Agenda

"Enhancing Diagnostic Capacities of Chronic Respiratory Diseases in Sheep and Goat with Emphasis on Maedi Disease in the Middle East and North Africa)) "

Jordan University of Science and Technology (JUST)

Irbid, Jordan

14th -16th of March, 2023

Coordinator and PI of the Regional Workshop: Nabil Hailat, DVM, Ph.D.

https://us06web.zoom.us/j/88212276414?pwd=aDJIUXJpNWdjR3N6aXorMWZoaEJGQT09

Venue: Arabella Halls-Irbid-Jordan قاعات ارابيلا-اربد

Tuesday, March 14th

TIME	ACTIVITY	SPEAKER
10:00-10:30	Registration	
10:30-11:00	Opening Ceremony – 8 welcoming speeches, 3-5 minutes each	Dean of Scientific Research , **JUST** Representative of **Tunisia** Representative of **Egypt** Dean of Tiaret University, **Algeria** Representative of **Afghanistan** Ministry of Agriculture, **Jordan** Jordan veterinarians Association, **Jordan** Dean of the Faculty of Veterinary Medicine, **JUST**
11:00-11:20	Coffee and Tea Break	

Session 1:
Chair: His Excellency Dr. Mahmud Duwayri **Co-chair: Dr. Sihem Mansour**

11:20-11:40	Food Security	**Prof. Dr. Mahmud Duwayri**, Former Minister of Agriculture- **Jordan**
11:40-12:00	Jordanian Veterinary Services: Mission and Vision	**Dr. Amani Khudier,** Director of Veterinary Services, **Jordan**
12:00-12:20	An Overview on Ovine and Caprine Pneumonia in Egypt	**Dr. Tharwat Abdelatif Elshemey- Egypt**
12:20-12:40	Abattoir Study of Suppurative Pneumonia in Small Ruminants	**Dr. Chikhaoui Mira-Algeria**

12:40-01:00	Nasal Adenocarcinoma in Sheep in Tunisia, Diagnosis and General Management	**Dr. Sihem Hamdi Ep Mansour-Tunisia**
01:00-02:00	Lunch, Restaurant	
Session 2: **Chair: Dr. Chuck Dodd (USA, Guest)**		**Co-chair: Dr. Chikhaoui Mira**
02:00-02:20	Clinical Examination of Respiratory System in Small Ruminants	**Prof. Sameeh Abutarbush** Jordan University of Science and Technology (JUST)–**Jordan**
02:20-02:40	An Overview of Davis Thompson Foundation (D.T.F)-**online**	****Prof. Dr. Francisco Uzal-DTF**, University of California Davis, **USA**
02:40-03:20	Small Ruminant lentiviruses with Emphasis on Respiratory Form-**online**	****Dr. Javier Asin -DTF**-University of California-**USA**
03:20-03:40	Discussion	
7:00	**Group Dinner**	

****kind contribution and sponsored by of Davis Thompson Foundation (D.T.F).**

Wednesday, March 15th

TIME	ACTIVITY	PERSON RESPONSIBLE
Session 3: **Chair: Dr.Ibrahim Hassan**		**Co-Chair: Dr. Hemida Houari**
10:00-10:20	Differential Diagnosis Between Different Infectious Causes of Respiratory Tract Infection in Sheep and Goat	**Dr. Mohamed Ahmed Soltan-Egypt**
10:20-10:40	Veterinary Service in Afghanistan	**Dr. Tawfiq Hamidullah** –Ministry of Irrigation and Agriculture-**Afghanistan**
10:40-11:00	Ovine Pulmonary Adenocarcinoma in Tunisia (Sheep Pulmonary Adenomatosis):Clinical Findings, Diagnosis and Control-**online**	**Dr. Meriem Ben Abdallah- Tunisia**
11:00-11:20	Biosafety in Farm Animals	**Dr. Mahmoud Amayreh**, National Center for Agricultural Research and Extension (NCARE), Ministry of Agriculture-**Jordan**
11:20-11:40	Pathology and Seroepidemiology of Maedi Disease in in Sheep and goats in Jordan	**Prof. Nabil Hailat**, Jordan University of Science and Technology (JUST)-**Jordan**
11:40-12:00	Respiratory Tract Disorder of Sheep and Goats : Raising Awareness and Reducing The Risks	**Dr. Ibrahim Abdullah Hassan – Egypt**
12:00-01:00	Lunch, Restaurant	

Session 4: **Chair: Dr. Tharwat Elshemey**		**Co-Chair: Dr. Mohamed Soltan**
01:20-01:40	Epidemiology of PPR in Algeria 2011-2022 episodes	**Dr. Hemida Houari- Algeria**
01:40-02:00	Seroepidemiology of Maedi disease in the Middle East	**Dr. Qusai Alkhateeb-**Master Student **–JUST**
02:00-02:20	Verminous Pneumonia in Small Ruminants	**Dr. Rami Mukbel –**Jordan University of Science and Technology**- Jordan**
2:20-02:40	Discussion	
03:00	Bus back to Hotel	
	Dinner, in Yarmouk University Street	

Thursday, March 16th

TIME	ACTIVITY	PERSON RESPONSIBLE
Session 5: **Chair: Dr. Sihem Hamdi Ep Mansour**		**Co-Chair: Dr. Mohamed Soltan**
10:00-12:30	Discussion and Wrap Up, Path Forward and Certificate	
	Back to Hotel	

Prof. Nabil Hailat, the principle researcher gave an overview of animal diseases and their relation to respiratory diseases with emphasis on Maedi and food security, after he had had a welcoming speech. He also outlined the course of the workshop, the number of session and papers to be presented. He also presented the scientists from the different participating countries.

Dr. Hailat addressed the triangle of one health concept; human health, animal health and environmental health and link these subjects to starvation and poverty, unemployment and food security. Dr. Hailat also presented an overview on the importance of chronic diseases that affect the productivity of animals. He discussed also similar diseases with Maedi and proposed the importance of differential diagnosis and put control programs that leads to the reduction of the prevalence of animal diseases. Dr. Hailat also presented his views to the importance of capacity building and development of veterinary services and research, as well as increasing and empowering laboratory diagnosis of these diseases in the region. Below are some of the slides presented to show how the disease is transmitted.

Session 1:
Chair: His Excellency Dr. Mahmud Duwayri **Co-chair: Dr. Sihem Mansour**

First Day, 14th of March, 2023:


The first session was introduced by a lecture presented by his excellency the former Minister of Agriculture, **Prof. Dr. Mahmud Duwayri**,, about food security in the world with special reference to Jordan and the Arab region. He introduced some basic definitions related to food security such as food availability, accessibility and stability. He also introduced and discussed the global food security index. He mentioned that about 850 million people are suffering from hunger worldwide and 2 billion people do not receive enough and sustained food all the times. He also present future prospectus such as the potential increase in the world population from 8.7 billion to 9.9 billion by 2050 with 50% to 60% increase in the food needs. One of the food security is the food losses and the impact of climate change. It was estimated that about 2 billion tones of food are lost each year. In the Middle East and North Africa (MENA), they import about 36 million tons of food while the losses was estimated about 16 million tons.

Dr. Daewary discussed the potential options to improve the food security in the Arab world with emphasis on the natural animal and plant resources and uses of water and applying technology. He also presented the yield of wheat in the Arab world as shown in the table below.

Wheat grain yield (t/ha) obtained in demonstration fields (participating farmers) vs. control farmers' fields (nonparticipating farmers)
Average of 2014/15, 2015/16 & 2016/17 agricultural seasons

Country	Egypt	Iraq*	Jordan	Morocco**		Palestine	Sudan	Syria		Tunisia		Yemen
	I	I	R	R	SI	R	I	R	SI	R	SI	SI
Participating Farmers	9.06	4.90	2.76	3.89	7.18	2.44	4.13	2.08	5.65	2.97	4.62	2.98
Non-Participating Farmers	7.43	4.04	2.30	2.91	5.78	2.07	2.91	1.75	5.20	2.18	3.47	2.26
Average increase (%)	22	21	20	34	24	18	42	19	9	37	33	32
Maximum yield	9.98	5.80	3.63	5.38	8.03	3.30	6.21	2.67	8.10	4.71	6.45	4.56

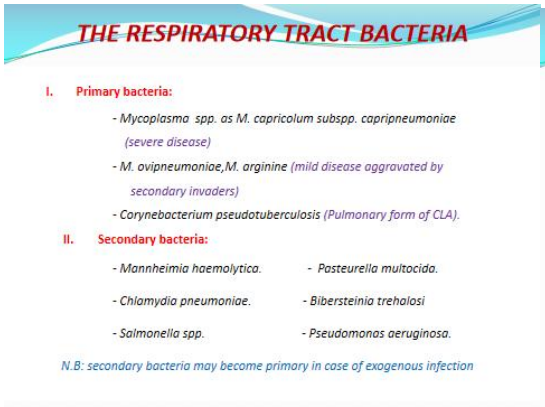
*Average of 2015/16 & 2016/17
** Av of 2014/15 and 2016/17
***R: Rainfed, SI: Supplemental Irrigation, I: Full irrigation

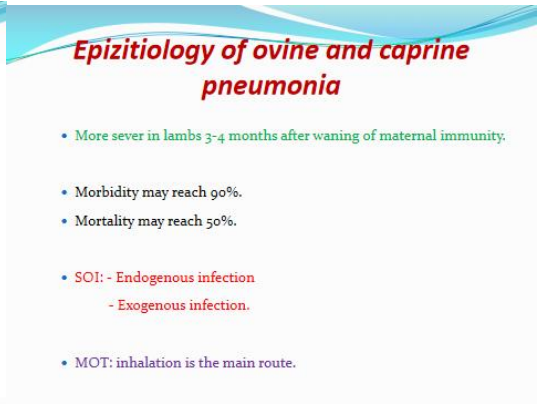
The second speaker was **Dr. Amani Khudier,** Director of Veterinary Services, Jordan and her lecture title was Jordanian Veterinary Services: Mission and Vision

Dr Amani talked about the vision, mission and the strategy for animal directorate including animal identification and traceability, improved productivity and enhanced veterinary services. Part of here presentation was about increasing the preparedness and immediate responses and reporting of animal diseases. Enhancing diagnostic and capacities in the laboratories for animal disease diagnosis was also another subject of discussion. In addition, it included the formation of different teams to meet these objectives. In addition, she stated that the need to investigate drug and pesticides residues in animal products. She also presented the role of the Ministry of Agriculture in Anti-Microbial Resistance and the concept of One Health Approach.

