



# The Veterinarian

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## JAFFNA WORKSHOP ON LIVESTOCK & MOTIVATION

The SLVA organized a successful twin-event on “**Prevention and Control of Parasitic Infestation in Livestock and Motivation Program**” in collaboration with the northern

chapter of the University of Peradeniya. The technical session was conducted by Prof. RPVJ Rajapakse, and the motivational session by Mr. S Padmasiri Subasinghe.

*Cont. pg.2*



## VETERINARY DENTISTRY: LECTURE AND WET-LAB PRACTICAL SESSION

A basic lecture and a wet-lab practical session on companion animal dentistry was organized by SLVA and conducted at the veterinary teaching hospital (VTH), University of Peradeniya on 11<sup>th</sup> March 2021. Dr. Chandika Wickramasinghe, was the resource person.

*Cont. pg.3*



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This was held at the faculty of medicine, university of Jaffna, on 14<sup>th</sup> February 2021. It was a refreshing experience to the veterinarians of Jaffna to participate in a CPD program of this nature, and everyone was very thankful for the opportunity.

The technical session was especially useful to the government veterinarians whose primary focus is the production animals.



Lighting of the Oil Lamp : President, SLVA



Lighting of the Oil Lamp : Prof. RPVJ Rajapakshe



While conducting the sessions



Group photo : Motivational Programme

**SLVA INTERVENTION ON LUMPY SKIN DISEASE OUTBREAK**

A meeting with the Director General, DAPH was held in Kandy with the participation of the office bearers of the executive committee on 13<sup>th</sup> January 2021. It was mentioned that this outbreak has led to a severe reduction in the annual milk production of Sri Lanka. Measures to effectively

controlling the disease, including swift importation of vaccines and possible production of the vaccine in Sri Lanka were discussed. This meeting was followed by a press conference with the electronic media to pass the message to the general public.

*Cont. pg.3*



Discussion with the Director General



Lumpy Skin Disease



Media Briefing

## DENTAL WORKSHOP

It was a full-day workshop which consisted of two introductory lectures in the morning session, followed by a practical wet-lab session after lunch.

There were 16 registered participants for the program. This was a whole new experience to Sri Lankan veterinarians as this is a relatively new and under-developed field to the

veterinary profession. Participants gained hands on experience on tooth scaling, polishing and basic extractions during the practical session. Further, demonstrations were done for basic flap techniques. The final year students were allowed to participate in the lectures.



Registration desk



Delivering the dental lecture



Dental Wet-Lab session



Group photo of dental workshop

## Corona Virus at a glance



**Dr. Mohamed Ijas**

(B.VSc., MBA, PG-Dip., M.Sc.)

Chief Municipal Veterinary Surgeon,  
Colombo Municipal Council

Coronaviruses (CoVs) are globally distributed RNA-viruses affecting a number of species, as well as humans,

instigating a wide range of diseases. Traditionally, they have not been reflected as stark threat to public health until emergence of two outbreaks of CoVs namely, Severe Acute Respiratory Syndrome (SAARS) in 2002 and Middle East Respiratory Syndrome in 2012. The concern related to CoVs infection drastically grown after the COVID-19 global outbreak, for which a spill-over from wild animals is thought to be the most likely consequence.

