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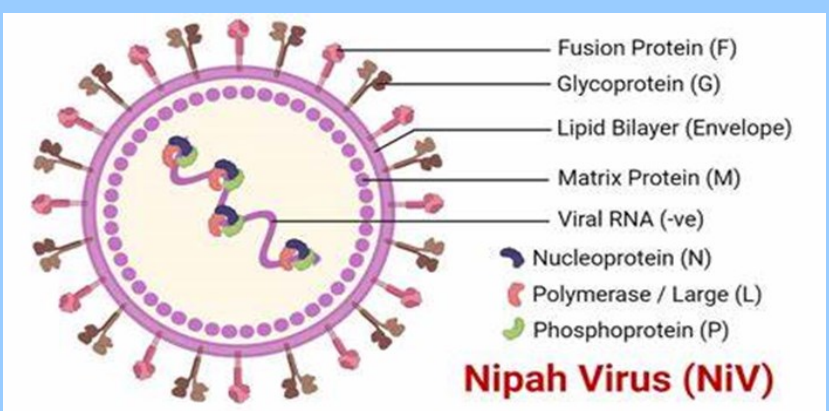
Contents

Nipah Viral Infection

Nipah virus diseases is an infectious disease which was initially reported in domestic pigs in Malaysia and Singapore during 1998 to 1999 period. Later in 2001, it was again recognized in Bangladesh, then nearly annual outbreaks have been occurred in that country since 2001. The disease was also reported periodically in Eastern India as well. Several other Asian countries (Cambodia, Ghana, Indonesia, Madagascar, Philippines and Thailand) also in risk to disease outbreak as they all are consist with various types of bat species which have potential to act as reservoirs.

Etiology

The organism which cause Nipah viral infection is an enveloped non-segmented negative sense RNA virus which belongs to order *Mononegavirales*, family *Paramyxoviridae* and genus *Henipavirus*.



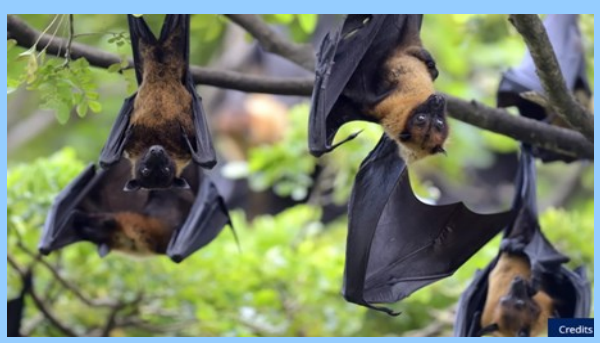
Epidemiology

Nipah viral infection can affect several species of domestic animals including pigs, horses, goats, sheeps, dogs and cats as well as humans. The initial outbreaks in human in Malaysia and Singapore were occurred due to close contact of humans with infected pigs. But later, there were several cases of Nipah infection were reported in human population due to exposure to infected bats. Nipah virus in human causes a range of clinical

presentations, from asymptomatic infection to acute respiratory signs and fatal encephalitis. In pigs, disease has high morbidity due to highly contagious nature, but low mortality. Pigs are infectious during the incubation period, which lasts from 4 to 14 days.

Transmission

The natural reservoirs of the Nipah virus is 'fruit bats', also known as 'flying foxes'. Virus can be shed and contaminate the environment via bat faeces, saliva, birthing fluids and most commonly via urine. Most common source of disease introduction to pigs is contamination of feed and water with bat waste. Within pig farms, infection can be spread between pigs through direct contact, as well as to other pig farms through carriage of virus on fomites. But there is no apparent disease in fruit bats.



Clinical Signs

The disease is also known as 'Porcine Respiratory and Encephalitic Syndrome (PRES)' or 'Barking Pig Syndrome (BPS)', as it affects the respiratory and nervous system of pigs. The clinical presentation of pigs can be vary depending on the age and the individual animal's response to the virus. In general, mortality is low in adults. However, morbidity is high in all age groups due to the contagious nature of the disease. Most pigs develop a febrile respiratory illness with severe coughing and breathing difficulty. When the respiratory signs are predominant, encephalitis has been described, particularly in sows and boars, with nervous signs including twitching, trembling, muscle fasciculation, spasms, muscle weakness, convulsions, and death. But some infected animals may not show any clinical signs.

Diagnosis

Disease is difficult to diagnose based on clinical signs alone, as the signs and symptoms of the infection are non-specific. Disease confirmation can be made through the laboratory tests. The main tests used are Real time polymerase chain reaction (RT-PCR) and Enzyme-linked immunosorbent assay (ELISA). During the early stages of the disease RT-PCR can be done from the body fluids (nasal swabs, cerebrospinal fluid, urine, blood). Later in the disease and after recovery, testing for antibodies is conducted using ELISA. Polymerase chain reaction (PCR) assay and virus isolation tests by cell culture also can be used for confirm the presence of causative organism.

Treatment

Currently there are no treatments available for Nipah virus infection. Treatment is limited to supportive care including rest, hydration and symptomatic treatments.

Prevention

As there is no specific vaccine against the disease, control and prevention relies on the early detection and destruction of infected and at-risk animals.

If an outbreak is suspected, the animal premises should be quarantined immediately. Culling of infected animals with close supervision of burial or incineration of carcasses may be necessary to reduce the risk of transmission to people. Restricting or banning the movement of animals from infected farms to other areas can reduce the transmission of the disease.

Good biosecurity is the key to prevent the infection in domestic animals.

- Decrease the likelihood of the bats coming into contact with susceptible animal species.

- In infected areas, susceptible animals should be kept away from fruit tree plantations, and fruits that may have been in contact with bats should not be fed to animals.
- Burial sites of infected animals should be disinfected with chlorinated lime.
- Veterinarians and animal keepers should maintain vigilance, and suspected or confirmed cases should be reported to the Veterinary Authorities.

Measures to protect humans from infection

- Reducing contact with bats and bat secretions such as thorough hygienic practices.
  Eg: washing fruits and vegetables before consumption,
- Practicing good hand hygiene after handling or preparing these items
- Ensuring the use of covered containers when collecting palm sap, followed by boiling before consumption.
- Education and use of personal protective equipment (PPE) by persons in contact with potentially infected animals is highly recommended.

Establishing an animal health/wildlife surveillance system is also important to early detection of the disease.

Public Health Risk

Nipah virus is a zoonotic disease. Clinical presentation of the disease in humans can be vary from mild respiratory distress to fatal encephalitis conditions. So this is consider as a disease with high case fatality rate in humans (40% - 75%). Direct contact with secretions or excretions of infected pigs and bats are the most common causes of the disease in human.

In Bangladesh and India, it was suggested that disease was transmitted from bats without an intermediate host by consuming food contaminated with bat secretions. (eg: raw palm sap or fruits and climbing trees contaminated with bat excreta). Disease outbreak in Philippines in 2014 was due to direct contact with contaminated fluids during the slaughtering of infected horses and consumption of undercooked meat. Further, prolong contact with infected individuals also cause disease. Therefore, precautions are necessary for the people who caring the infected patients.

The incubation period in human is believed to range from 4 to 14 days. But, it may vary as long as 45 days.

Infected peoples may initially develop fever, headaches, muscle pain, vomiting and sore throat. Later dizziness, drowsiness, altered consciousness, and neurological signs can be appeared indicating acute encephalitis. Some people can also experience atypical pneumonia and severe respiratory distress. Encephalitis and seizures which occur in severe cases may progress to coma within 24 to 48 hours.

Most people who survive acute encephalitis make a full recovery, but long-term neurologic conditions have been reported in survivors. Approximately 20% of patients are left with residual neurological consequences such as seizure disorder and personality changes.

In order to reduce the risk of infection in people, public health education should be focus on:

- **Reducing the risk of bat-to-human transmission** by decreasing the bat access to food products (eg: palm sap). Freshly collected palm sap should be boiled and fruits should be washed/ peeled thoroughly before consumption.
- **Reducing the risk of animal - to - human transmission** by avoiding contact with infected animals or wearing protective gloves and clothes while handling sick animals or their tissues during slaughtering and culling processes.
- **Reducing the risk of human -to - human transmission** by avoiding close unprotected physical contact with infected people.

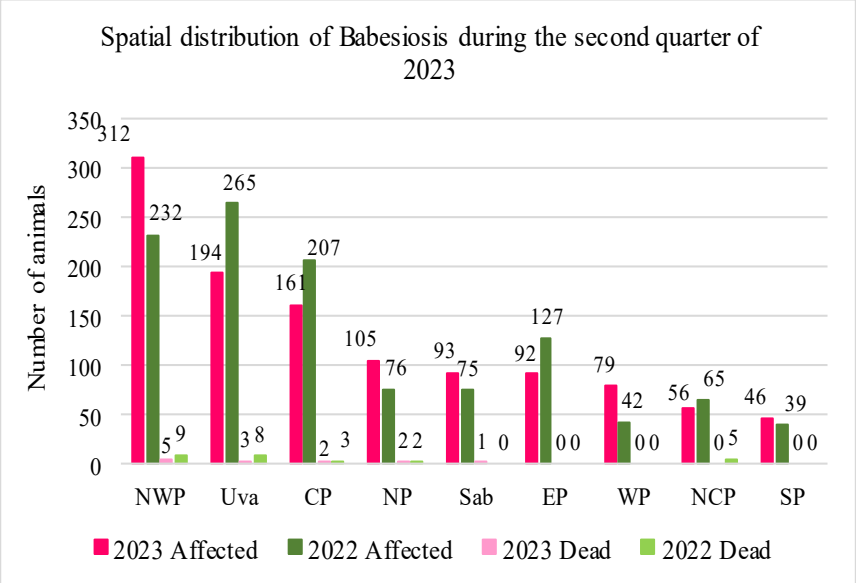
- ***Compiled by: Dr. D. R. K. Perera.***

