



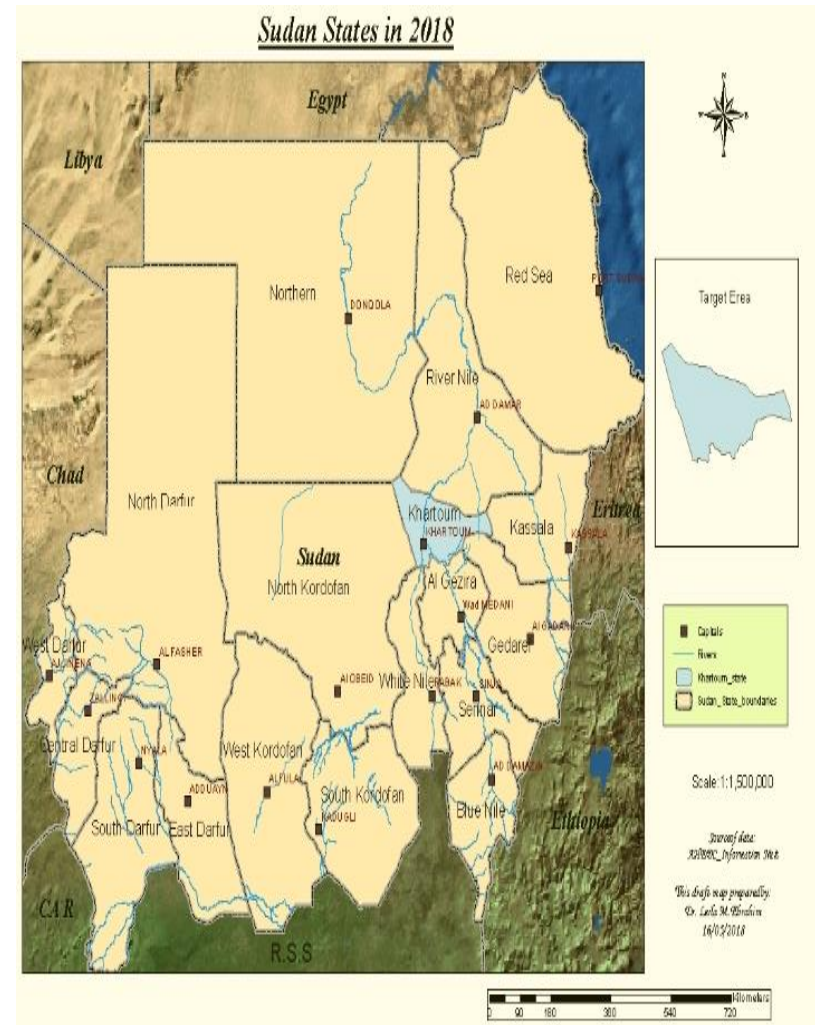
Fourth ERFAN CBPP Working Group Meeting
Contagious bovine Pleuropneumonia in Sudan
Presented by
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Presentation contents:

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Geographical background of Sudan

- ▶ Northeast African country.
- ▶ Bordered by :7 countries and red sea
Egypt to the north
red sea to the northern east
Eretria and Ethiopia to the east
South Sudan to the South
Central Africa to the southwest
Chad to the west
Libya to the northwest
- ▶ area:1,856,813 km²
- ▶ Population:45,957,317 million
- ▶ Livestock :130 million
- ▶ Cattle population:30 million



Central Veterinary Research Laboratory (CVRL) Soba/Sudan

Briefly information :

Central veterinary research laboratory is established in 1970.

Consist of 18 departments 4 out of them produce vaccines and 17 regional lab. follow to CVRL.

Staff of CVRL and regional lab. are 144 researchers (from assistant researcher to professors) and 461 technical staff.

