant Professors and full professors in Animal Medicine Specialization, Supreme Council of Universities in Egypt. He has a membership with several scientific professional organizations and associations. He has invited as a speaker for several international and local scientific conferences. He has supervised many Master and PhD Theses. He is former Head of Department of Medicine and Infectious Diseases 2018 to 2021, and now is the Head of Internal Medicine sector in the same department, and Scientific Coordinator of three under graduate and four post graduate courses. He has published books in Camel Medicine, Equine Medicine, General Medicine and Animal Medicine.

Studying the gap in processes of converting productive ruminant herds into sustainable ruminant herds

Abstract

Ruminant herds' production of meat and milk provide an important source of protein and other nutrients for human consumption. Global require is expected to increase by 73% and 58%, respectively, by 2050 compared with 2010 levels, due to continuous expansion of the world population.

Elements of sustainable animal production systems can be summarized as: 1) Resource efficiency use of nonrenewable resources and, whenever possible, substituting local renewable resources for those imported from outside the farm; 2) Profitability; 3) Productivity; 4) Environmental soundness; 5) Social viability. A sustainable ruminant production of milk and meat system is comprised of three different, but intersecting, pillars: social responsibility, economic viability and environmental stewardship. True sustainability is a balance of these three aspects.

Rumen which is main factory for utilization of feeds into milk and meat in ruminants should be kept working perfectly by keeping normal ecology and relationship between bacteria, ciliates and fungi. Bacteria have fermentative properties and producing propionic, putyric, acetic volatile fatty acids, methane, CO₂ and hydrogen. While rumen ciliates: 1) constitute about 50% of rumen biological population; 2) Represent about 20% of gained protein by the host with digestibility at the abomasum of 91%; 3) Detoxify the toxins of poisonous plants and eliminate some toxins out of the digestive tract; 4) Stabilize the number of Streptococci to reduce the produced harmful lactic acid; 5) Entodinium types of ciliate protozoa digest starch and protein to produce the amino acids which are essential for bacteria and protozoa.

Methane emissions in dairy cattle represent values from 26 - 497g/day; in beef cattle 161 - 396 g/day; Dairy ewe 8.4 kg/head of CH₄ annually, sheep 22 - 25 g/day. It is also necessary to obtain data on CH₄ emissions from housing systems and manure management.

Strategies for mitigating methane emissions depend on: 1) Increasing animal productivity; 2) Animal breeding; 3) Nutrition (Lipids, Concentrates, Forages); 4) Rumen fermentation and microbiome manipulation Vaccines, 5) Early life programming; 6) Chemical inhibitors; 7) Algae; 8) Alternative [H⁺] sinks (nitrate); 9) Phytocompounds.

Recently, a shift from cattle to camel and goat farming can sustain milk production with lower inputs and methane emissions. More research should be applied to sustain efficient ruminant herd's production with minimal environmental hazard.

CHAIRPERSONS

(SESSION 3)

Prof. Salah Eldin Mesalhy Aly

Professor of Pathology, College of Vet. Medicine, Suez Canal University and Chairman, General Authority for Fish Resources Development

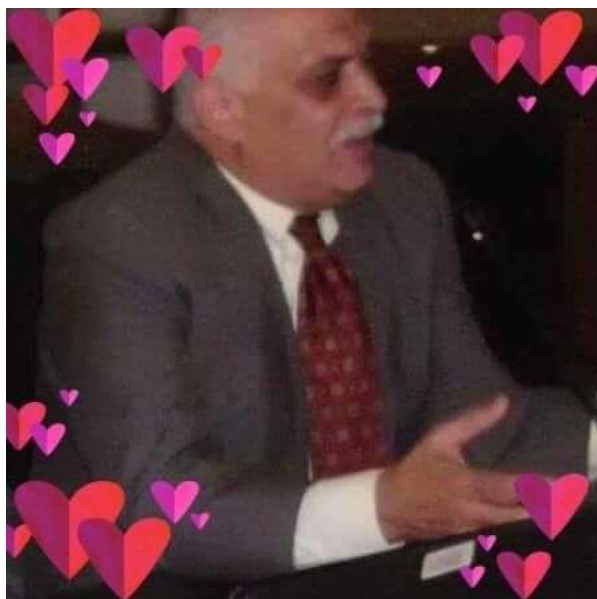
Prof. Ahmed Sayed Hamouda

Professor of Poultry Diseases, Faculty of Veterinary Medicine, Cairo University.