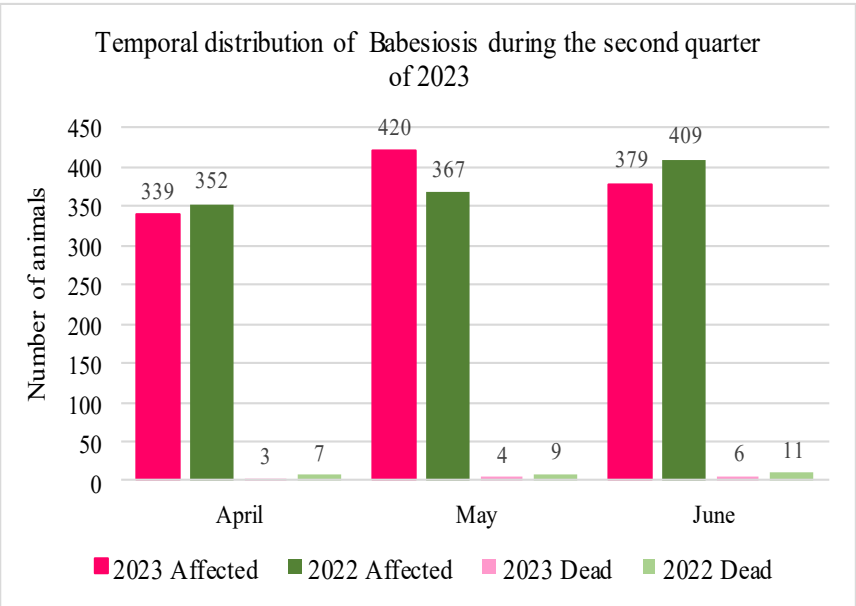
- ***Reference:***
  - ***https://www.merckvetmanual.com***
  - ***https://www.who.int***
  - ***https://www.ecdc.europa.eu***
  - ***https://www.woah.org***

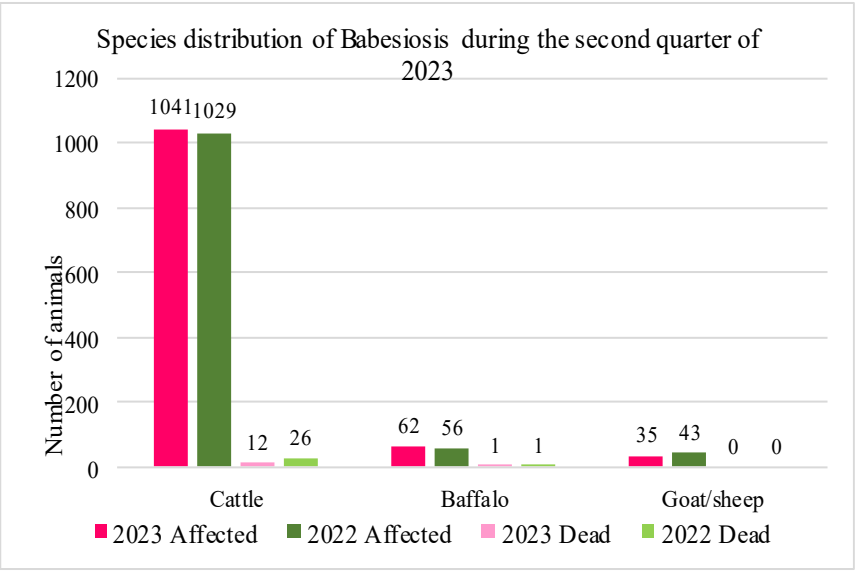
2. Status of Livestock Diseases - Second Quarter (April - June) - 2023

2.1 Bovine Diseases

2.1.1 Babesiosis :







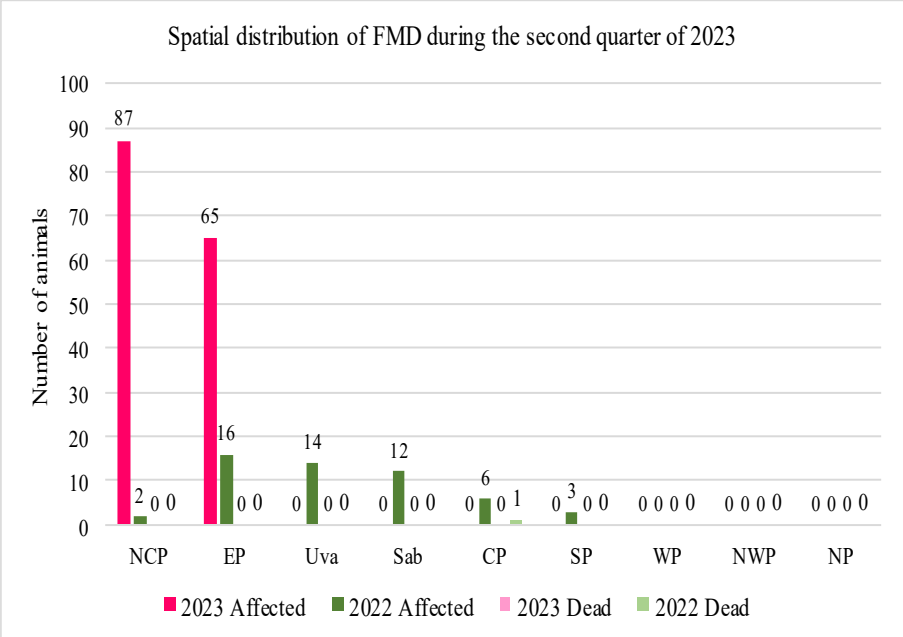
Bovine Babesiosis is an endemic disease in Sri Lanka, which generally reports from all nine provinces of the country throughout the year. During the second quarter of 2023, 1138 Bovine Babesiosis cases were reported from the country along with 13 deaths. It reveals slight increase in disease incidence in this year, as it was reported only 1126 cases with 27 deaths during the second quarter of 2022.

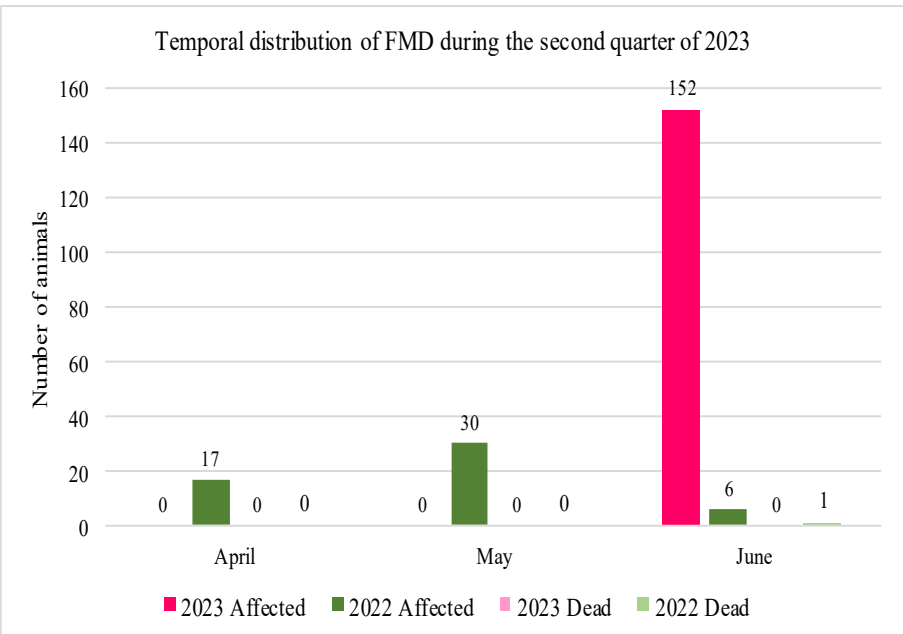
According to the spatial distribution of Babesiosis, graph shows the significant difference in provincial wise disease distribution of the second quarter of 2022 and 2023. As per the reported data, highest number of cases were reported from North Western province as 27.42% of total number of reported cases. Uva and Central provinces of the country also reported higher disease incidence but significantly lower than the same period of previous year. Least number of cases were reported from Southern province as 46 diseased cases without any deaths in 2023 second quarter.

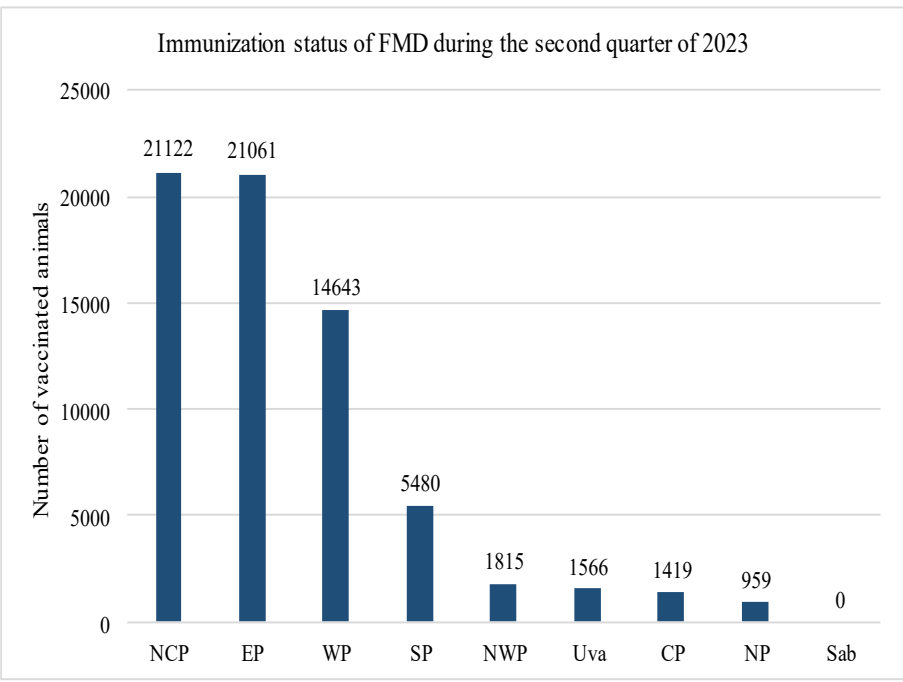
Temporal distribution graph shows more similar disease incidences during corresponding months of both quarters. Disease incidence has been slightly reduced towards end of the period of 2023, though it was highest in the middle of the quarter as 420 cases (36.91%) with 4 deaths.

Species distribution of the disease during the corresponding quarter shows noticeably high incidence of Babesiosis in cattle over other species.

2.1.2 Foot and Mouth Disease:







Foot and mouth disease is also consider as an endemic disease in Sri Lanka which usually has seasonal distribution pattern.

During the second quarter of 2023 totally 152 FMD infected animals were reported only from two adjacent provinces (North Central and Eastern provinces) of the country. It is nearly three times increment of total disease incidence when comparing to the same quarter of previous year. Majority of the cases were reported from North Central province as 87 cases, which is 57.23% of total cases. Eastern province reported rest of the cases as 65 cases representing 42.76% from total disease incidence. Other provinces didn't report any FMD cases during the considering quarter.

