TECHNICAL BULLETIN

Central Veterinary Laboratory (CVL)

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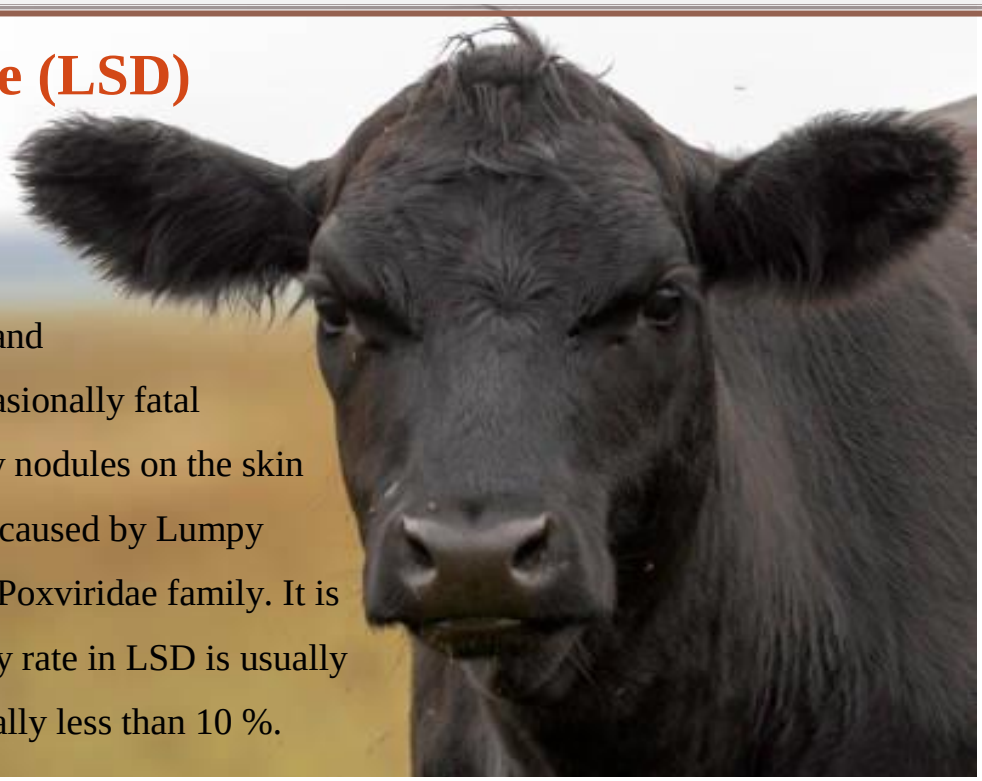
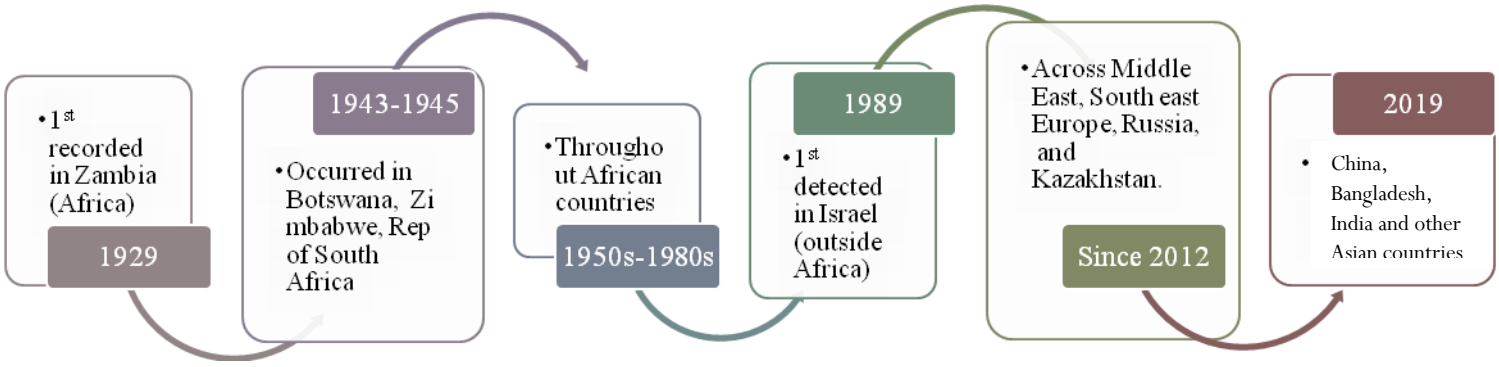
Lumpy Skin Disease (LSD)