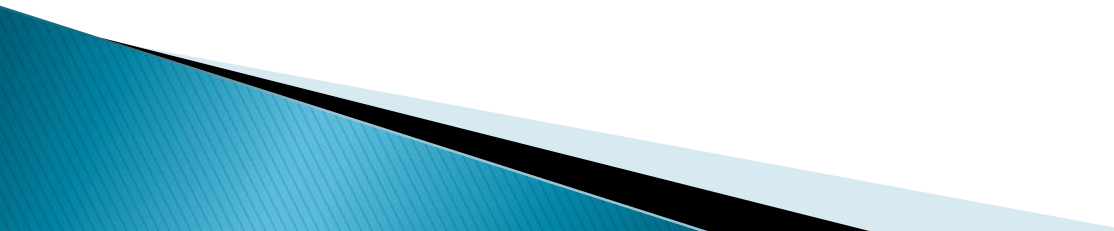
Aims of CVRL

- ✓ Diagnosis and scientific applicable research on animal diseases according to the research plan determined by central scientific committee.
- ✓ Research and Production of vaccines.
- ✓ Determine the economic impacts of epidemic diseases to go further in prevention strategies .
- ✓ Training of postgraduates and undergraduates veterinary colleges students

CBPP

- ❑ Contagious bovine Pleuropneumonia (CBPP) is considered as one of the most serious disease of cattle in the Sudan. It is caused by *mycoplasma mycoides* subspecies *mycoides* (Mmm). CBPP is the only bacterial disease of the List A of the OIE.
- ❑ Locally in the Sudan the disease is known as Abogneet. It is characterized by an insidious course and long incubation period.

Cont.

- ❑ The disease constitutes a threat to Sudan livestock export trade to foreign market. The real danger lies in the indirect losses, since many infected cattle partially recovered, they are usually emaciated and constitute a grave source of infection(carrier).
 - ❑ After rinderpest eradication (OIE,2008) CBPP was identified in Sudan as one of its main and prioritized animal concern.
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History of the disease in the Sudan

- ❑ In the Sudan the disease was first observed in 1875 in Darfur region then later to Khartoum province leading to serious loss of cattle (Anon, 1925). In 1881 during the Mahdi wars the disease disappeared. But in 1912 the disease reappeared again in Kordofan region through infected trade animals brought from West Africa (Anon 1912). In 1913 the disease was reported in Nuba mountains, the White Nile, Blue Nile, province. In 1917 the disease was reported in Kassala and in 1923 the disease spreaded to Berber province (Anon, 1925).

The present situation of CBPP in the Sudan

- The disease is enzootic in the Western and Central Provinces of the country (Shallali,1997 and FAO, 2005).CBPP is widely spread in Southern Darfur State specially areas of El Dain, Buram. Southern Kordofan State is also endemic area and reports were received from Al Dallang, Kadogli, Abu Gebiha, Babanosa, Almoglad and Abeyei in the southern part of the Western Kordofan State. Random, sporadic cases were reported in Khartoum State (Mageed, 2003).

Cont.

- Recent study sponsored by Serosurvalance of trade sensitive disease(STSD) – 2016 revealed the following results as shown in Table 1 and fig 1:–

CBPP antibodies(STSD project) - 2016

State	Total no. of samples	Positive	% of positive
Blue Nile	140	4	2.8%
North Kurdofan	490	66	13.5%
West Kurdofan	560	60	10.8%
South Kurdofan	490	39	8%
Aljazeera	560	23	4.1%
Khartoum	420	14	3.3%
Senar	490	32	6.5%
AlGadaref	770	91	12.2%
North State	350	14	4%
River Nile	420	16	4%
White Nile	630	51	8.1%
Red Sea	490	20	4.1%
Kassala	700	47	6.7%
North D.	350	91	26%
East D.	280	5	1.7%
West D.	351	25	7.1%
South D.	350	35	10%
Central D.	280	75	26.7%
Total	8121	708	



VID-20220720-WA0015.mp4



Recent outbreak in Gezira state central Sudan



Gezira state outbreak.mp4

Diagnosis of CBPP in the Sudan

Field diagnosis:

1\Epidemiological diagnosis

- ❑ Risk factors which include: age, vaccination, introduce cattle, share grazing and water, treatment administering, how many animals are sick and died and health status of neighbouring herds.