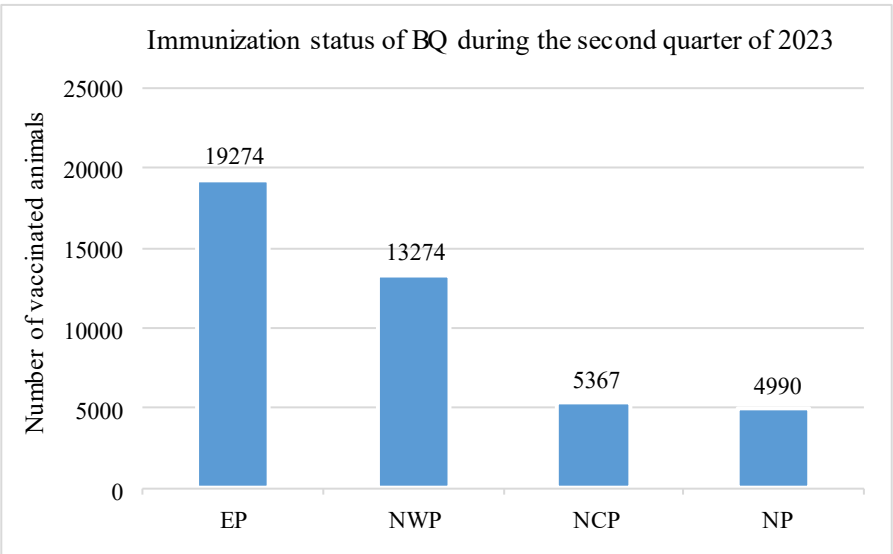
As per the temporal distribution, disease outbreak has started in June month resulting whole 152 infected cases. This shows significant deviation from the temporal disease distribution of the corresponding quarter of previous year.

Emergency preventive FMD vaccination against the disease is carried out based on the risk for the disease outbreak in each province and to curtail the disease spreading when outbreak occurred in unvaccinated areas. Based on those epidemiological data, majority of vaccines were distributed to North Central, Eastern and Western provinces of the country as these provinces are more prone to FMD outbreaks than other provinces of the country. Vaccination status during the period is indicated in the graph.

2.1.3 Black Quarter:

Black Quarter disease is considered as an endemic disease in the certain provinces of Sri Lanka due to it's epidemiological pattern throughout past several years. But annual disease incidence of Black Quarter in the country is very low throughout past few years. During the second quarter of 2023, diseased cases were not reported from any province of the country, as same as the corresponding quarter of the previous year.

Considered endemic provinces to the disease are North Western, Eastern, Northern, Central and North Central provinces of Sri Lanka. Therefore, prophylactic vaccination program is conducted mainly targeting those provinces and their temporal distribution pattern. During the second quarter of 2023, the immunization status of the animals through vaccination is indicated in the graph. According to that, totally 42905 animals in four provinces were immunized by vaccination against the Black Quarter disease.

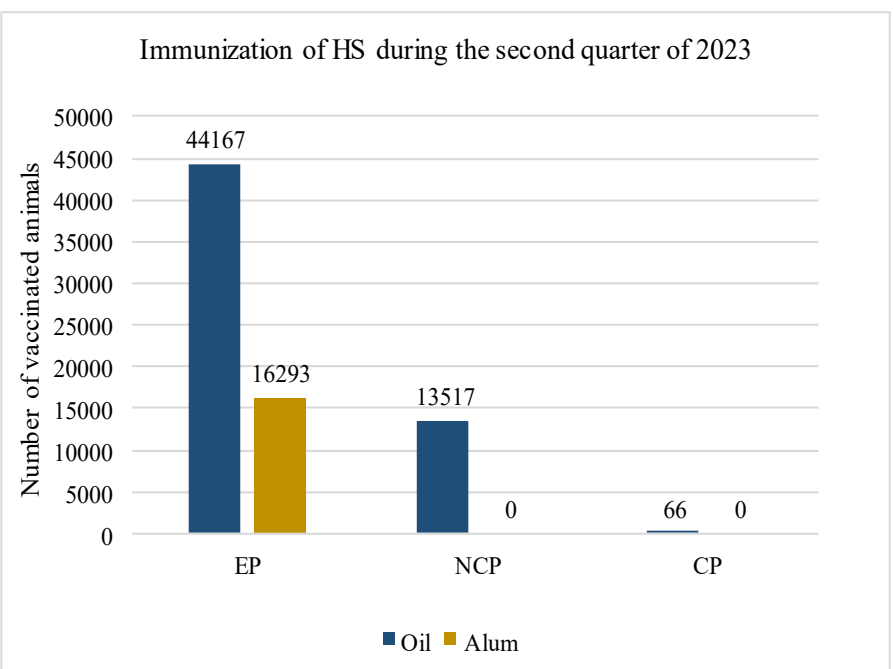


2.1.4 Hemorrhagic Septicemia:

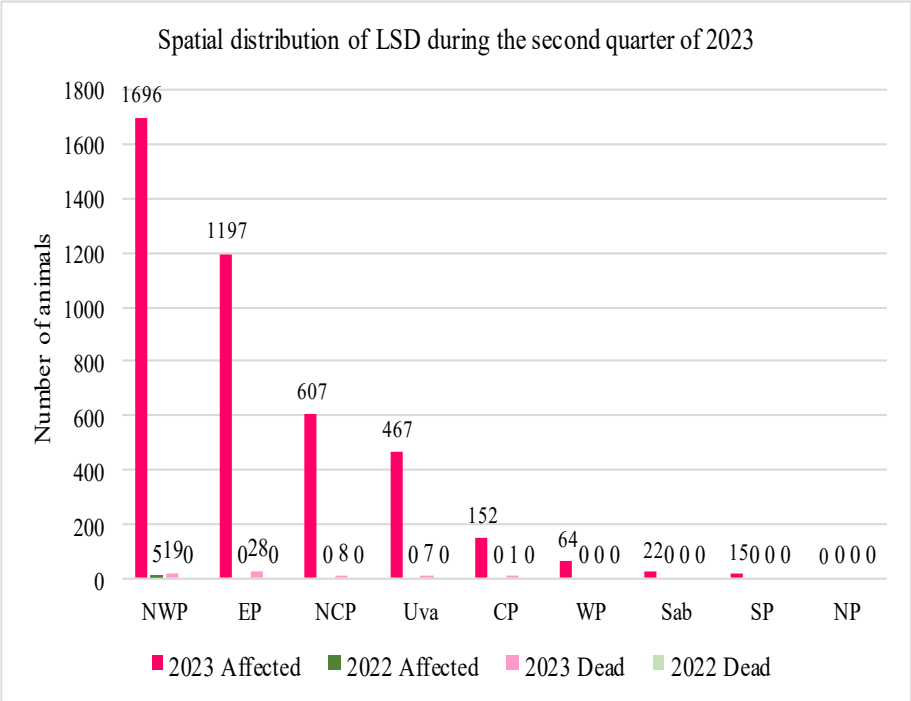
Hemorrhagic Septicemia is not a common animal disease in Sri Lanka. But every year it was reported occasionally in low numbers. During the second quarter of the 2023, no outbreaks of Hemorrhagic septicemia were reported from Sri Lanka as same as the corresponding quarter of the previous year.

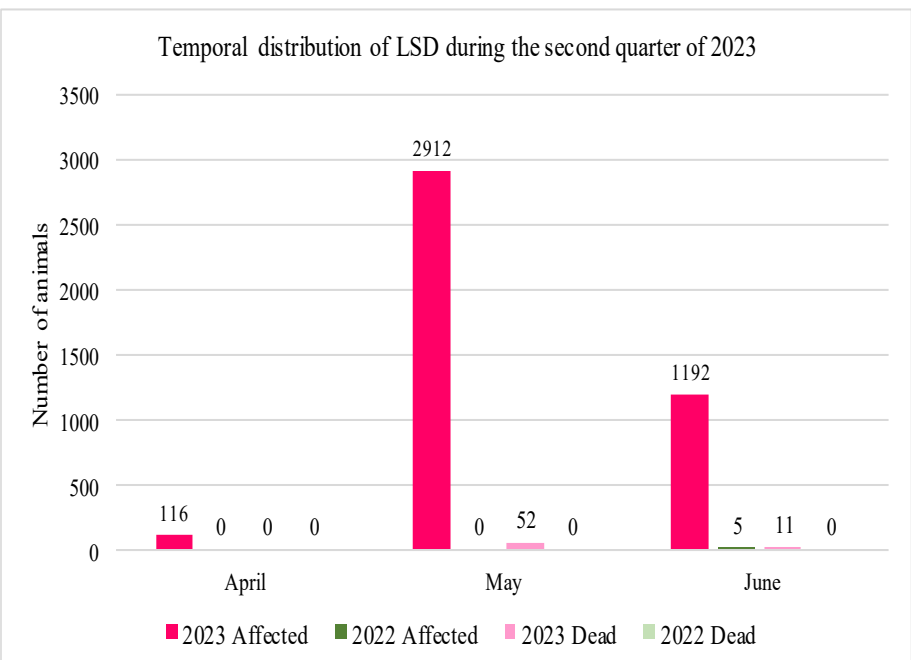
Vaccination program against the disease is conducted by DAPH with the help of field Veterinary surgeons to prevent and control the disease in susceptible provinces of the country. Oil base vaccine which use as prophylactic measure, has been used in Eastern, North Central and Central provinces of as 44167 doses, 13517 doses and 66 doses respectively to each province.

Totally 57750 animals were vaccinated in these three provinces. Alum adjuvant containing vaccines were used in the areas where disease outbreaks occurred / suspected clinical cases reported, to provoke an strong immune response within short period time in order to control the disease outbreak. According to the reported data 16293 Alum vaccines were used to vaccinate cattle in Eastern province during the second quarter of 2022.