Prof. Fathy Farouk Mohamed

Professor of Nutrition and Clinical Nutrition. President of Veterinary Studies Sector Committee, Supreme Council of Universities. Former Dean, Faculty of Veterinary Medicine, Cairo University.

Prof. Ahmed Hamouda



Dr. Ahmed Hamouda is a Professor of poultry diseases Faculty of veterinary medicine Cairo university. He was graduated on poultry disease on 1983, Professor since 2000, member in world veterinary poultry association. Also he was in previous veterinary syndicate council, have long experience in management of poultry mega project in both regular and irregular weather condition.

Effect of climate change on the epidemiology of poultry diseases

Abstract

Climate changes are a big challenge for poultry production around the world as it will affect the whole production inputs including feeding and nutrition, management, as well as microbiome and even the ecology of avian pathogens which will alter epidemiological and the geographical distribution of the pathogen affecting poultry and threaten the poultry industry all over the world , that means the introduction of new production equipment and technological techniques in cooling and ventilation as well as the great need for recent medicaments and herbal products , recent generation of disinfectant and hygienic products and new generation of poultry vaccines and vaccination technology and programs. Innovation of recent immune enhancer to enable the birds to overcome and withstand the stressors due to climate change and minimize the use of antibiotics as immunosuppressant and avoid its residues which affect human health as hazard contaminating the human food is a must. In this presentation we shall discuss the effect of climate change on the avian pathogens and the modern methods to minimize its deleterious effect on poultry health for good and healthy protein source for the welfare of human.

**Dr. Mohamed Abdel
Hameed**



Dr. Mohamed is a lecturer at Department of Vet. Hygiene and Management Faculty of Veterinary Medicine, Cairo University. He is a Consultant for different water quality examination projects. He is a member of the Egyptian Veterinary Medicine Syndicate and the Egyptian Veterinary Association of Epidemiology.

Hygienic Methods of Waste Disposal

Abstract

Animal scientists are more concerned with the sustainable expansion of livestock production systems-whether they are producing meat, milk, eggs, or fiber-than they are with the wastes produced by the livestock business and the animals themselves. Livestock production involves animal mortality, and effective disease control strategies require efficient disposal of these mortalities. Various disposal techniques are employed globally based on the laws that are followed in various nations. Traditional disposal techniques include burying, burning, incineration, rendering, and composting are the most popular in developing nations. These techniques have some environmental, biosecurity, social, and economic problems. Due to the persistence of some infections, these disposal methods have environmental drawbacks such pollution of the air, soil, and water. Social issues with these conventional disposal techniques include the threat of odor and insect infestation as well as water contamination. Like this, the worrisome rise in the price of raw materials like kerosene, diesel, and wood for burning is linked to economic restraints. Other problems include the cost of labor and the availability of land.

CHAIRPERSONS

(SESSION 4)

Prof. Ashraf M Abu-Seida

Professor of Surgery, Anesthesiology, Faculty of
Veterinary Medicine, Cairo University