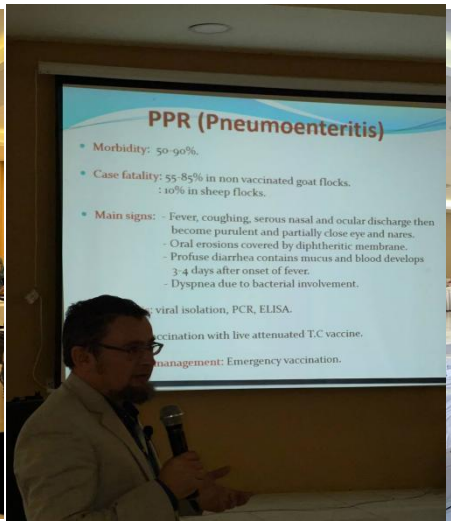
Dr. Tharwat Abdelatif Elshemey-Egypt presented a lecture entitled "An Overview on Ovine and Caprine Pneumonia in Egypt"

1. Ovine and caprine pneumonia constitute a major health problem in Egypt causing sever economic losses. Several etiological agents are involved. Ovine and caprine pneumonia is a multifactorial disease usually results from combination of two or more of the following agents: Stress factors(Weaning, Shipping, Changes in nutrition, Cold, Air draught, Overcrowds and ammonia production), Viruses (Acute: PPR,, OPI3V, ORSV, Adeno virus, Chronic (slow virus infections), Non oncogenic ovine retroviruses (SRLVS) (MVV, OPP, CAE), Oncogenic ovine retrovirus (ovine pulmonary adenomatosis), Nonspecific viruses: SP, BDV, BT., Bacteria (M. hemolytica, P. multocida and M.ovipneumonae).





Dr. Tharwat also discussed some of his publications and Egytians colleagues about bacterial respiratory diseases in sheep and goats (pasterullosis, Mycoplasmataceae, Mycoplasma capricolum subsp. capripneumoniae (Mccp), Enzootic pneumonia (Mixed infection, ORSV, OPI-3V, IBR, Caprine herpes virus, Adenovirus, Chlamydia pneumoniae, Pasteurella multocida, Mannhemia hemolytica, mycoplasma ovipneumonae, E.coli, streptococcus and pseudomonas). Then he discussed some pneumonia caused by viruses (Non oncogenic (small ruminants retroviruses)(SRLVs) (MVV, OPP, CAEV) (Maedi means short breathing), (Visna means wasting), Ovine pulmonary adenomatosis, Pulmonary form of caseous lymphadenitis) Then he discussed some parasitic pneumonias (Verminous pneumonia-Dicticaulus filaria,Upper Respiratory Tract (NASAL BOTS). Finally he discussed non specific pneumonias such as the ones caused by Sheep Px (SP), Blurtonge (BT), Border Disease Virus (BDV).



Dr. Chikhaoui Mira-Algeria, Institute of Veterinary Sciences University of Tiaret, presented a paper about **"Abattoir Study of Suppurative Pneumonia in Small Ruminants"**

In Algeria, sheep population is estimated to 28.69 million heads (FAOSTAT, 2018), which plays a very important role in the economy of the country. It is the first source of production of red meats followed by bovine, caprine, and camels at 60%, 30%, and 10%, respectively (MADRP, 2019). Even with such a large population, the country still cannot meet its growing domestic needs. Poor management, husbandry practices and diseases of varied etiologies are among the leading obstacles to sheep and goat production (Laoun et al., 2015). In sheep and goats, respiratory diseases are most frequent as air and blood are their main routes of transmission (Radostits et al. 2017). Chronic suppurative pneumonia is very common in small ruminants and frequently underestimated or treated insufficiently. Failure to recognize and treat early lesions allows suppurative pneumonia to be more important.The objectives of her presentation were:

1- To estimate the prevalence of suppurative lung lesions in sheep and goats in the Tiaret region,

2- To describe the gross and histopathological changes in ovine and caprine lungs,

3-To identify the causative bacterial agents.

In this study, lungs from 2846 local sheep and 570 goats were grossly examined for the presence of suppurative lesions. Samples from the lung and respective lymph nodes were routinely processed for histopathology according to (Suvarna et al., 2018). From 2846 slaughtered and examined sheep during the study, 444 (15.60%) had suppurative pulmonary lesions, isolated or in combination, of varying nature and severity.Studies conducted by Zahra et al 2022 in Libya, by Mahamud et al, 2017 in Iraq, and by El-Mashad et al, 2020 in Egypt indicated a prevalence of 14.2%, 25.7%, and 6.7% suppurative pneumonia respectively.Among 570 slaughtered goats, 21

(3.68%) showed suppurative pulmonary lesions.The obtained finding was lower than the results recorded by Al-Gaabary et al.(2010) in Egypt, 7.7% and by Mekibib et al (2019) in Ethiopia goats (17.11%). Our results agree with those obtained by Al Gaabary et al (2010) in Egypt.Bensaid et al (2002) in Tunisia reported rates roughly equal to ours.The prevalence is high in adult females because, in most herds, females intended for breeding are culled at the age of 4 to 5 years. This reform is activated even more if the females show a decrease in fertility or weight loss.

The present work revealed a low prevalence of suppurative pneumonia in goats in the Tiaret region (3.68%) compared with sheep. Our findings are lower than those recorded by Musa et al.(1998) in sudan 7.05% and by Al-Gaabary et al.(2010) in Egypt 10.7%. Low prevalence rate were reported by Cetinkaya et al.(2002) 1.1%. As a result of a lack of diagnostic tools, majority of the sheep and goats brought to the abattoir for slaughter may harbor chronic or subclinical infections which are rarely detected during antemortem examination (Mellau et al, 2010).
Figure below. Sheep. Lung. Confluent suppurative bronchopneumonia

Figure below. Sheep. Lung. Enlargement of the mediastinal lymph nodes several times its size (about 12 cm in diameter).

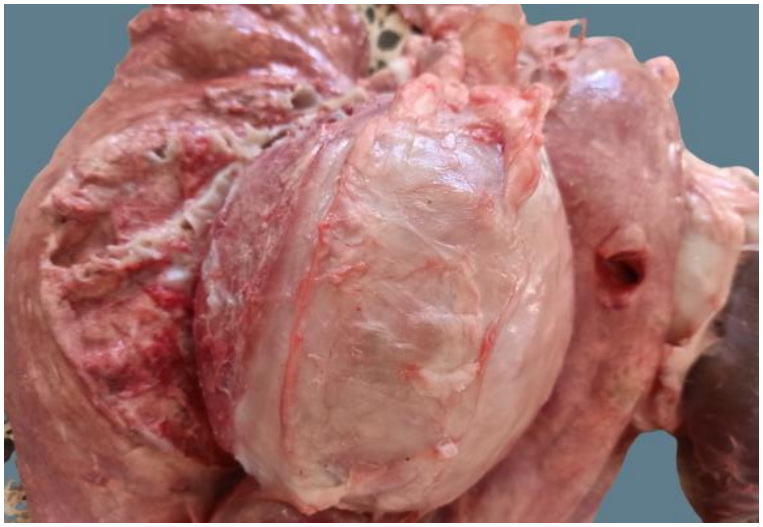


Figure below. Sheep. Lung. cut surfaces; left) scanty grayish-white pasty pus right) dry, laminated “onion ring” appearance