2.1.5 Lumpy Skin Disease:



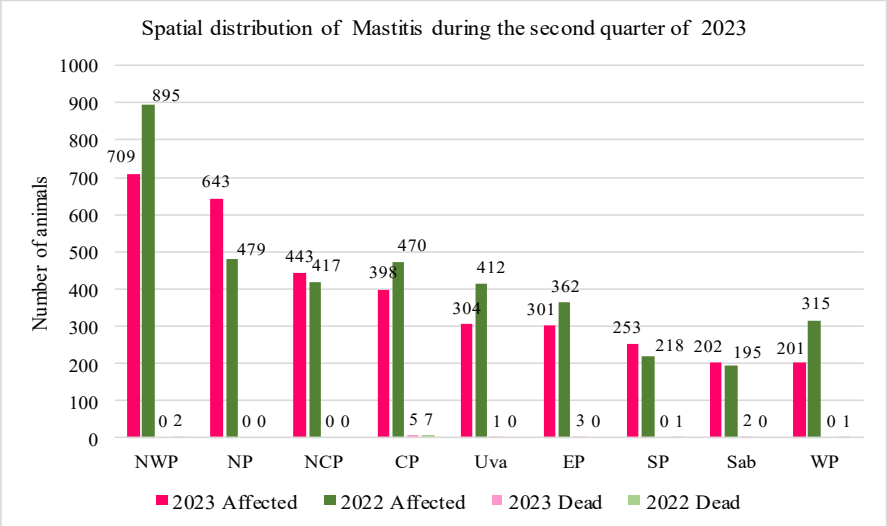


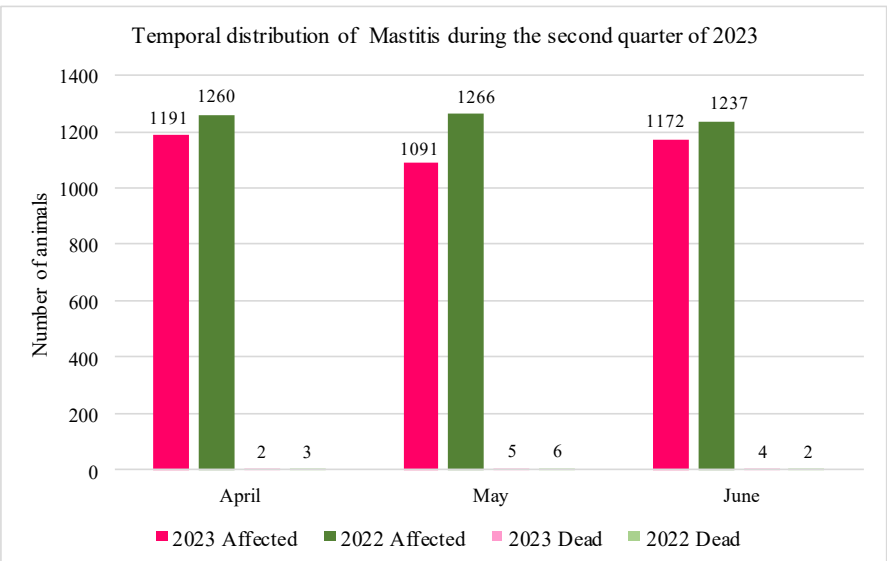
Lumpy Skin Disease (LSD) was introduced to Sri Lanka in 2020 and spread rapidly within whole country due to the frequent availability of vector species. Currently it has become an endemic disease in the country due to its frequent occurrences and wide spatial distribution throughout the year.

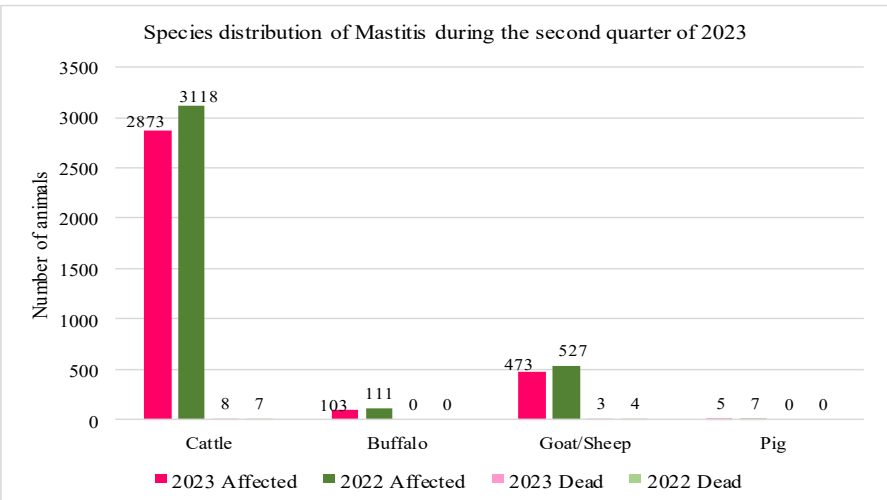
During the second quarter of 2023, totally 4220 LSD cases were reported with 63 deaths from eight provinces of the country. This is a very high disease incidence when comparing to the disease status of previous year second quarter as it had only 5 cases without any deaths. Highest number of diseases were reported from North Western Province with 1696 cases and 19 deaths representing 40.18% from total disease incidence of the period. Eastern province also reported second highest disease incidence as 1197 cases with 28 deaths (highest death rate). North Central, Uva, Central, Western, Sabaragamuwa and Southern provinces also reported LSD during the period, though they did not reported any cases during the same quarter of previous year. Northern province did not reported any LSD case during the second quarter of both 2022 and 2023, though the disease was introduced to the Sri Lanka from Northern province in 2020.

When considering the temporal distribution of the second quarter of 2023, initially only 116 cases were reported in April month without any deaths. But disease incidence was suddenly peaked in month of May and indicate most significant difference in disease incidence, as 2912 cases with 52 deaths, representing 69% of the total disease incidence of the quarter. Gradually it was reduced upto 1192 cases and 11 deaths by the end of the quarter. According to the above disease data, temporal distribution shows significant variation throughout the second quarter of the year 2023.

2.1.6 Mastitis:







During the second quarter of 2023, Mastitis cases were reported from all nine provinces of the country. Total number of cases was 3454, and it is 8.21% reduction of total reported number of cases than same period of previous year. Majority (20.52%) of the cases were reported from North Western province as 709 cases though it has been reduced by 20.78% than the previous year second quarter.

Temporal distribution shows more similar disease distribution throughout the each quarter with slight reduction of incidence in each month when comparing to the second quarter of 2023. Highest disease incidence was reported in April month as 1191 cases with 2 deaths. Average monthly disease incidence is 1151 cases.

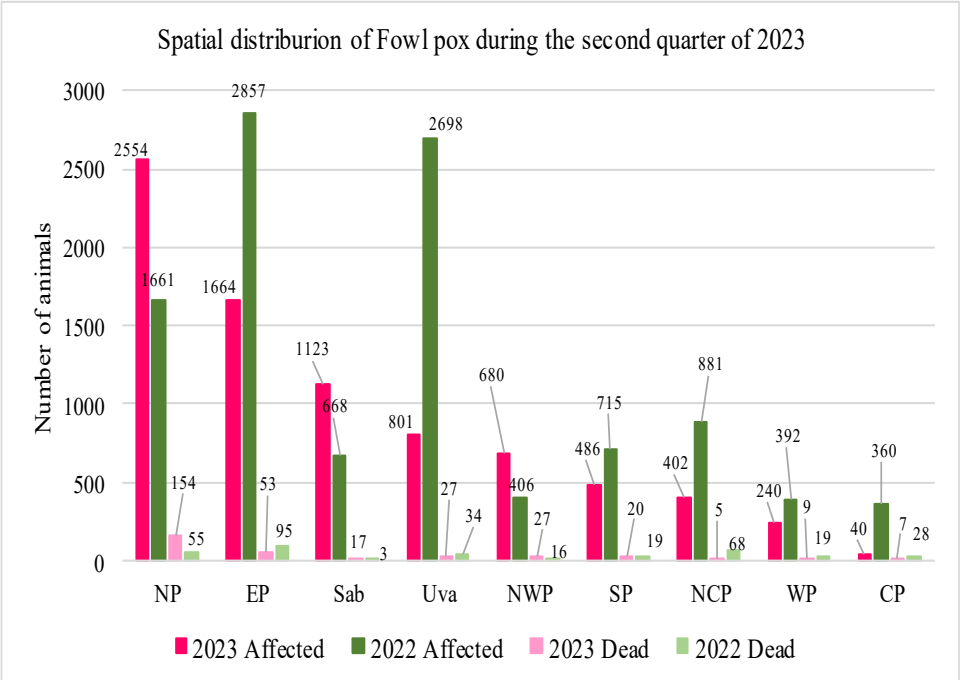
As reported by, highest Mastitis incidence was reported in cattle as 2873 cases with 8 deaths. However, this is 7.8% reduction of cattle disease incidence than the same quarter of previous year.

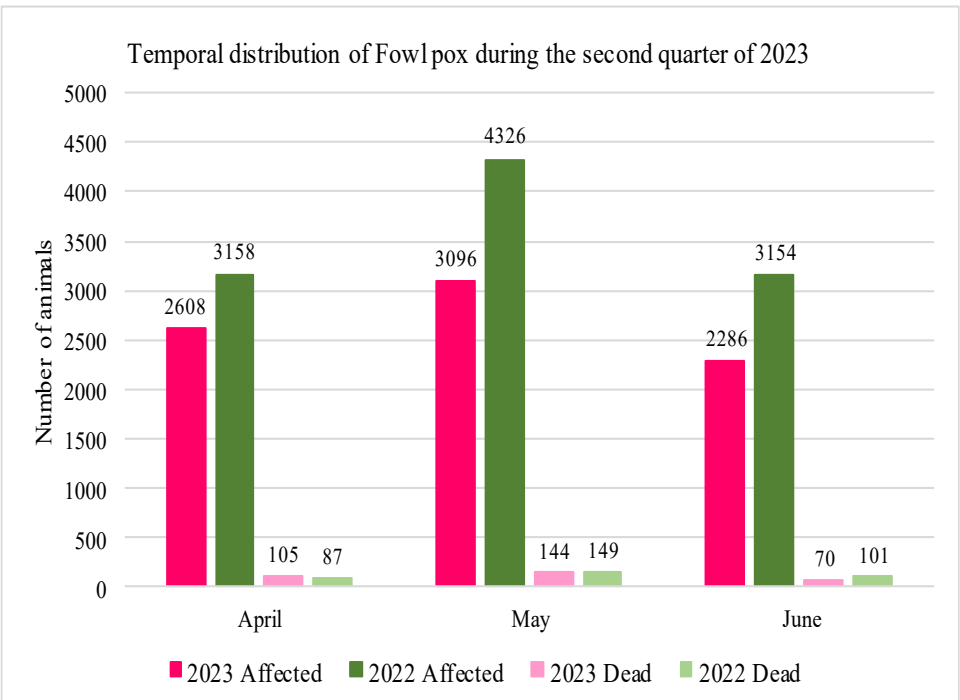
In order to control the Mastitis in dairy cattle, Department of Animal Production and Health implement a Mastitis Control Program to solve the mastitis related problems of small scale dairy farmers. Under this program, field mastitis identification tests, microbial isolation and antibiotic susceptibility tests, issuing of teat dip solution as precautionary measure as well as udder infusions as treatments are provided for the dairy farms when required. Contribution of this program towards controlling of mastitis during the second quarter of 2023 is indicated in the table.