Background

Lumpy Skin Disease (LSD) is a notifiable viral disease of cattle and buffalo. LSD is an eruptive, occasionally fatal disease of cattle characterized by nodules on the skin and other parts of the body. It is caused by Lumpy Skin Disease virus belonging to Poxviridae family. It is a vector borne disease. Morbidity rate in LSD is usually 5-45 % and mortality rate is usually less than 10 %.

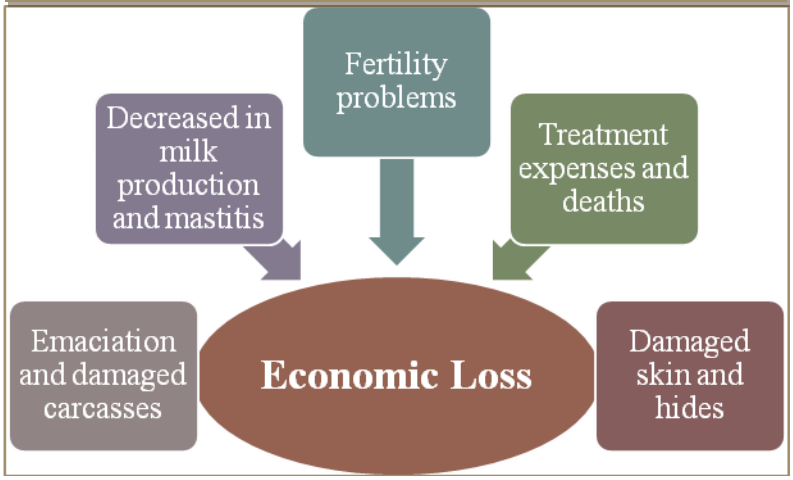
History of LSD



Clinical Signs of LSD

- Nasal and ocular discharge
- Discharge becomes mucopurulent as the disease progresses
- Fever
- Swelling of joints
- Swollen superficial lymphnodes
- Sharp reduction in milk production
- Formation of skin nodules, throughout the body.

Impact of LSD on Livestock



First Outbreak of LSD in Nepal

LSD outbreak started in Nepal by mid of Ashad 2077. The first case was detected and declared on 12th Shrawan, 2077 (July 27, 2020). Later it was reported from 17 different districts (Fig. 1). Within the duration of 1st quarter 226 samples has been submitted to Central Veterinary Laboratory via Veterinary Laboratories and private practitioners. The samples were processed and tested by RT- PCR procedure where the percentage positive was 73.41.

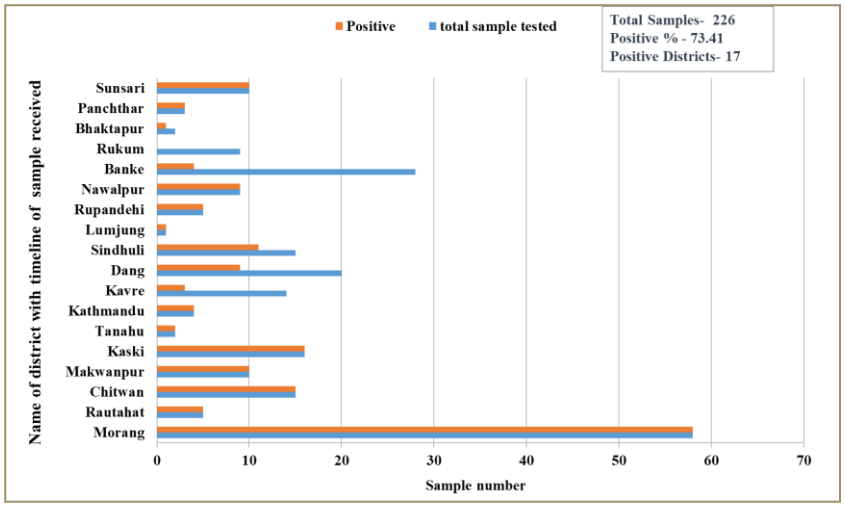


Fig. 1 District wise LSD cases as diagnosed with PCR.