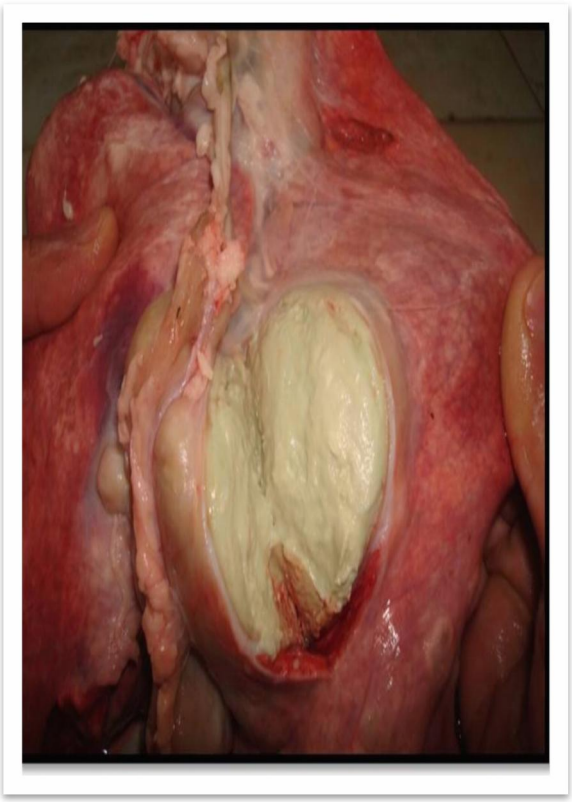
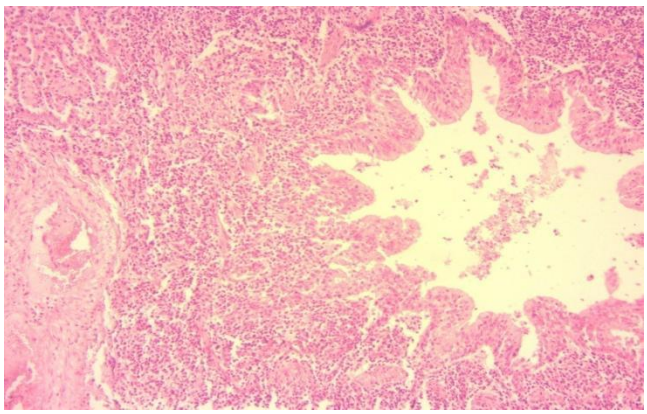


Figure 11. Sheep. Lung. Marked hyperplasia and desquamation of the bronchiolar epithelium with presence of cellular debris in the lumen (arrow) associated with heavy peribronchial inflammatory cell infiltration (astrix). (H&E)



Corynebacterium pseudotuberculosis causes caseous lymphadenitis, a predominant disease among small ruminants on farms. (Radostits et.al 2017).Visceral form is non clinically detectable but causes progressive weight loss and respiratory disorders. (Radostits et.al 2017).A rate of 25.13% percent of samples contained staphylococcus aureus; this can be due to the fact that the samples related to animals of different ages, and in particular to young animals, where staphylococci dominated (Al-Gaabary et al. 2009).E. coli (13.85%), Klebsiella pneumoniae (9.23%), Pseudomonas (7.18%) and Streptococcus (2.05%) are occasional specific pathogenic agents of the respiratory system, and may be pathogenic in secondary infections due to a decrease in immune defenses of the host.E. coli (13.85%), Klebsiella pneumoniae (9.23%), Pseudomonas (7.18%) and Streptococcus (2.05%) are occasional specific pathogenic agents of the respiratory system, and may be pathogenic in secondary infections due to a decrease in immune defenses of the host.The results of bacterial isolation in this study revealed the presence of various types of bacteria isolated from the affected lungs of small ruminants (Table 4). Our results are similar to those reported by Bensaid et al (2002) in Tunisia. These findings were not in agreement with Mahmoud et al. (2005) who found that, the main bacterial isolates in sheep and goats were Staphylococcus aureus (12 %).

Conclusion of her presentation:

In general, the current study unveiled that more than 15.60% of sheep and 3.68% of goats slaughtered at Tiaret abattoir were affected with Suppurative pneumonia.In Algeria, it is currently established that suppurative pneumonia exists with a fairly high prevalence which is the cause of significant economic losses. Pneumonia and other endemic diseases are preventable, better prophylaxis would certainly lead to a considerable increase in production.However, despite many efforts, our country does not yet have

professional veterinary infrastructures capable of giving the necessary impetus to animal production techniques and allowing the effective organization of animal health and public health programs.

Dr. Sihem Hamdi Ep Mansour- Tunisia presented a paper about "Nasal Adenocarcinoma in Sheep in **Tunisia,** Diagnosis and General Management"


Nasal adenocarcenoma is a Fatal sheep disease,well spead in Tunisia, caused by a retrovirus, nasal and sinusal adenocarcinoma, appear from the 2nd to 3rd years old. The first symptoms are weight loss, progressive weakness, moderated Nasal discharge, decreased appetite, dyspnea.The flow of exhaled air is modified through one or both nasal cavities.After some weeks, the symptoms are accentuation of respiratory dyspnea, mobilization of the nostrils, dilated nostrils and open-mouthed breathing (let pic below).



Asymmetrical forehead swelling, Increasing nasal discharge, protrusion of a mass from the nasal cavities are also seen (pic 2 right above). Unilateral exophtalmy, sero/mucopurulent nasal discharge, hemorrhagic nasal discharge (below).

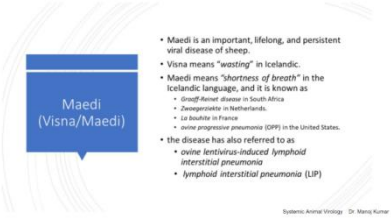
Estrosis **Meadi-Visna Chronic bronchopneumonia**

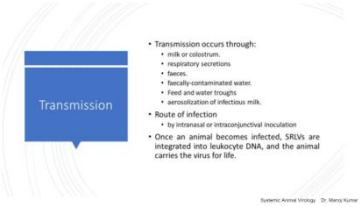
Adenomatosis

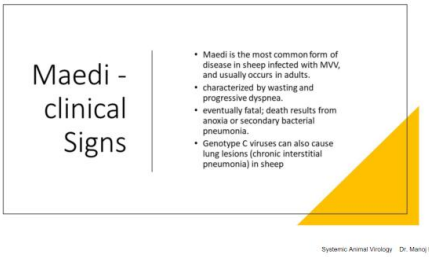
Session 2:
Chair: Dr. Chuck Dodd **Co-chair: Dr. Chikhaoui Mira**

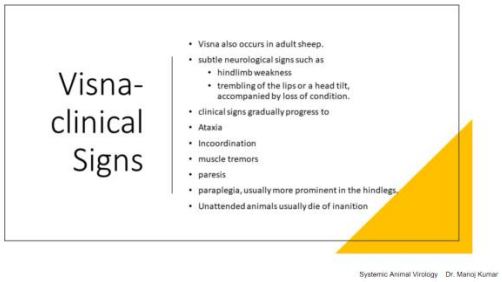
Prof. Sameeh Abutarbush Jordan University of Science and Technology (JUST)–**Jordan gave a presentation on "**Clinical Examination of Respiratory System in Small Ruminants" .Dr. Sameeh described the aetiology,

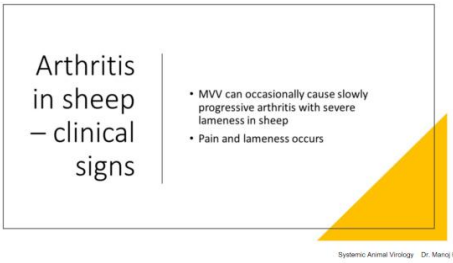
mode of transmission and clinical signs of Maedi disease and presented the differential diagnosis.



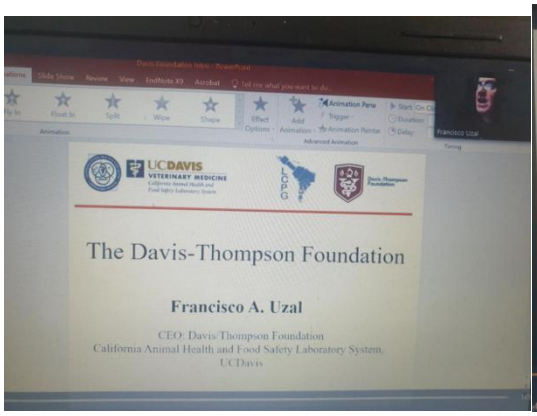




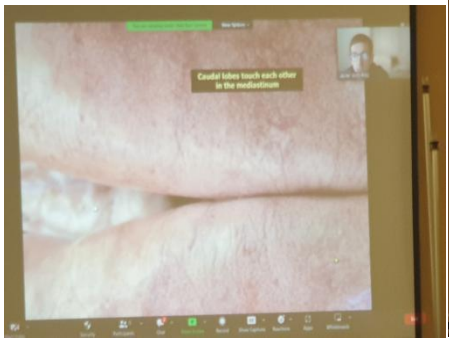


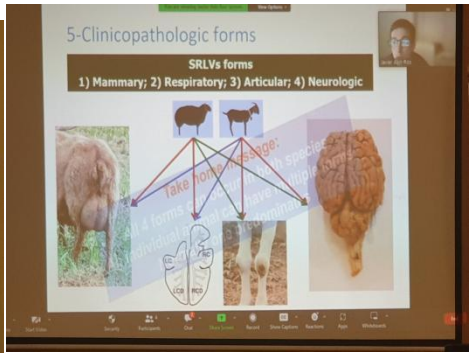


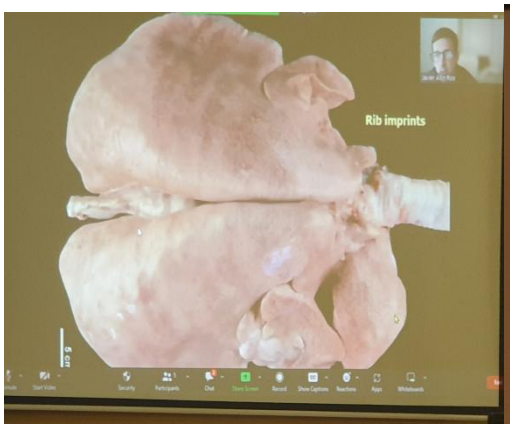
****Prof. Dr. Francisco Uzal- DTF**, University of California Davis, **USA, "**An Overview of Davis Thompson Foundation (D.T.F)-**online"** He is the CEO of the Davis-Thomson foundation, California Animal Health and Food Safety laboratory System. He presented an overview of the functions and collaborations inside USA and internationally. He said that it is non-profit organization with the aim to improve veterinary education and veterinary pathology. He described the history of the organization and the several symposia nd seminars that the foundation participated in.