Mastitis Control Program	
Amount of CMT reagent issued (Liters)	92
Performed Mastitis screening (CMT) Tests	1300
Tested milk samples for ABST	258
Amount of teat dip solution issued (Liter)	876
Amount of Udder infusion vials freely issued	
Lactating Cow	2854
Dry Cow	612

2.2 Poultry Diseases

2.2.1 Fowl pox:





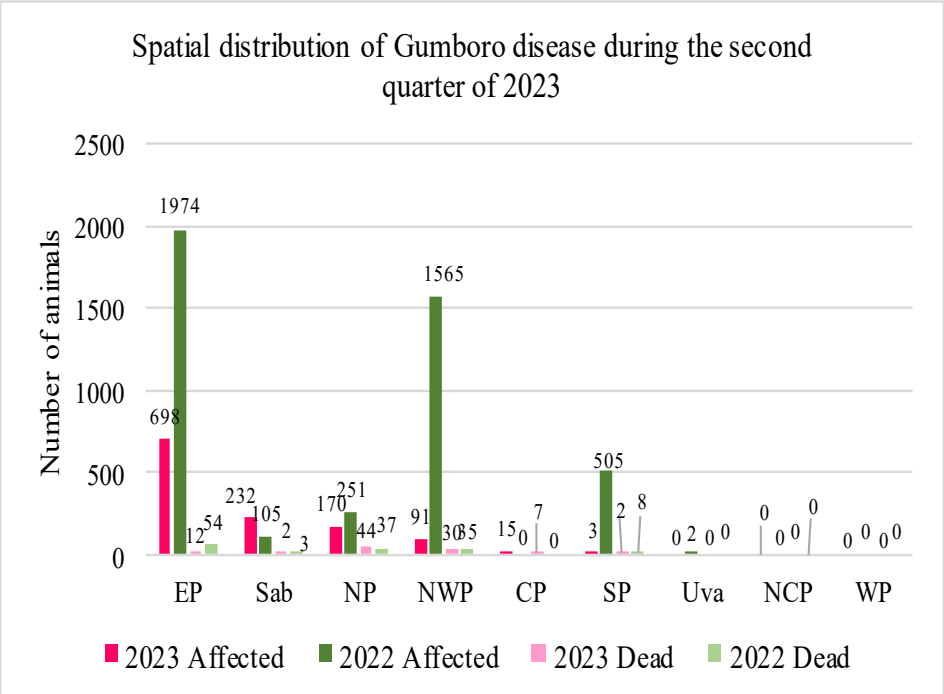
Fowl pox is one of the main viral disease in Sri Lanka which commonly affect the backyard poultry industry. Due to its contagious nature, it usually reports in high numbers from the provinces where have high backyard poultry population.

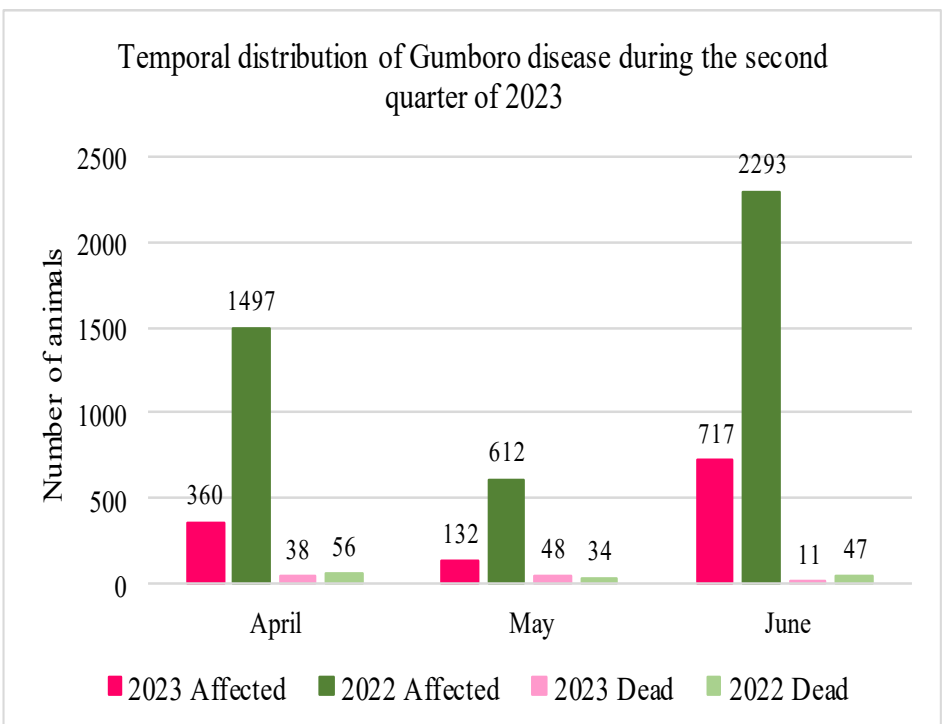
During the second quarter of 2023, totally 7990 birds were affected resulting 319 deaths. This amount is 24.89% reduction of total cases than previous year same quarter as it was reported only 10638 cases with 337 deaths. Though the disease incidence has been reduced, mortality has been increased in current quarter as 3.9%, but 3.1% in previous year second quarter. Majority of the diseased cases were reported from Northern province as 2554 cases with 154 deaths, it was 31.96% of total reported cases of this quarter. Eastern and Sabaragamuwa provinces also reported considerable higher number of cases while Uva province reporting the most significant difference in disease incidence as over 70% reduction in prevailing quarter than the previous year. Spatial distribution of the disease in same quarter of 2023 and 2022 has shown significant difference from each other.

Temporal distribution of the disease during the corresponding quarter showed the fluctuation in number of cases in similar pattern in both considering quarters. Both quarters reported the highest number of cases in May month and least number of cases in June month in both quarters. But disease incidence of all three months of 2023 is lower than the corresponding months of 2022.

As preventive measure of the disease, vaccination of the birds in young and growing age is practiced currently in small to large scale commercial and backyard farms as it can rapidly spread among the birds if it was introduced to an unvaccinated bird flock. Although it does not cause high mortality rate, it may lead high morbidity and considerable reduction in laying percentage in laying flocks.

2.2.2 Gumboro Disease:



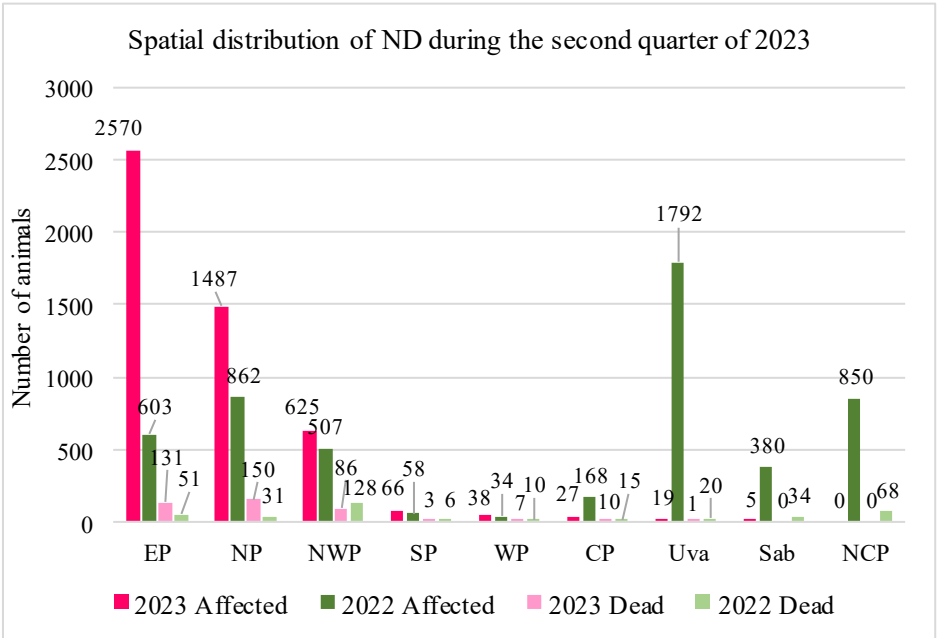


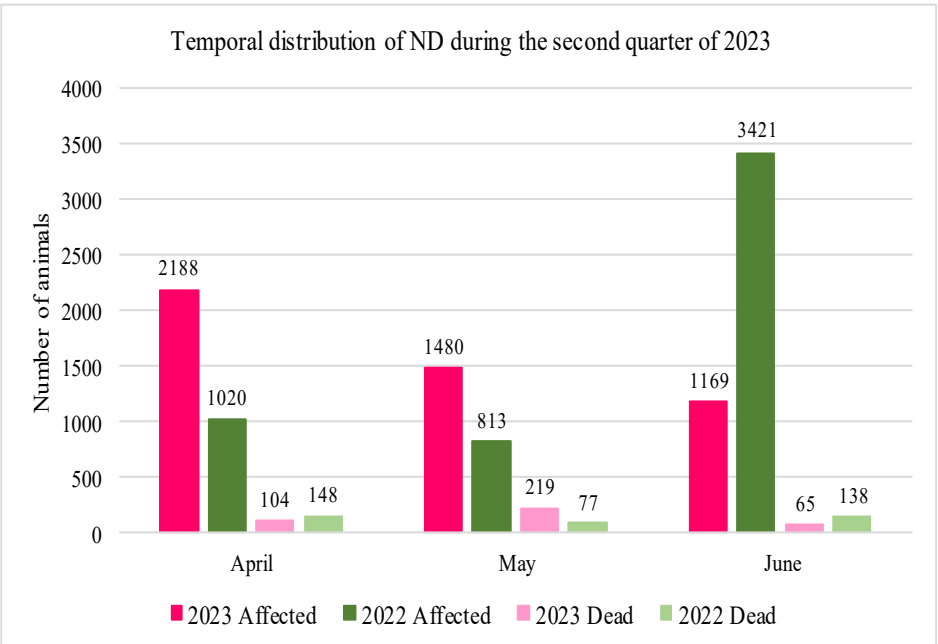
Gamboro (Infectious Bursal Disease) is one of a main viral disease in Sri Lanka which affect the poultry industry. Since this is a highly contagious disease with high morbidity and high mortality rates, vaccination of birds at very young age is practiced in Sri Lanka as the main preventive measure.