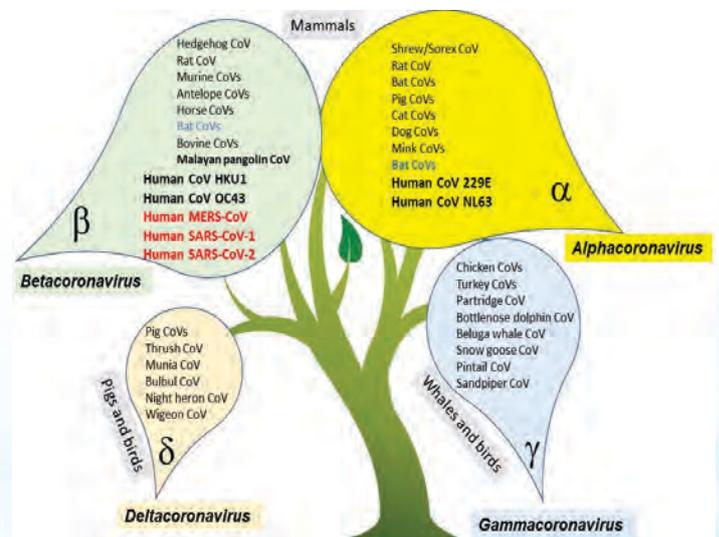
CoVs are very familiar to veterinarians, as they can cause a wide range of diseases, mainly affecting the respiratory, gastro-intestinal, and central nervous systems, in a large number of host species, from birds to mammals, including humans. Well known animal viruses are Infectious bronchitis virus (IBD) in chickens the first Corona virus detected in livestock, porcine epidemic diarrhea virus (PEDV), transmissible gastroenteritis virus (TGEV) and porcine respiratory coronavirus (PRCV) in pigs. And canine coronavirus (CCV) in dogs, feline coronavirus (FCV) in cats are common amongst pet animals. All animal corona viruses are different strains than SARS-CoV-2, mostly species-specific and non-zoonotic. Thus, they cannot be transferred to humans.

## Categorization of Corona Virus and their Reservoir

Coronaviruses are a large collection of viruses named for the crown-like spike proteins on their surface. These viruses belong to the enveloped RNA virus family Coronaviridae. The first isolation of human CoVs dates back to 1968. Scientists highlighted a characteristic common fringe of 200 Å long rounded to petal-like projections from the viral membrane, having the appearance of the “solar corona”,

subsequently also identified as a “crown”. These projections constitute the typical “Spike” glycoproteins, which characterize all CoV membranes. Coronaviruses comprise of single-stranded, positive-sense genomes, and are classified into four genera based on differences in their protein sequences: alpha coronavirus, beta coronavirus, gamma coronavirus, or delta coronavirus.

Order: <i>Nidovirales</i>					
Family: <i>Coronaviridae</i>					
Sub-family	Genus	Sub-genus	Species	Sub-species	
<i>Orthocoronaviridae</i>	<i>Alphacoronavirus</i>	<i>Duvinacoronavirus</i>	<i>HCoV-229</i>		
		<i>Setracovirus</i>	<i>HCoV-NL63</i>		
	<i>Betacoronavirus</i>			<i>HCoV-HKU1</i>	
		<i>Embecovirus</i>		<i>Betacoronavirus 1</i>	<i>HCoV-OC43</i>
		<i>Merbecovirus</i>		<i>MERS-CoV</i>	
		<i>Sarbecovirus</i>		<i>SARS-CoV</i>	
				<i>SARS-CoV2</i>	
	<i>Deltacoronavirus</i>				
	<i>Gammacoronavirus</i>				



Some studies indicate that possibly all CoVs are genetically derived from common ancestors residing in bats, which are usually naturally infected and asymptomatic long-lasting reservoir for Alpha and Beta coronaviruses, while birds are carriers of Delta and Gamma coronaviruses. The different behavior of coronaviruses in bats and birds could also be

related to the unique properties of these two groups of animals. The diversity of bats and birds themselves is huge, their flying capacity has allowed them to spread worldwide, and their habits provide frequent opportunities of aggregation.