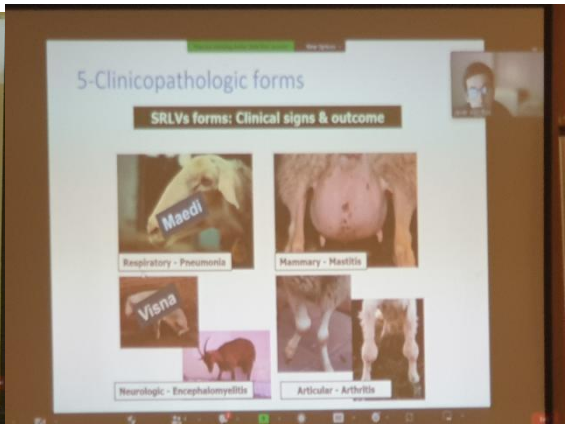


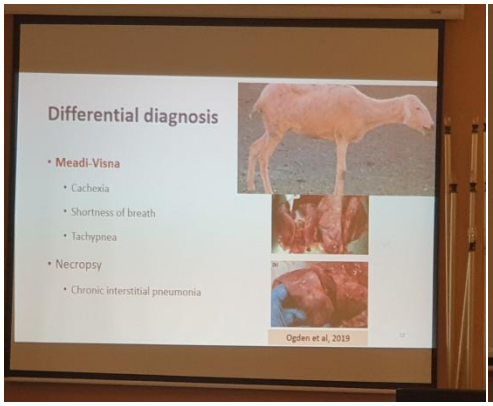
Dr. Javier Asin -DTF**-University of California-**USA,** Small Ruminant lentiviruses with Emphasis on Respiratory Form-**online.** He described the disease in term of epidemiology, aetiology, mode of transmission with great emphasis on pathology and diseases diagnosis. He also presented prevention and control measures and put forward some recommendations for the farmers.

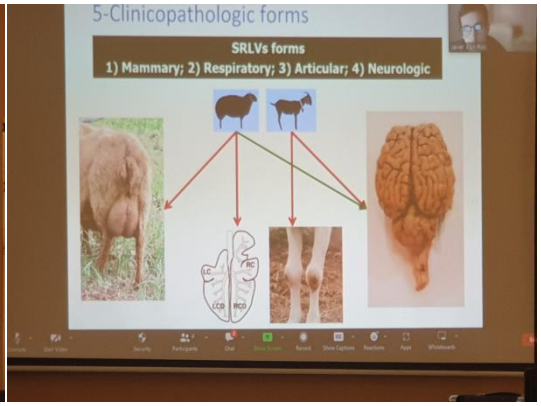










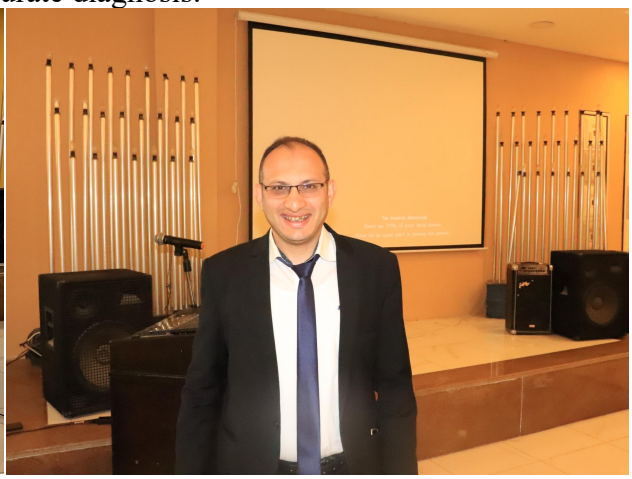


Wednesday, March 15th , 2023:

Session 3:

Chair: Dr.Ibrahim Hassan **Co-Chair: Dr. Hemida Houari**

Dr. Mohamed Ahmed Soltan-Egypt, "Differential Diagnosis Between Different Infectious Causes of Respiratory Tract Infection in Sheep and Goat" Dr. Mohamed presented 3 clinical cases with differential diagnosis and he concluded that laboratory confirmation is needed to reach accurate diagnosis.

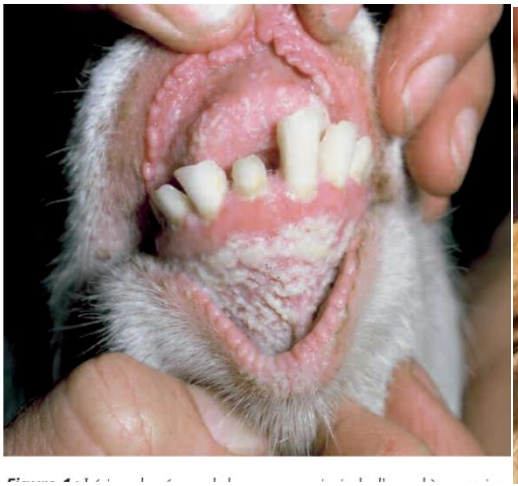


Clinical case 1

Contents

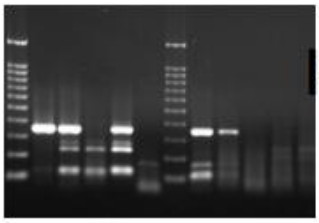
A goat flock in 2010 and sheep flock in 2012 complained from mortalities (table 1)

Case/Flock	Year	Total No. of animals	Morbidity rate%	Mortality rate%	Case fatality rate%
Goat flock	2010	15	93.3% (14/15)	93.3% (14/15)	100% (14/14)
Sheep flock	2012	700	21.4% (150/700)	21.4% (150/700)	100% 150/150

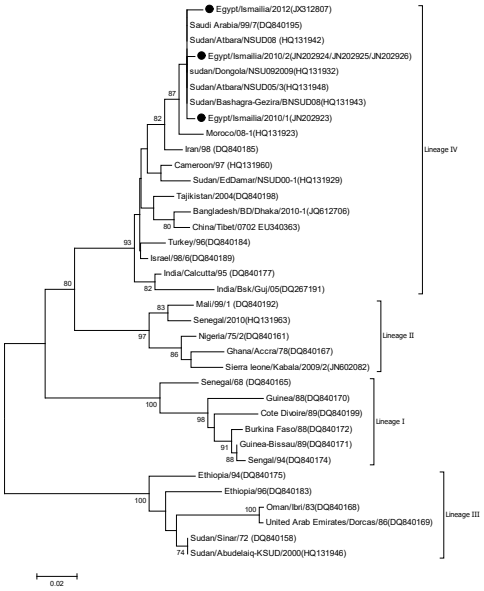


Samples collection and testing by RT-PC

Animal species	Year	Total No. of collected samples	Necrotic oral epithelium	Whole blood	Fecal samples
Goat flock	2010	16	4/6	2/6	3/4
Sheep flock	2012	22	5/10	2/6	3/6
total		40	10 (58.8%)	5 (38.5%)	6 (60%)



s testing by RT-PCR enough
For confirmation infection?



Infection, Genetics and Evolution 28 (2014) 44–47

Contents lists available at ScienceDirect

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journal homepage: www.elsevier.com/locate/meegid

Short communication

Emergence of peste des petits ruminants virus lineage IV in Ismailia Province, Egypt

Mohamed A. Soltan [a,c,*], Mohamed M. Abd-Eldaim [b]

[a] Department of Veterinary Medicine, Infectious Diseases Division, Faculty of Veterinary Medicine, Suez Canal University, Ismailia, Egypt
[b] Department of Virology, Faculty of Veterinary Medicine, Suez Canal University, Ismailia, Egypt
[c] Department of Biomedical and Diagnostic Sciences, College of Veterinary Medicine, University of Tennessee, Knoxville, TN, United States

Clinical case 2

- Goat flock owner complained from respiratory tract infection and PPRV infection. the mortality rate was 7%.

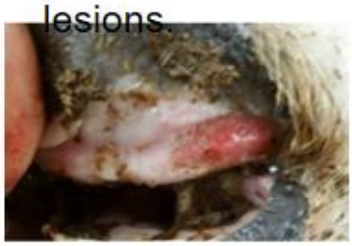
Clinical examination



What is your clinical interpretation?

Clinical case 3

- Sheep flock suffered from mortalities (5%) and respiratory tract affection. Clinical examination revealed severe oral lesions.

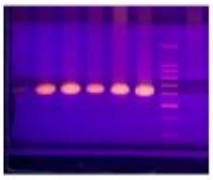


How can you deal with this case?