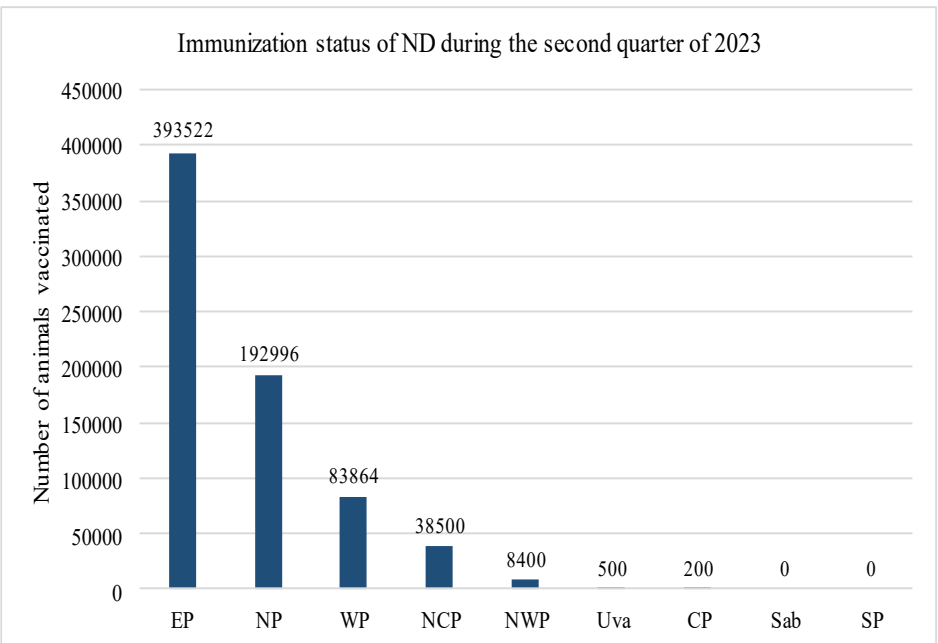
During the second quarter of 2023, low number of cases were reported, when comparing to 2022. Totally 1209 cases were reported with 97 deaths in six provinces of the country. It is a 72.53% reduction of affected birds number. Highest number of cases (698 cases) were reported from Eastern province as 57.73% of total affected population. Second Highest number of cases were reported from Sabaragamuwa province as 232 cases with 2 deaths representing 19.18% disease incidence. Most significant difference in disease incidence is reported from North Western province as 94.19% reduction in incidence than previous year same quarter. Least amounts of cases were reported from Central and Southern provinces of the country. During the same quarter of both years, North Central and Western provinces didn't report any Gumboro disease outbreak.

Temporally highest number of cases were reported in June of current year (717 cases), representing 59.3% of total number of cases. Previous year also, highest number of cases (2293 cases) were reported in June of the corresponding quarter as 52.09% of total affected birds. But monthly disease incidence of June has been remarkably reduced in 2023 by 68.73%. According to the reported data, highest affected: death ratio (65.18) also was reported in June month of 2023 and lowest was reported from May of 2023 as 2.75.

2.2.3 Newcastle Disease:







Newcastle disease is the mainly concern avian disease in Sri Lanka due to it's huge potential to negatively affect on the poultry industry of the country.

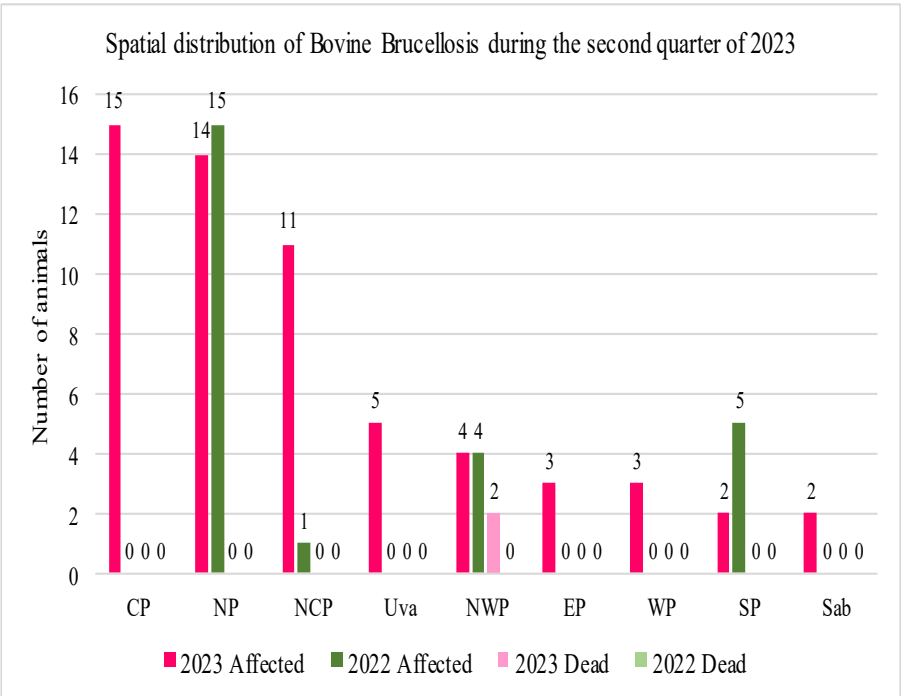
During the second quarter of 2023 total diseased cases were reported as 4837 with 388 deaths. It is a 7.93% decrease of total disease incidence when comparing to the same quarter of the previous year. Majority of cases were reported from Eastern province as 2570 cases, which is 53.13% of total number of cases. This is a remarkable increase (over three times) in disease incidence of Eastern province than the second quarter of 2022. Northern province also reported considerable increase in diseased cases by 72.5% while North Central, Sabaragamuwa, Uva and Central province reporting significant reduction in disease incidence.

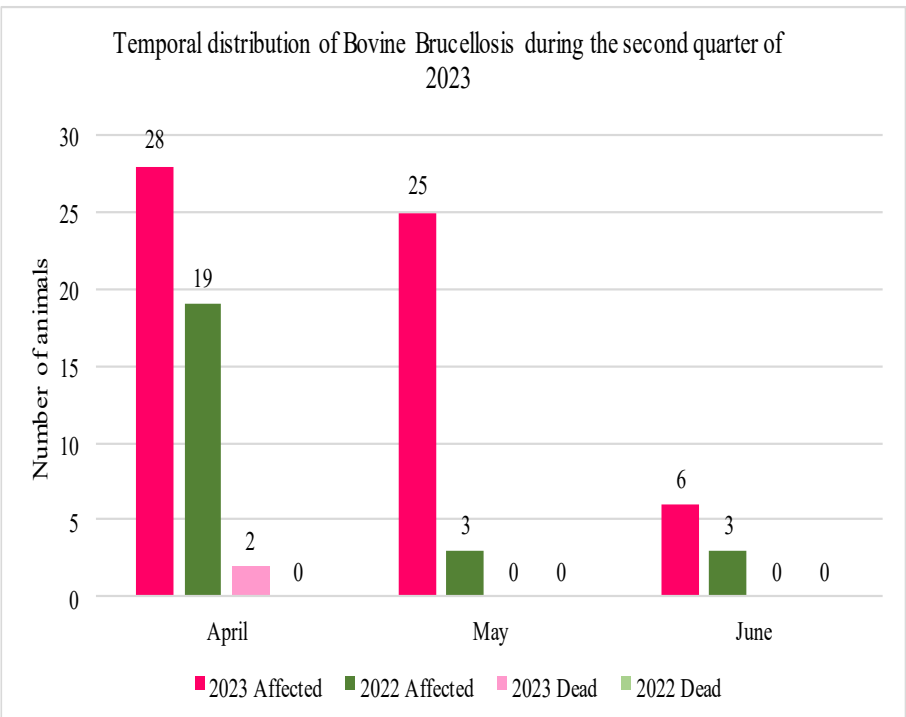
Temporal distribution of the ND shows the highest incidence in April month, representing 45.23% of cases. The disease incidence throughout the period of 2023 second quarter is show gradual reduction and the average number of cases per month is 1612. But it has been significantly deviated from the distribution pattern of the corresponding quarter of the previous year.

Under preventive vaccination program carry out by DAPH, cumulatively 717982 birds were vaccinated against ND, during the second quarter of 2023.