Prof. Ahmed Samir

Professor of Microbiology, Faculty of Veterinary
Medicine, Cairo University

Prof. Mona Ibrahim Elenbaawy

Professor of Microbiology, Faculty of Veterinary
Medicine, Cairo University

Prof. Ahmed Samir Mohamed



Dr. Ahmed Samir is a professor of Microbiology, Faculty of Veterinary Medicine, Cairo University. Director of Center of Biotechnology Researches and Services (CBRS), Faculty of Veterinary Medicine, Cairo University. Former Director of Center of Applied Analytical and Veterinary Studies (CAAVS), Faculty of Veterinary Medicine, Cairo University. He is a member of **Animal Resources and Fisheries Researches Council, American Society for Microbiology (ASM), Reviewer Board for Promotions of Professors and Assistant Professors, Egyptian Society of Microbiology and Immunology**. He is a consultant in **Police Academy (Ministry of Interior)**, veterinary sector and responsible for laboratory activities applied on police dogs and **National Co. for Animal Production (Armed Forces)**, veterinary sector. He is one of the **Specialized Scientific Councils** of the Ministry of Higher Education and Scientific Research. A ministerial decision **No. 582/2015**. and responsible for laboratory activities and the scientific research center.

Veterinary lab tests are necessity, not a luxury

Abstract

Veterinary diagnostic analyses are important services provide essential diagnostic tool for domestic and wild animals. Climatic changes may affect animal health as it does in human beings, resulting in many diseases and even epidemics. Laboratory diagnosis serves key roles in disease monitoring, clinical diagnosis and prognosis, as well as surveillance for diseases of consequence and epizootology and epidemiology. Veterinary labs should contain not only specified devices, but also expert personnel's and specific kits to follow standards (SOPs). Lab work usually includes disease outbreak investigation, routine monitoring, and biosecurity screening for a variety of infectious agents. Blood work including serology, CBC, organs function tests, parasite detection, histopathology, molecular techniques, bacterial culture and antimicrobial sensitivity testing are common investigations.

Dr. Mahmoud Hamdy



Bachelor's degree in veterinary medical sciences 2007, Specialized in pet medicine and surgery.

Studied at **European School for Advanced Veterinary Studies " ESAVS.**

Owner and **Director of Happy Pets Clinics** chain

Author of a book " fe bytna ota " - Dar Al-Shorouk.

Supervising Doctor of the **Egyptian Cat Club of the World Cat Organization CFA.**

Impact of climate change on pets

Abstract

Climate change is a serious cause of concern for animal health. It not only impacts an animal's general health but it also affects its size, build, immunity, behavior and adaptation to the surrounding environment. If not addressed, changes in the climate can exasperate any infection an animal may contract. In addition to the impact on the animal's health, its metabolism becomes disturbed and even disrupted. Consequently, aggressive mites that cause severe harm to the animal's health. When national economy is concerned, animal health directly impacts the country's resources and hence the economy. Animals are a pillar of the economic resources for individuals and governments alike. Effective and sustainable solutions must be created to address the impact of climate change on animal health and its adaptability.

المهندسة زينة عصام



مؤسس مبادرة شارع أليف

“حق الإنسان، حق الحيوان، حق البيئة المحيطة بهم”

مبادرة شارع أليف برعاية وزارة الزراعة و إستصلاح الأراضي لتحقيق التكافئ بين الإنسان و الحيوان و البيئة و رفع الوعي بخطورة تأثير التغير المناخي على الحيوانات الأليفة في الشارع المصرى و المواشى و بالتوازي تأثير التغير المناخي على الآفات و الزواحف و الحيوانات التى لا يستطيع الإنسان التعايش معها.

و وقف استخدام السلوكيات و الحلول الغير مستدامة تجاه الحيوانات و البيئة التى تتسبب فى زيادة أزمة انتشار اعداد الآفات و الزواحف و الحيوانات التى لا تستطيع التكيف مع الإنسان فى بيئته و لا يستطيع الإنسان التكيف معها و ذلك بسبب التغير المناخي و التدخل العمرانى البشرى فى مناطقهم الطبيعية و بيئتهم.

و بالتوازي تبدأ عملية التكاثر و التبويض و الخصوبة فى الحيوانات الأليفة التى تعد حد طبيعى نحتاجه بشدة فى ظل التغير المناخي و يقل التكاثر بشكل يصل ل ٤٠% مما يزيد إعاقة تحقيق مفهوم الصحة الواحدة و التوازن البيئى اذا استمر الإنسان بالتدخل البشرى الخاطئ مثل قتل الحيوانات المستأنسة فى الشارع و استخدام سموم