Sample collection and testing

Whole blood

- Real time PCR for BVDV.
- Real time PCR for PPRV



crusts

- Conventional PCR for Orfv

How can we differentiate between oral lesions in sheep and goats

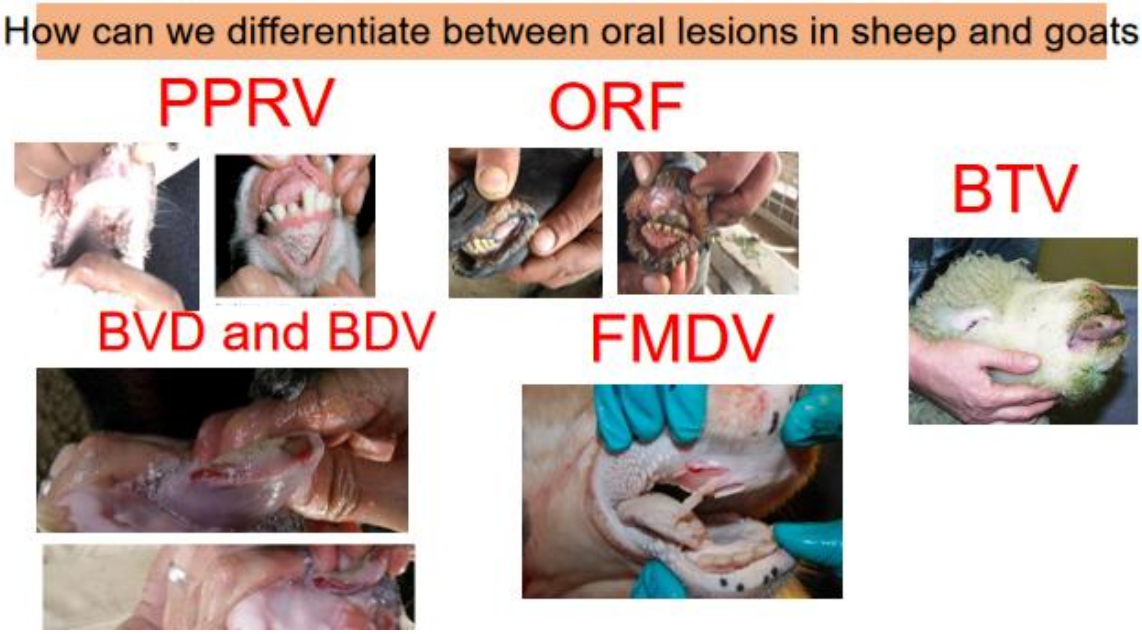
PPRV

ORF

BTV

BVD and BDV

FMDV



Laboratory diagnosis of CAPRINE ARTHRITIS/ENCEPHALITIS & MAEDI-VISNA

Method	Purpose					
	Population freedom from infection	Individual animal freedom from infection prior to movement	Contribute to eradication policies	Confirmation of clinical cases	Prevalence of infection – surveillance	Immune status in individual animals or populations post-vaccination
Identification of the agent						
Virus isolation	-	-	-	+	-	-
Antigen detection	-	-	-	+	-	-
PCR	+	+	++	++	++	-
Detection of immune response						
AGID	+	+++	++	+++	+++	+
CFT	-	-	-	-	-	-
ELISA	+++	+++	+++	+	+++	+
VN	-	-	-	-	-	+++
IFAT	-	+	-	-	+	-

Key: +++ = recommended for this purpose; ++ recommended but has limitations;

OIE Terrestrial Manual 2018

Dr. Tawfiq Hamidullah –Ministry of Irrigation and Agriculture-**Afghanistan,"**Veterinary Service in Afghanistan".

Afghanistan is a landlocked country highly dependent on Agriculture and Livestock raising; Total population about 34 million. 80 to 85% involved with Agriculture & Animal Husbandry. Mainly the Animal Health Department is dealing with Animal vaccination, Animal Vaccine production, disease control, diagnosis and treatment. Dr. Tawfiq presented an overview of the veterinary services administration and how it is linked to the Minister office and other Ministries and organizations in Afghanistan. He described the main division in the veterinary services, and the tasks and responsibility of each division;

Central Veterinary Diagnostic & Research Laboratory, Animal Vaccine Production Prevention and Animal Disease Control, Epidemiology, Quarantine and Veterinary Public Health. He also discussed the most prevalent animal and zoonotic diseases in Afghanistan. He mentioned brucellosis, Pest Petite Ruminants (PPR), Foot and Mouth Diseases, Lumpy Skin Disease, Anthrax, Sheep and Goat pox, and Rabies. He also emphasized the emergence of Congo-Crimean Hemorrhagic Disease (CCHF). He also discussed the prevention and control programs for the main animal diseases; FMD, PPR, Rabies and Brucellosis. Part of his talk was about the main challenges regarding capacity in the human resources, financial and laboratory diagnosis;

Challenges/Problems

1-CVDRL now has no source to help equipped,provid diagnostic kits and reagents

2- CVDRL equipped well for luck reagents consumable many activities stopped.

3-CVDRL staff need technical training but there is no donor to provide the training

4- CVDRL equipment's need maintaince but no sources to help

LIMS system need to develop but no source for it.

Request and Suggestion

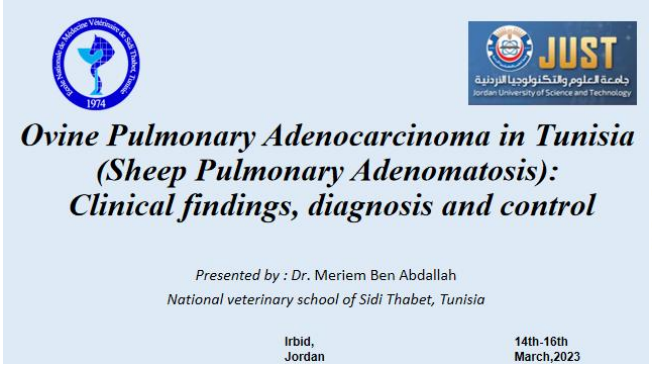
1-CVDRL staff need up to date with modern technology training.

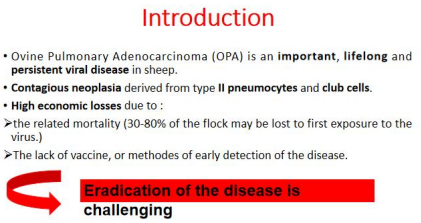
2-CVDRL histopathology need training.

3-We need training on GC,and MASS /HPLC/Malicular biology (PCR) AND AUTOMIC absorption

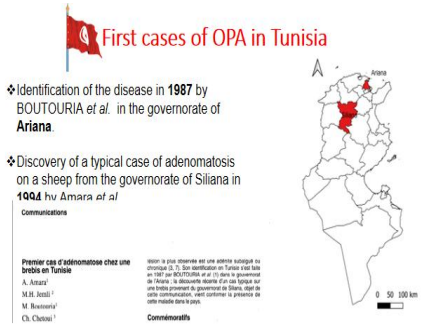
4- need our is reagent and diagnostic kits

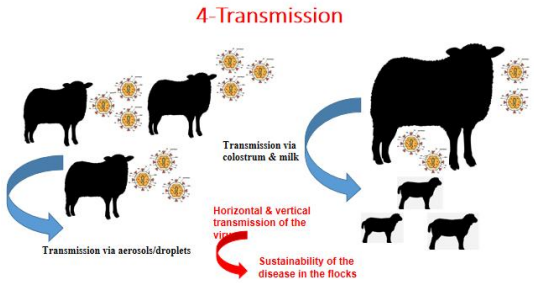
Dr. Meriem Ben Abdallah- Tunisia, Ovine Pulmonary Adenocarcinoma in Tunisia (Sheep Pulmonary Adenomatosis):Clinical Findings, Diagnosis and Control-**online**

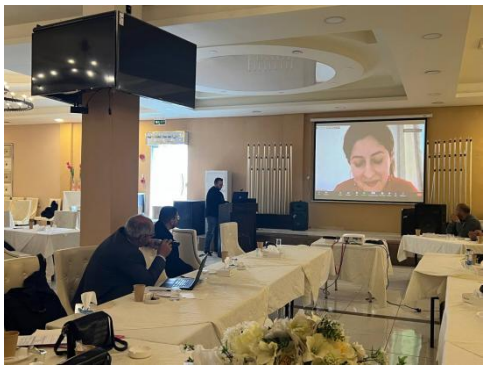




Dr. Meriem Described the following regarding the diseases;1-Etiology, 2-Species Affected 3- geographical distribution, 4-Transmission, 5-Clinical findings, 6-Diagnosis, 7-Control.







Disease generally in adult > 2 yeras-old (slow process)
Animals of either gender are affected.

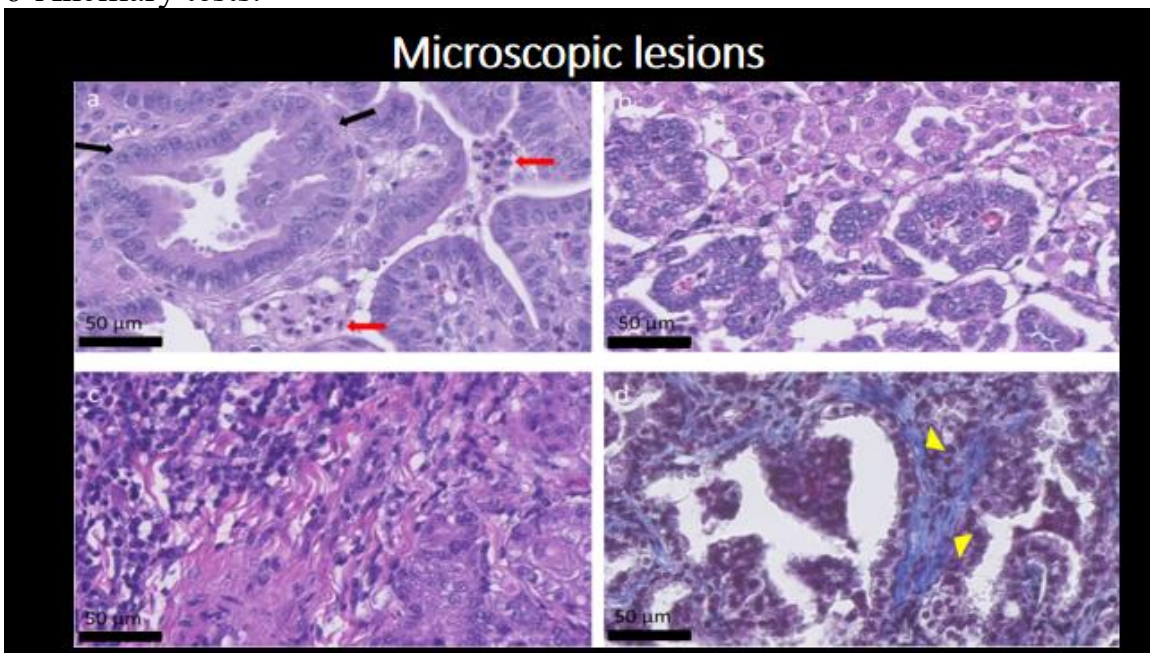
Clinical signs in sheep include:

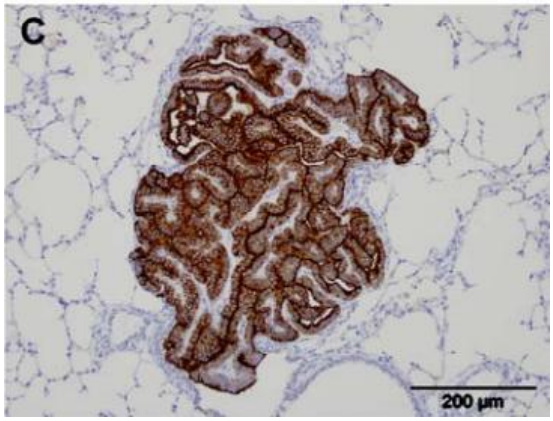
Dr. Meriem presented the clinical signs of the disease; weight loss and progressive emaciation despite a good appetite. Progressive dyspnea initially detected after exercise. Increased cases of pneumonia that fail to respond to antibiotics. Animals seen lagging behind the flock when gathered or handled. The gradual replacement of the normal lung with tumor tissue will increase respiratory difficulties. Clinical signs become deeper and more frequent, associated with:

Abdominal wall motions, Orthopneic posture, Dilated nostrils, Open mouth, Crackle sounds after the auscultation of the thoracic cavity, Severe nasal discharge (Wheelbarrow test).

1- Clinical diagnosis (Clinical signs & Wheelbarrow test).
2- Pulmonary endoscopy (bronchoscopy).
3-Imaging diagnosis (Ultrasound, radiography & computed tomography).

4-Pathological diagnosis (macroscopic & microscopic lesions)
5-Immunohistochemistry diagnosis
6-Ancillary tests.



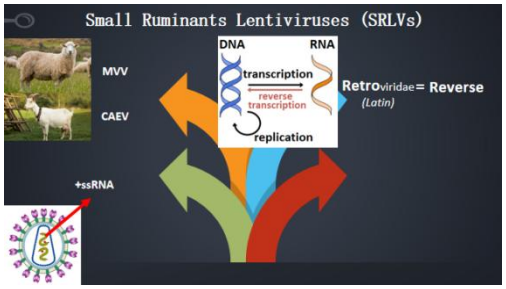


IHC using Ab specific and against the virus.

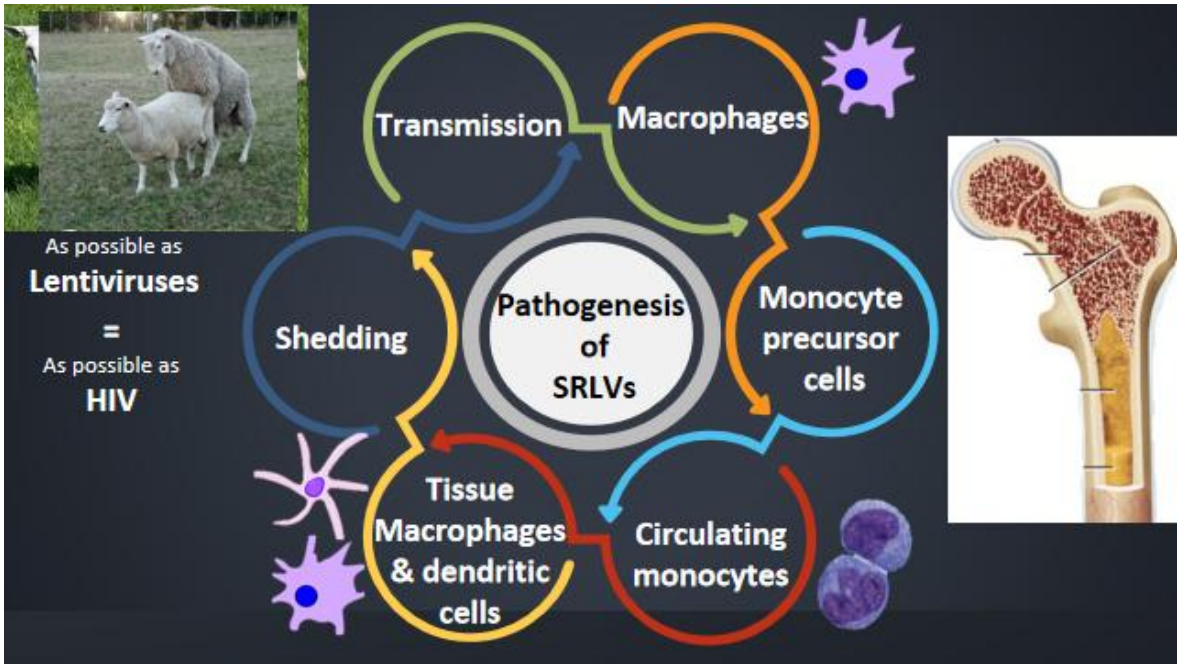
Differential diagnosis:
1- Maedi disease
2-Enzootic nasal adenocarcinoma
3-Chronic proliferative rhinitis in sheep
4-Caseous lymphadenitis
5- Hydatidosis
6-Verminous pneumonia

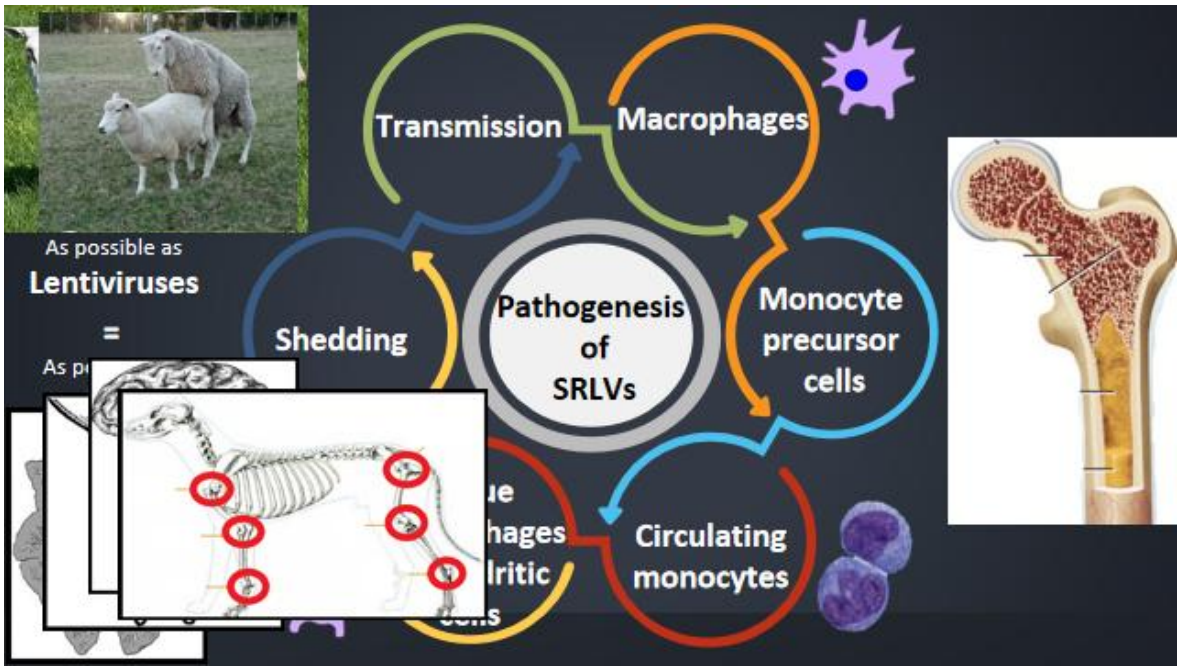
Prof. Nabil Hailat, Jordan University of Science and Technology (JUST)- **Jordan Pathology and Seroepidemiology of Maedi Disease in in Sheep and goats in Jordan**.

Dr. Hailat presented an overview about the cause of the diseaes and its importance to the farmers, then he presented his research work about Maedi-Visna in Jordan using different diagnostic techniques. He used Elisa for sere prevalence, histopathology, and PCR technology for disease diagnosis. The data is presented below.