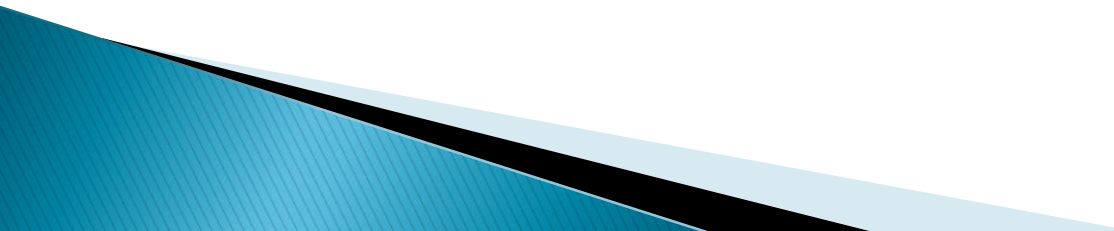
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2\Clinical diagnosis is achieved by:

- ❑ Recording of the disease history from the farmer or animal attendant.
- ❑ Observation of the animal at rest acutely affected cattle show fever, rapid respiration rate, anorexia and depression. Cough develop, breathing becomes difficult and nasal and oral discharges (clinical signs). Physical examination of the animal (LN.palpation, check mouth and force the animal to move.

Cont.

3\Postmortem findings:

- ❑ The affected lung adheres to the pleura.
 - ❑ The pleural cavity is filled with turbid yellow exudates.
 - ❑ The cut surface of affected lung shows marbled appearance.
 - ❑ In chronic cases sequestra may be present.
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4\ Differential diagnosis:

- ❑ Clinically CBPP may be confused with other pneumonic diseases so it is necessary to distinguish this disease from other disease which appeared as the same clinical signs or lesions (hemorrhagic septicemia, theileria, foreign body.

Differential diagnosis with sequestra like lesion

- ❑ Abscesses: content of abscesses when cut give offensive odor.
- ❑ Tuberculosis: Tubercular nodule is degenerative cheese-like lesion
- ❑ Bovine farcy: the lung lesion of B.F. Filled with foul smelling purulent material.
- ❑ Actinobacillosis: Lesion is generalized and rarely present in lung.
- ❑ Echinococcal cysts: these cysts have a double wall and contain a clear liquid often calcified when old.
- ❑ The clinical diagnosis is confirmed by a laboratory diagnosis so good samples from the field send to the lab.

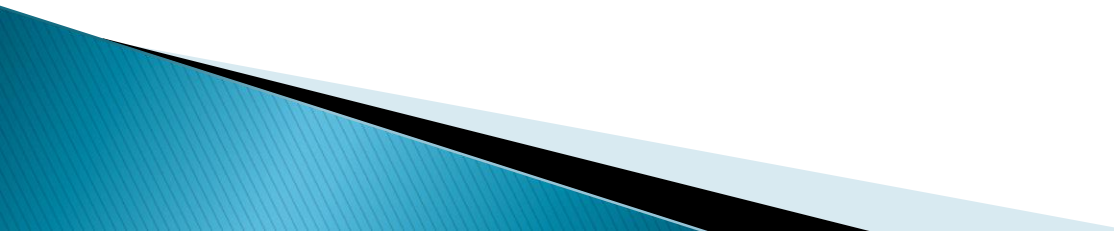
Laboratory diagnosis

- ❑ Diagnosis of CBPP disease in the department of mycoplasma/CVRL/Sudan acutely practiced is:
- ❑ Bacteriological test isolation and identification of the causative agent a proper sample (infected tissue lung or pleural exudates) is cultured using Gourley's media or PPLO media. Pure cultured identified using biochemical test for primary grouping then serological test growth inhibition test using *Mmm* antisera and confirmed by PCR.

Cont.

- ❑ Serological diagnosis in which sera samples are examined for Mmm antibodies by using c-ELISA , Latex Agglutination Test (for research and vaccine production), ,Slide agglutination test which is used for routine work using modified antigen prepared from the strain T1/44 in the department.

Cont.

- ❑ Accurate diagnosis leads to strategic control and eradication of the disease.
 - ❑ In general control strategies of the disease rely heavily on the detection of endemic areas, quarantine measurement, diagnosis, stamping out policy and vaccination.
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Strategic control of CBPP in Sudan

In the Sudan animal husbandry is nomadic so **restriction of animal movement is very difficult.**

Routine methods for control are:

- ❑ Segregation and quarantine of infected herd.
- ❑ Testing and removal of positive animal.
- ❑ Annual vaccination .A live attenuated freeze dried vaccine, prepared from strain T1/44 of *Mmm* has been used in the Sudan fields since 1997 .

Recommendation

- ▶ Mass vaccination for five years with Serosurvalance and treated of side effect symptoms.
- ▶ Stamping out and compensation
- ▶ All above mentioned must be supported by organizations (WOAH, FAO....)
- ▶



Thank you
Neimat Elsemah