Photographs of LSD

Fig.2 Nodules in skin.
(Photo: Dr. Sanjay K Yadav, VL, Biratnagar)

Fig. 3 Healing ulcer lesion above the hoof (Left) and Swollen prescapular LN (Right).
(Photo: Dr. Nabaraj Shrestha, CVL)

Prevention and Control

- Animal movement control
- Vector population control
- Hygienic measures in the farms
- Use of sterile and unused syringes
- Awareness campaign
- Vaccination (Homologous or Heterologous vaccines)

Conclusion

LSD is a notifiable disease of livestock in Nepal. Thus, farmers, technical person or any other Nepalese citizen has their responsibility to inform to Livestock Offices or Sections present at different level of government. Vaccines of LSD are available in international market. Yet Government of Nepal has not given permission for its use in Nepal. Veterinary Standard and Drug Regulatory Laboratory (VSDRL), Kathmandu is conducting trial of LSD vaccines to check its quality and efficacy. Once the qualities of vaccines are approved from VSDRL, GoN will take a decision whether it can be permitted for its commercial use in Nepal.

Haemoprotozoal Diseases

Protozoan parasites are responsible for causing severe infections both in humans and animals worldwide. The infection is mainly transmitted by arthropod vectors, or through blood transfusion. The important hemoprotozoan diseases of veterinary importance are caused by several species of *Trypanosoma*, *Theileria*, *Babesia*, and *Anaplasma* respectively, in several species of livestock. The impact of diseases caused by these organisms on health and productivity of farm animals and human beings is huge, though a fair economic assessment on the quantum of incidental economic loss is yet to be worked out from India.

The clinical manifestation of the disease varies from fever, anorexia, anemia, threatened abortion, and death in the acute form of infections. The presence of susceptible host, vector and parasites throughout the country has made high chances of disease occurrence of disease.

During first quarter (Shrawan-Kartik, 2077), a total number of 868 Bovine and 68 Canine samples were submitted to CVL and VLs as suspected cases blood protozoans. Where 37.32 % were positive cases in case of bovine samples while 40.69% were positive for canine cases. The test was conducted by Blood Smear method.

In canine blood samples, *Babesia* species was the most commonly diagnosed hemoprotozoan followed by *Ehrlichia*, *Anaplasma* and *Trypanosoma* species respectively as presented in Fig. 4. Similarly, the most common blood protozoan in ruminants was *Babesia*, followed by *Theilaria*, *Anaplasma* and *Trypanosoma*respectively as presented in Fig. 5.

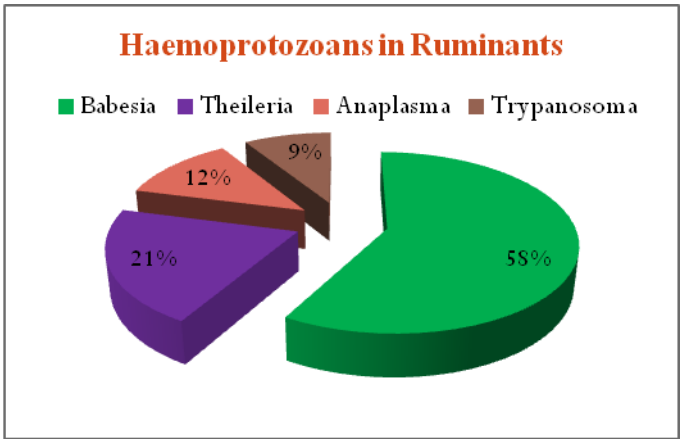


Fig. 4 Haemoprotozoans of Ruminants.