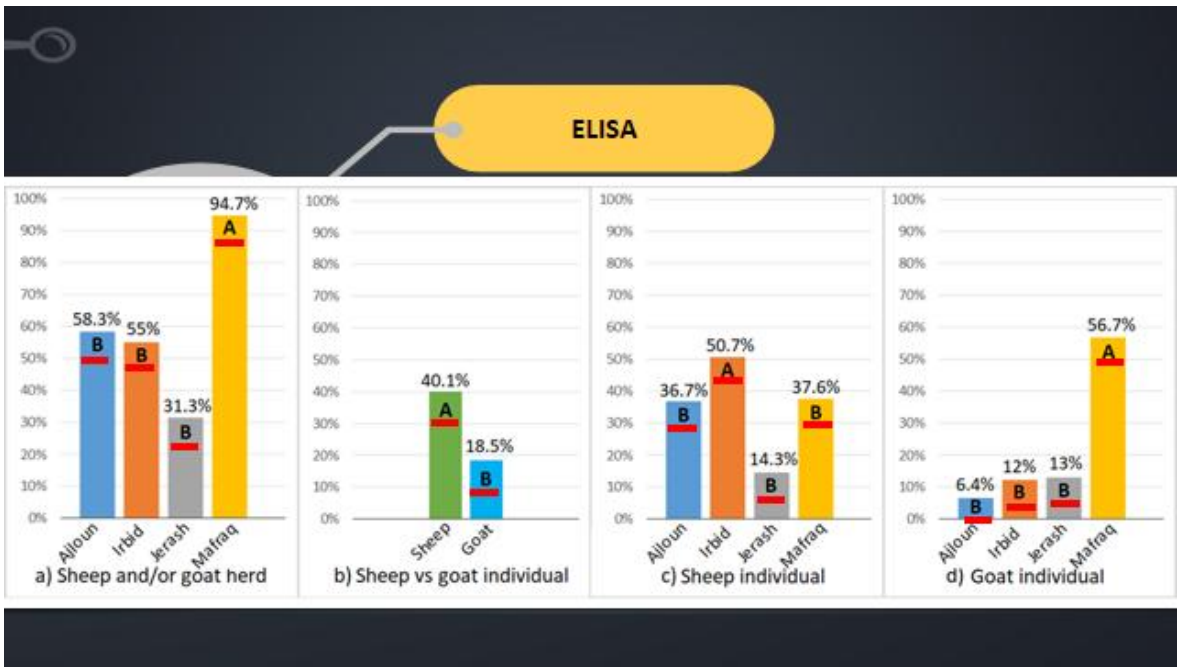


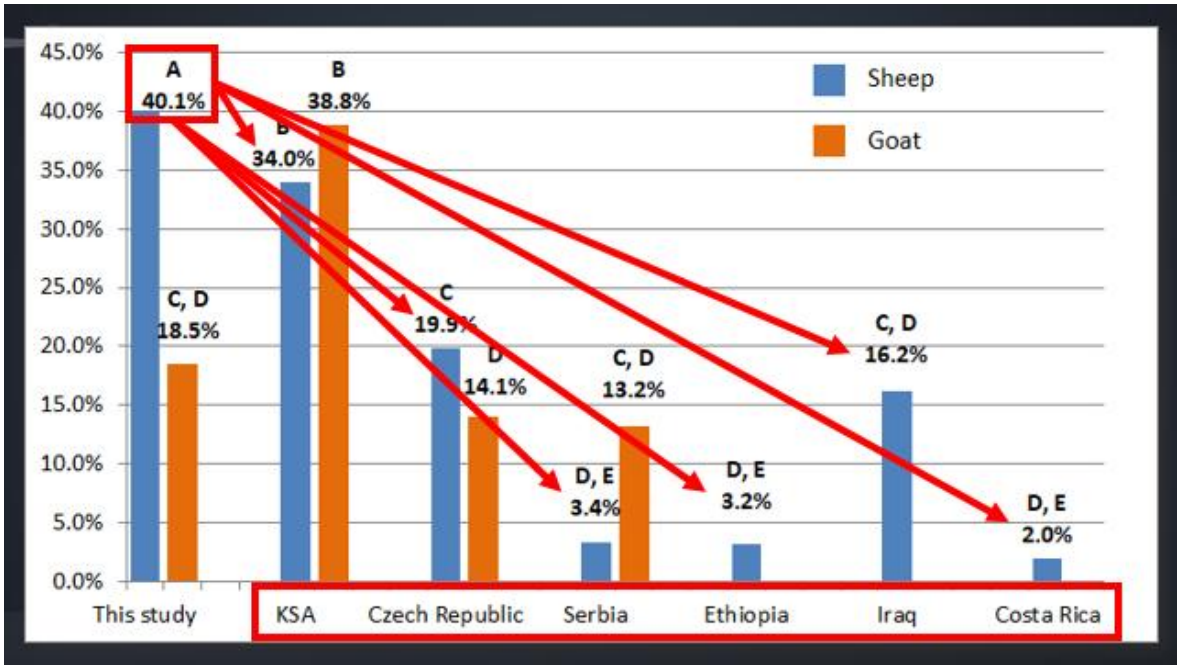
Maedi Visna Virus (MVV) clinical signs:
Dyspnea, Wasting and paralysis
Clinical presentation: Lung, Mammary gland, CNS
Lungs' pathology
Worldwide, economic cost


As possible as
Lentiviruses
=
As possible as
HIV
Transmission
Macrophages
Shedding
Pathogenesis of SRLVs
Monocyte precursor cells
Tissue Macrophages & dendritic cells
Circulating monocytes

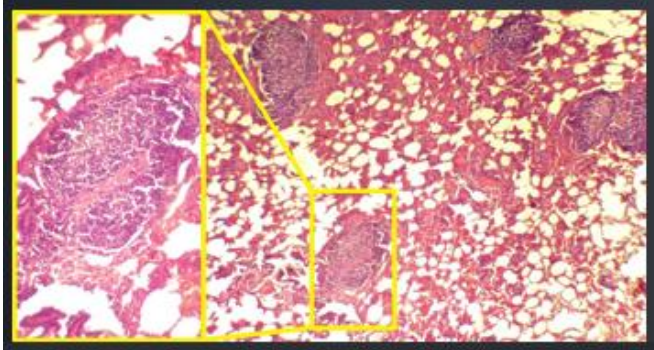

As possible as
Lentiviruses
=
Transmission
Macrophages
Shedding
Pathogenesis of SRLVs
Monocyte precursor cells
Circulating monocytes

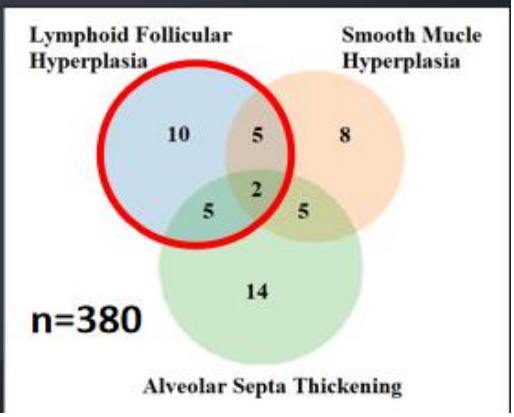

ELISA
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
58.3%
B
55%
B
31.3%
B
94.7%
A
Ajloun
Irbid
Jerash
Mafraq
a) Sheep and/or goat herd
40.1%
A
18.5%
B
Sheep
Goat
b) Sheep vs goat individual
36.7%
B
50.7%
A
14.3%
B
37.6%
B
c) Sheep individual
6.4%
B
12%
B
13%
B
56.7%
A
d) Goat individual


ELISA
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
58.3%
B
55%
B
31.3%
B
94.7%
A
Ajloun
Irbid
Jerash
Mafraq
a) Sheep and/or goat herd
40.1%
A
18.5%
B
Sheep
Goat
b) Sheep vs goat individual
36.7%
B
50.7%
A
14.3%
B
37.6%
B
c) Sheep individual
6.4%
B
12%
B
13%
B
56.7%
A
d) Goat individual



	Lymphoid follicular hyperplasia	Smooth muscle hyperplasia	Thickening of alveolar septa
Number of Samples	22	20	26
Percentage (%)	5.8	5.3	6.8



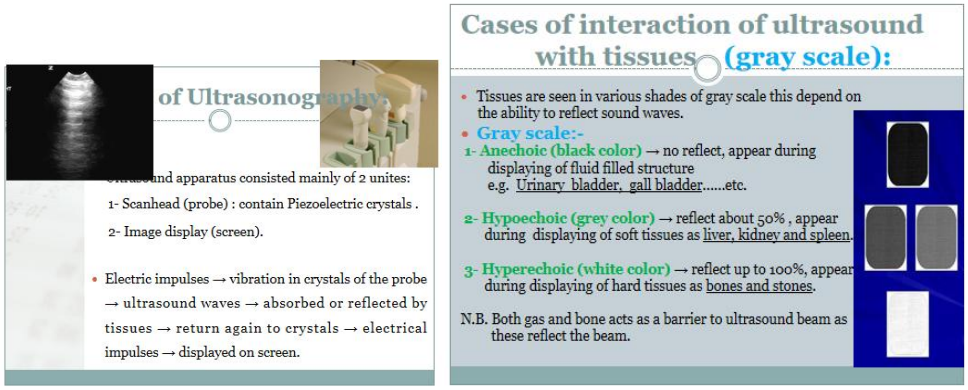


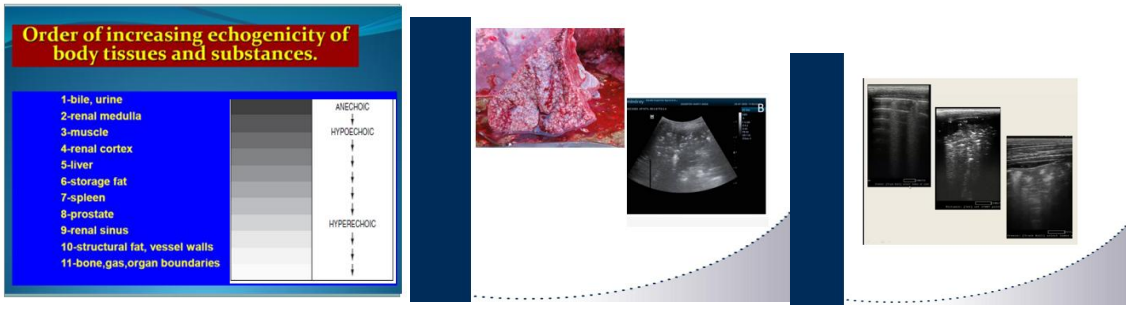
Conclusions and Recommendations

1- SRLVs seropositivity in sheep is of concern and urges the inquiry of the economic impact and the benefit of adopting eradication measures.
2. Mixed species herding was found to be the most alarming risk factor to consider in Mafraq.
3. Statistical analysis reveals a moderate agreement between nested PCR and Histopathology of sheep lung tissue.
4. A paper was also published in Veterinary World related to Meadi Disease in Jordan.