## Examples of animal coronaviruses and vaccine strategies used.

In 2019, a novel coronavirus (COVID-19 or SARS-CoV-2) occurred in Wuhan, China. Since then, cases have been detected globally and on March 11, 2020, the World Health Organization regarded the outbreak as a pandemic. The COVID-19 outbreak appears to have originated from a Wuhan seafood market where wild animals, including

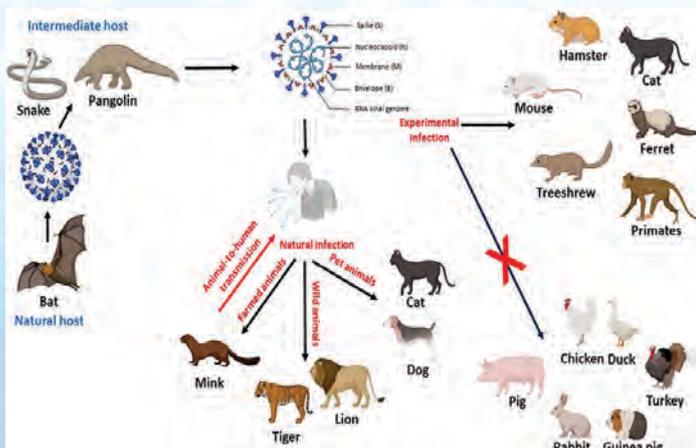
marmots, birds, rabbits, bats and snakes, are traded illegally. The first people infected with the disease, a group primarily made up of seafood market stallholders, contracted infection through animal contact. The genetic data undeniably demonstrate that COVID-19 is not derived from any previously used virus backbone.

Species	Disease	Clinical Signs	Vaccine
Poultry	Avian infectious bronchitis	Acute respiratory disease in poultry.	Live attenuated virus administered through drinking water, aerosol spray or oculo-nasally.
Cattle	Bovine coronavirus	Causes neonatal calf diarrhoeal disease.	Inactivated whole virus, given intramuscularly combined with other vaccines.
Pigs	Porcine transmissible gastroenteritis	Acute diarrhoea and vomiting in young pigs	Live, attenuated whole virus, via intramuscular injection alone or combination of oral prime followed by an intramuscular boost.
Dogs	Canine coronavirus	Sudden vomiting, depression, diarrhoea, and dehydration or respiratory disease	Inactivated feline enteric coronavirus (FECV), antigenically similar to enteric CCV, administered with other vaccines by injection to young puppies followed by a second booster dose.
Cats	Feline infectious peritonitis	Various symptoms including fluctuating fever and death.	Attenuated, temperature-sensitive strain via intranasal vaccination.

It is rumored that SARS-CoV-2 has been originated from animals and transmitted to humans, then maintained human-to-human transmission. A number of animal species have been reported to be vulnerable to SARS-CoV-2 infection. The diversity of species susceptible to SARS-CoV-2 infection shows that the virus crosses the species barrier. Thus, several animals either wild or domestic may be

infected and act as intermediate hosts for SARS-CoV-2 virus. Scientists postulate two probable circumstances for the

## What regulates the host range of coronavirus?



The host range is defined as the range of species susceptible to a virus. One of the well-founded determinants of coronavirus host range is the interaction between the coronavirus spike protein and the host cell receptor. Angiotensin-converting enzyme 2 (ACE2) has been identified as a receptor for the attachment and uptake of SARS-CoV-1 and COVID-19 in host cells.

It was suggested that bat is the likely host of SARS-CoV-2, but the intermediate host is still unclear. It is essential to identify the potential intermediate host to interrupt the transmission chain of the virus. Pangolin is a very much suspected contender as an intermediate host for SARS-CoV-2.

Recently, SARS-CoV-2 natural infection has been reported in cats, dogs, minks, tigers, lions and gorilla. Moreover, experimental studies have recognized the susceptibility of other animal species to SARS-CoV-2, such as mice,

hamsters, cats, ferrets, non-human primates, and treeshrews. The natural and experimental infection to animals is shown in the figure.

## One Health Perspective

The countless number of animal diseases caused by a range of CoV strains in several species indicate the vast spreading of CoVs in the ecosystem and their ability to change, adapt, and progressively cause new animal diseases over time. The adaptation during cross-species jumps in indifferent species including domestic and wild mammals, as well as birds, may play a role in enabling viral spillover from natural hosts to humans.