3. Status of Zoonotic Diseases - Second Quarter (April - June) - 2023

3.1 Bovine Brucellosis :





Brucella control program	
Number of milk samples screened by VIOs with MRT	705
No. of animals screened by VIOs in suspected herds with RBPT	364
Number of samples submitted by VIOs to VRI for CFT	158
Number of susceptible animals vaccinated with S19 vaccine	768
Total number of samples subjected to RBPT (by VRI)	192
Number of RBPT positive samples	107
Number of CFT positive samples	91

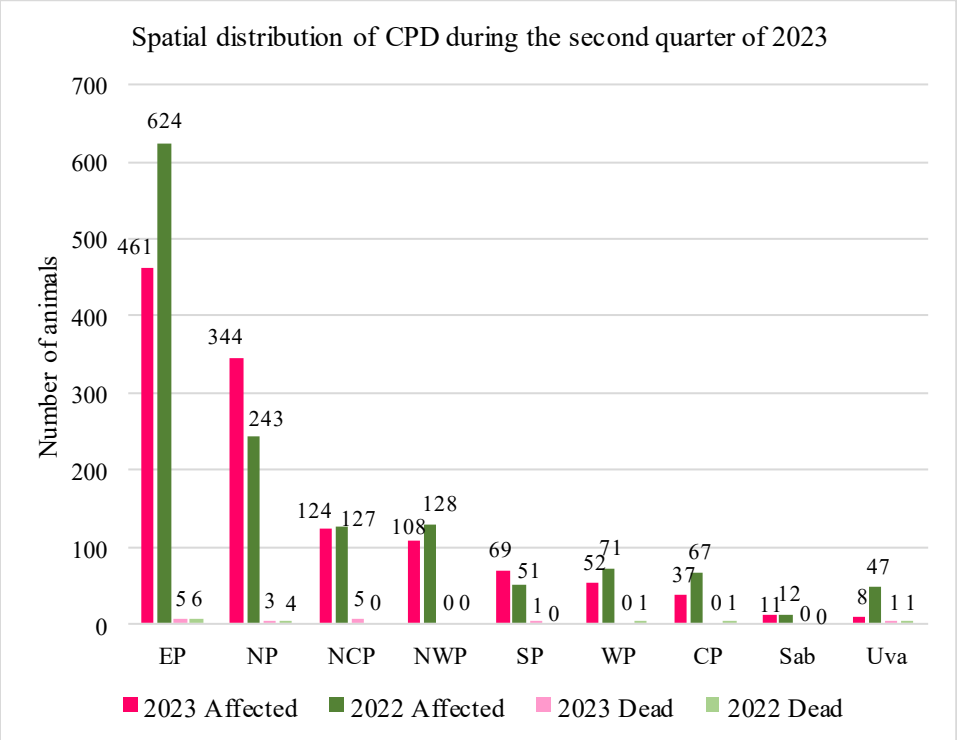
In the second quarter of 2023, Bovine brucellosis has been reported from all nine provinces of Sri Lanka. Among them, highest incidence was reported from Central province as 15 cases, while lowest incidence was from Sabaragamuwa and Southern provinces as 2 cases.

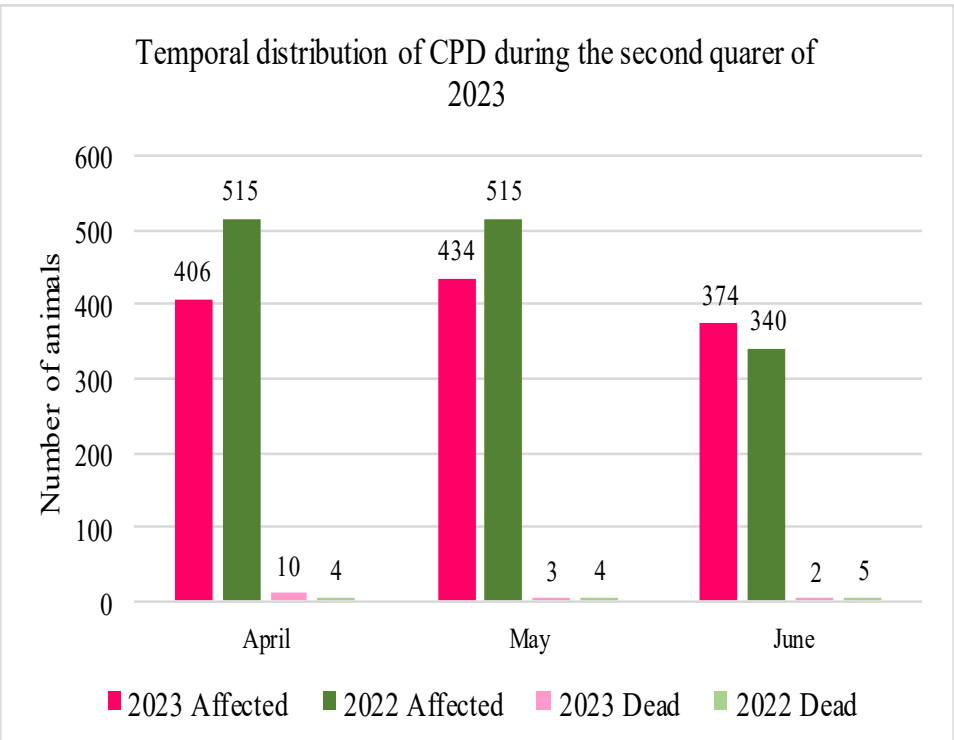
Though the disease incidences of each month of both quarters are significantly different from each other, their temporal distributions show similar patterns. Highest disease incidence was reported in April month as 28 cases with 2 deaths.

In conclusion, both graphs clearly show the increase in reported number of affected animals in 2023 second quarter than the corresponding quarter of 2022. The increment is over 100%.

In order to control the Brucellosis in Sri Lanka, Brucellosis Vaccination and Surveillance Program are conducted with the collaboration of VICs and VRI. Under this program, 768 female calves were vaccinated with S19 Brucella vaccine during the second quarter period of 2023. 705 dairy farms were screened by VIOs to identify the infected farms. Further, 364 animals in Milk ring Test (MRT) positive farms were subjected to Rose Bengal Plate Test (RBPT). Totally, 192 samples were tested with RBPT by VRI and 107 of them were positive. 85% of RBPT positive samples were got positive for CFT, confirming the presence of Brucella in 91 samples.

3.2 Contagious Pustular Dermatitis:





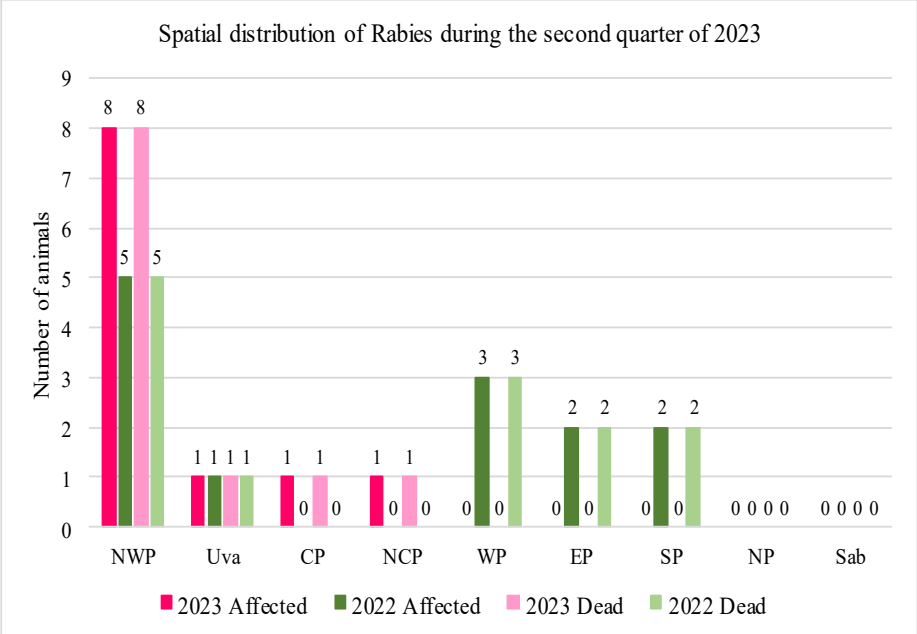
Contagious Pustular Dermatitis is a common caprine disease in Sri Lanka, which usually report from all nine provinces of the country during the all four quarters.

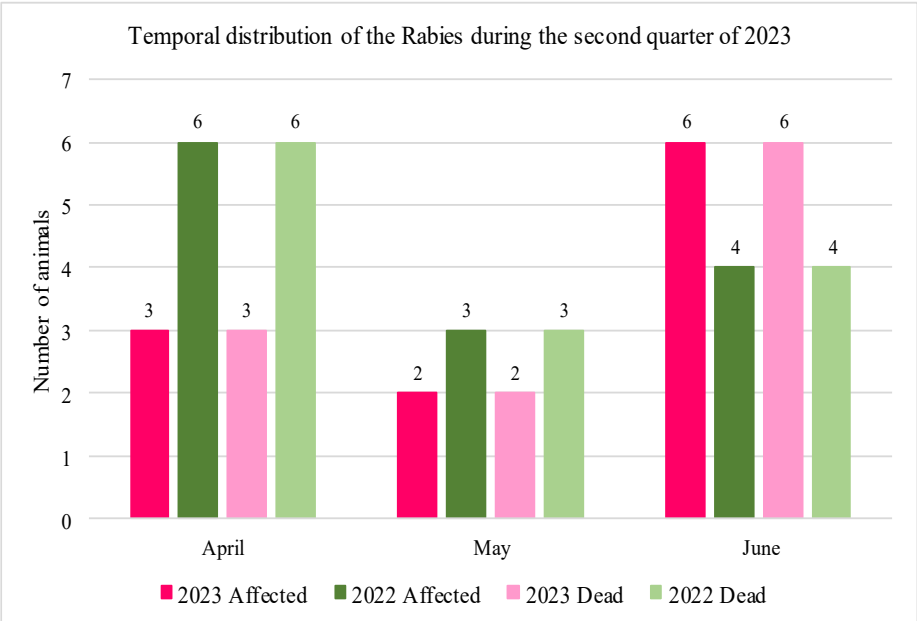
The total number of cases reported during the second quarter of 2023 was 1214 cases and 15 deaths. It is 11.38% reduction in reported cases, as 1370 cases and 13 deaths were reported during the same time period of previous year. Highest number of cases were reported from Eastern province, it is 37.97% from total reported CPD cases. Lowest number of cases were reported from Uva province as 8 cases. According to the spatial distribution of second quarter of both years, more similar distribution patterns can be seen with highest number of cases from Eastern and Northern provinces respectively where have higher goat population.

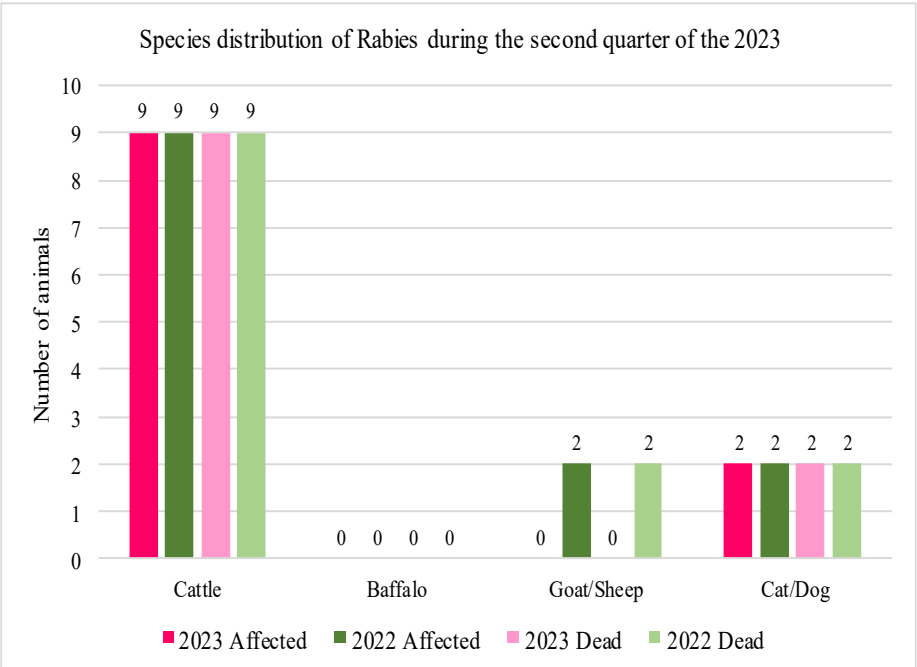
Temporal distribution patterns also show similarities in disease trends during the second quarter of 2023 and 2022. In 2023, highest number of cases has been reported in May month as 434 cases with 3 deaths. Average number of cases per month during the quarter is 403 cases.