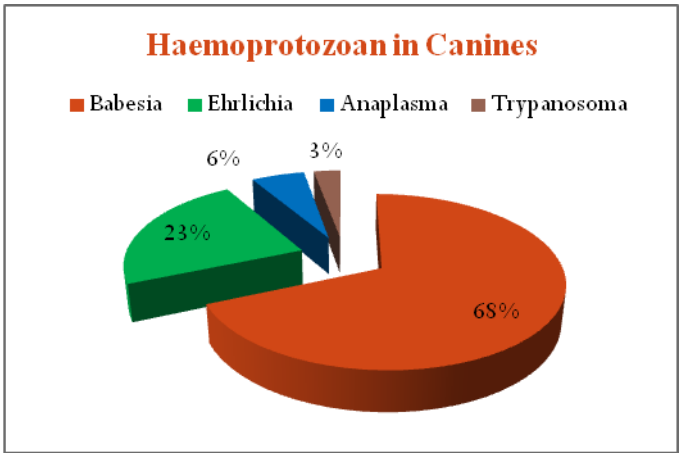


Fig.5 Haemoprotozoans of Canines

Photographs

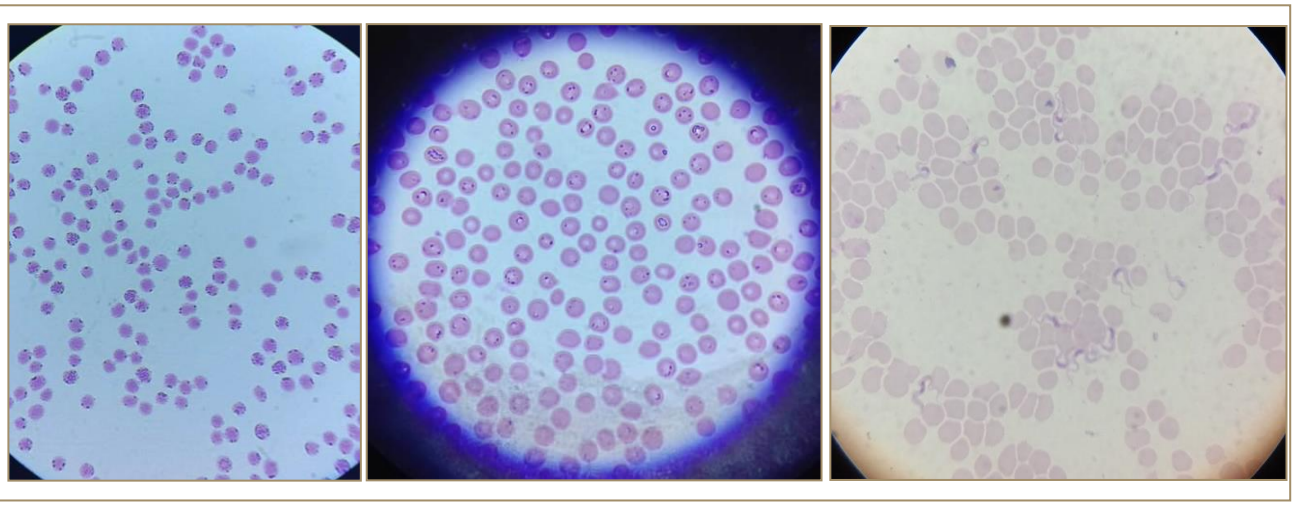


Fig. 6 Hematological slides:Anaplasma in cattle (Left), Babesia in cattle (Middle), Trypanosoma in dogs (Right). (Photo: Prakash Devkota, Hematology Unit, CVL)

Conclusion

The hematological data of first quarter (2077/078) shows that the cases of hemoprotozoans has been increased during this period in compared to previous year. The prevalence of enormous number of vectors, especially ticks has led this situation. Thus, regular use of ectoparasiticides in animals and dogs along with regular sanitation of beddings and farm premises is required.

Acknowledgements

- Team of CVL
- Veterinary Laboratories (Biratnagar, Janakpur, Pokhara, Surkhet and Dhangadi).
- Private technicians
- Farmers

Our Services

- *Post-mortem examination*
- *Fecal and skin scrapping examination*
- *Blood examination*
- *Bacterial isolation, culture and AST.*
- *Pen-site & Rapid, ELISA, HA/HI Tests*
- *Polymerase Chain Reaction (PCR)*
- *Histological examination*
- *Drug residues in animal food products*

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