From One Health perspective, an increased animal-to-human transmission is already evident of viral pathogens such as Ebola, Influenza viruses, Hendra, Nipah, and CoVs. Unfortunately ecosystem changes, including climate changes, urbanization with increased human population, and cultural and social changes, as well as secular traditions account for this new spreading of zoonotic epidemics, which we should expect more in the future. For these reasons,

animals, humans, and the environment should be considered as part of the same scenario and a better understanding of the interaction between the different components could help in preventing and controlling any future spill-over towards the human sphere. Thus, it is pertinent to emphasize that further research is undeniably necessary in order to better characterize the transmission barrier(s) between CoVs and different animal species, along with the virus- and the host-related factors underlying cross-species jumping within different environments as well as at the level of the various ecological interfaces. To overcome future challenges and problems encountered during emerging and re-emerging diseases strengthening public health surveillance systems, including veterinary services and wildlife monitoring, could provide early warnings and predict possible future emergencies.

## MEDIA PLATFORM FOR SLVA

With a view to achieving a long felt need of SLVA, the Ex-Co started discussions as to how an effective public communication means is established. There have been several instances where non-scientific and baseless messages being circulated in social media with regards to different sectors of the veterinary profession. It was identified as an essential and timely need to correct these

misconceptions and to educate the general public on these general and specific matters. Up to now, except for a few media conferences and press releases, there has been no proper mechanism to take any collective message of veterinarians to the general public.



A special zoom discussion was also held on 28<sup>th</sup> February 2021, facilitated and conducted by a renowned communication specialist at the public health department of the Colombo Municipality, Dr Kapila Sooriyarachchi, to educate the Ex-Co members on the basic principles of

disseminating scientific messages to the general public. Discussions are continuing to identify as to what the most effective structure of such a media platform is, and the Ex-Co wishes to finalize the same before the World Veterinary Day celebrations, which falls on 24<sup>th</sup> April 2021.

## VETERINARY MOBILE APP.



There are presently a few players in the Sri Lankan healthcare market that provide medical-related on-line services. For a long time, these on-line app. services have been stagnating, mainly used only to book channeling

appointments with medical consultants etc. In the recent past, especially after the Covid-19 pandemic, these have become increasingly popular in the human-medical sector, and also advanced to services like on-line audio-consultations.

It was felt that this potential can be used to serve both pet animals and animal production sector in Sri Lanka. Several rounds of initial discussions were held during the quarter with the representatives of Dialog Digital Health (Pvt.) Ltd, a subsidiary of Dialog Axiata with regards to introducing a mobile app. for consulting veterinarians on-line. The aim was to finalize the initial discussions and sign an MOU between SLVA and Dialog before the World Veterinary Day celebrations, which falls on 24<sup>th</sup> April 2021.

## COACHING SESSION FOR EX-CO MEMBERS

A coaching session was conducted to train the Ex-Co members under the theme “Empowered to Serve”. This was held at OPA, Colombo 07 on 21<sup>st</sup> Jan 2021 as the first major project of the newly appointed 73<sup>rd</sup> executive committee. The main objective was to motivate and empower the members, which will intern result in high standards of SLVA through improved dedication and vision of members, individually, as

well as a team. The two-hour session was conducted by Mr. Jayantha Fernando and Mr. Anil Bandara of the coaching company “Smart Quest”, and it was unarguably a fruitful one. Smart Quest also pledged their support to form a strategic plan for SLVA, which has been a long-felt need for our noble 80-year old organization.



## EXECUTIVE COMMITTEE MEETINGS

1. 21<sup>st</sup> January: OPA, Colombo 07
2. 20<sup>th</sup> February: Zoom Meeting
3. 19<sup>th</sup> March: VTH, Peradeniya.

SLVA Secretariat, OPA Centre, No. 275/75,  
Prof. Stanley Wijesundara Mawatha, Colombo 07.

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