Dr. Ibrahim Abdullah Hassan –Egypt, Faculty of Veterinary Medicine, Alexandria University. "Respiratory Tract Disorder of Sheep and Goats : Raising Awareness and Reducing The Risks"
Dr. Ibrahim presented his experience using ultrasonography to diagnose chronic pneumonias in animals.

Chronic respiratory diseases:
1. Ovine progressive pneumonia (OPP).
2. Maedi-visna (MV).
3. Ovine pulmonary adenomatosis (OPA).
4. Pulmonary Caseous lymphadenitis(CLA).
5. Chronic suppurative pneumonia.





Session 4:

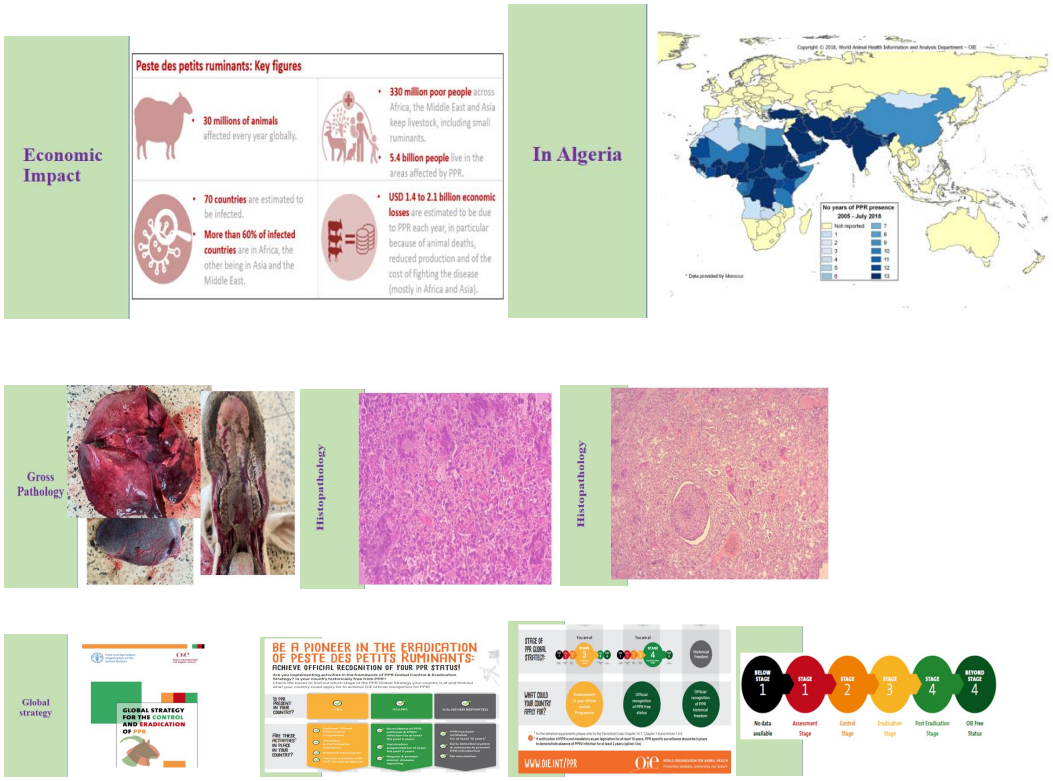
Chair: Dr. Tharwat Elshemey **Co-Chair: Dr. Mohamed Soltan**

Dr. Hemida Houari- Algeri, "Epidemiology of PPR in Algeria 2011-2022 episodes"

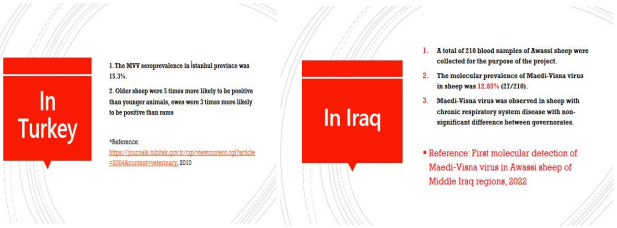
Morbillivirus of small ruminants = Peste des petits ruminants (PPR), is a disease that mainly infects sheep and goats , and some (wild ruminants). First time reported in Ivory Coast, 1942. PPR is on the WOAH list of notifiable diseases (limiting trade). Transboundary animal disease, according to (WOAH) and (FAO). Since its first identification in 1942 in Ivory Coast, PPR has continued to expand its geographical distribution beyond its original endemic region in West Africa.

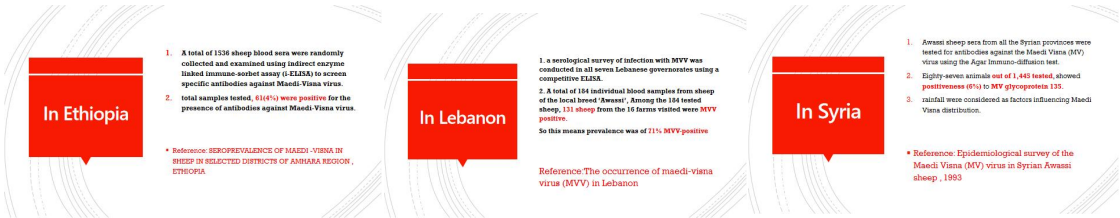
Indeed, a significant and dramatic geographic expansion of the disease has occurred over the past 15 years. Currently, about 70 countries have reported infection to the OIE or are suspected of being infected and another 50 are considered at risk of PPR. Among these infected countries, more than 60% are in Africa (including North Africa) the other infected countries being in Asia (Southeast Asia, China, South Asia and Central Asia / Western Eurasia including Turkey) and the Middle East. Until 2007 , the countries in Africa officially recognized as infected with PPR were those, with the exception of Egypt, located in the belt between the Sahara and the Equator. In 2007 , however, PPR caused heavy losses in the Republic of Congo, Uganda and Kenya. From this year, the disease gradually spread south to cover the Democratic Republic of Congo, Tanzania, Zambia, Angola and Comoros.

In North Africa, it successively affected Morocco, Tunisia and Algeria. It is estimated that 330 million poor people in Africa, the Middle East and Asia raise ruminants. Small ruminants, sheep and goats, play an important role in the food security of poor families. Small ruminants are important for small farmers = a source of milk, meat, dairy and meat products and wool. Raising small ruminants is a way to generate cash for expenses such as school fees, as well as a reserve (a mobile bank). There are approximately 5.4 billion consumers in the regions affected by PPR.



Dr. Qusai Alkhateeb-Master Student **–JUST,** Seroepidemiology of Maedi disease in the Middle East





Dr. Rami Mukbel –Jordan University of Science and Technology- **Jordan,** V"erminous Pneumonia in Small Ruminants"

Dr. Rami described and discussed the main clinical signs of three types of lung parasites in sheep and goats; diagnosis and treatment.

Trichostrongyloidea

Dictyocaulus spp-common lungworm or thread lungworm

largest lungworm: in upper airways

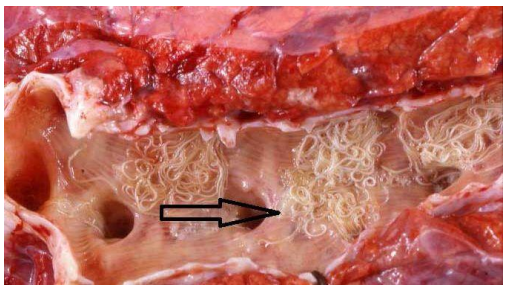
Metastrongyloidea-Protostrongylida

Protostrongylus spp.

smaller: in bronchioles, alveoli & parenchyma

Muellerius- hair lungworm

smallest: in alveoli



The clinical signs:

Cough, moderate dyspnea, and loss of condition

Lesions relate mainly to obstruction of the small bronchi by adult worms and filaria.

Anemia of undetermined pathogenesis

Secondary bacterial pneumonia are common.

Diagnosis:

Clinical signs & history

coughing, rapid breathing, dyspnea, bronchitis

herd problem affecting younger animals on pasture
Demonstrate L1 in fresh feces or sputum
sample animals affected longest time
Feces: Baermann method (or flotation in zinc sulfate)
differentiate from free-living contaminants or other lung worm larvae

Treatment

levamisole
extra-label: BZD, IVM (very effective against P. rufescens)

Above are some pictures for some of the participants from different countries receiving their certificates.

A group picture showing the active participants in the Maedi-Chronic Respiratory Diseases regional workshop.

----------End of the workshop----------