In order to control the CPD disease, vaccine production and distribution are done by Veterinary Investigation Officers in each district Veterinary Investigation Center. Under this, totally 19 goat farms were vaccinated during the second quarter of 2023 with the aim of control the disease when outbreaks occurred in goat herds. Out of these 19 farms 12 of them were located in Killinochchi district of Northern province, where usually report higher incidence of the disease.

3.3 Rabies:







Rabies is a fatal disease which can affect mammals like cattle, buffalo, goats, sheep, dogs, cats as well as humans. Though the disease is present in the country, reported rabid cases are less in number according to the disease data of past few years.

During the second quarter of 2023 only cattle and dog/cat cases were reported from four provinces of the country. Totally 11 cases were reported as majority from North Western Province as 8 cases. Uva, Central and North Central Provinces reported one case from each province. During the same quarter of previous year also highest disease incidence was reported from North Western province as 5 cases.

When considering the temporal distribution during the quarter, highest incidence was reported in June month (6 cases) and lowest incidence was reported in May month (2 cases).

Species distribution graph shows over 80% of cases are cattle rabid cases which has similar disease incidence in both considering quarters. Nearly 20% of the reported rabid cases were reported from cat/dog population of the country. Major source for the Rabies in livestock is dog bite or wild animal attacks. In order to minimize the disease risk to humans and animals, routine vaccination of domestic and stray dogs is done by the Health Ministry as well as private veterinary practitioners of the country.

3.4 Highly Pathogenic Avian Influenza:

3.4.1 National HPAI Surveillance Program:

Se. No	District VIC	Serum samples from commercial poultry		Fresh droppings, cage swabs and cloacal swabs of migratory birds & Backyard poultry	
		No. tested	Results	No. tested	Results
1	Ampara	65	Negative	310	Negative
2	Anuradhapura	15	Negative	270	Negative
3	Badulla	15	Negative	8	Negative
4	Batticaloa	15	Negative	90	Negative
5	Chilaw	_	_	585	Negative
6	Colombo	85	Negative	444	Negative
7	Galle	5	Negative	_	_
8	Gampaha	112	Negative	302	Negative
9	Kandy	_	_	125	Negative
10	Kalutara	15	Negative	40	Negative
11	Kegalle	75	Negative	180	Negative
12	Kilinochchi	30	Negative	155	Negative
13	Kurunegala	765	Negative	330	Negative
14	Mathale	61	Negative	204	Negative
15	Mullathivu	21	Negative	10	Negative
16	Polonnaruwa	33	Negative	105	Negative
17	Rathnapura	82	Negative	240	Negative
18	Vavuniya	27	Negative	240	Negative
19	VRI/CVIC	_	_	14	Negative
20	AQ Katunayala	295	Negative	1014	Negative
21	AQ Maththla	_	_	40	Negative
22	AQ Colombo	_	_	6302	Negative
	Total	**1716**		**11008**	

1. No. of serum samples collected	1354
2. No. of dropping samples collected from Hotspots	389
3. No. of cloacal swabs (Backyard) collected	1488
4. No. of sample collected from live bird market	280
5. No. of cloacal swabs collected from pet bird Establishment	303
6. No. of samples (Poultry Processing Establishment)	1125
7. No. of Duck serum samples collected	152
8. No. of Duck cloacal swabs collected	127

Active surveillance program to monitor the Highly Pathogenic Avian Influenza of Sri Lanka, consists with sero-surveillance in commercial poultry and epidemiological surveillance (fresh droppings and cloacal swabs) in migratory birds, pet birds, poultry processing establishments and backyard poultry.

Sample collection is carried out by District Veterinary Investigation Officers, based on the bird population and availability of migratory birds hotspots in their respective districts. During the second quarter of 2023, total collection of serum samples is 1506 from commercial poultry and duck. The number of fresh droppings and cloacal swabs collected from migratory birds hotspots, backyard poultry, pet bird establishment, poultry processing establishments, duck farms and live bird market is 3712.

The collected samples are tested in Animal Virology Laboratory of Veterinary Research Institute. As reported by, out of 1716 number of serum samples and 11008 fresh droppings and cloacal swab samples were tested during this quarter and none of them were got positive for HPAI. During the same quarter of the previous year also test results showed all negative for HPAI. Hence, still Sri Lanka has been able to remain as a disease free country for Highly Pathogenic Avian Influenza.

3.4.2 Global Distribution of Notifiable Avian Influenza:

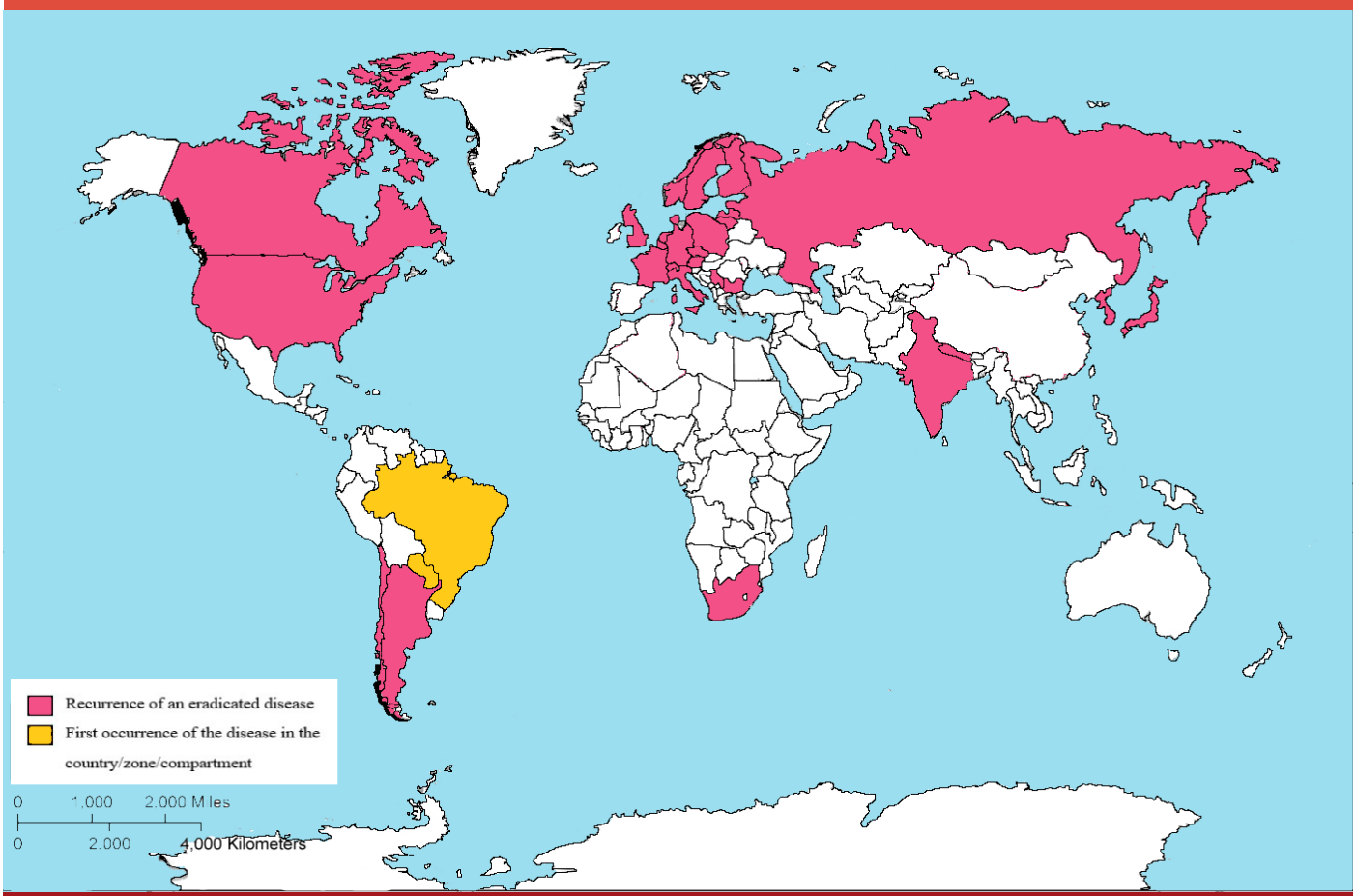
Avian influenza (AI) is a highly contagious viral disease that affects both domestic and wild birds. This complex disease is caused by viruses divided into multiple subtypes (i.e. H5N1, H5N3, H5N8 etc.) whose genetic characteristics rapidly evolve.

According to the information submitted through the World Animal Health Information System of WOAH between 31st March 2023 to 22nd June 2023, High Pathogenicity Avian Influenza has been reported from 22 countries and territories . Out of them 146 outbreaks were occurred in poultry sector and 274 of them were occurred in non-poultry sector. Predominant type of HPAI in world during the period is H5N1.

The affected countries during the period are Germany, Argentina, Canada, Japan, Korea, Hungary, Italy, Austria, Belgium, Czech Republic, Lithuania, Netherland, Russia, United Kingdom, United States of America, Denmark, South Africa, Poland, Sweden, France, Nepal and Finland.

Other than from avian species the virus types were isolated from several unusual hosts including mammals during the considering period. Grey Seal, South American Coati and Red Fox in Germany and Dolphin and Burmeiste's porpoise in Chile. H5N5 was reported from Raccoon in Canada.

3.4.3 Global Situation of Notifiable Avian Influenza outbreaks:



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