



# Veterinary Epidemiological Bulletin Sri Lanka



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## 1. Foot and Mouth Disease: FMDV in Sri Lanka

Foot and mouth disease (FMD) is a highly contagious viral disease that primarily affects cloven-hoofed livestock and wildlife. The foot and mouth disease virus (FMDV) is a member of the genus *Aphthovirus* in the family *Picornaviridae*. There are seven immunologically distinct serotypes—O, A, C, SAT-1, SAT-2, SAT-3 and Asia-1 and over 80 strains within these serotypes. New strains occasionally develop spontaneously.

FMD is endemic in parts of Asia, Africa, the Middle East and South America. In parts of Africa, virus persistence in wild African Buffaloes make eradication unfeasible. North America, New Zealand, Australia, Greenland, Iceland

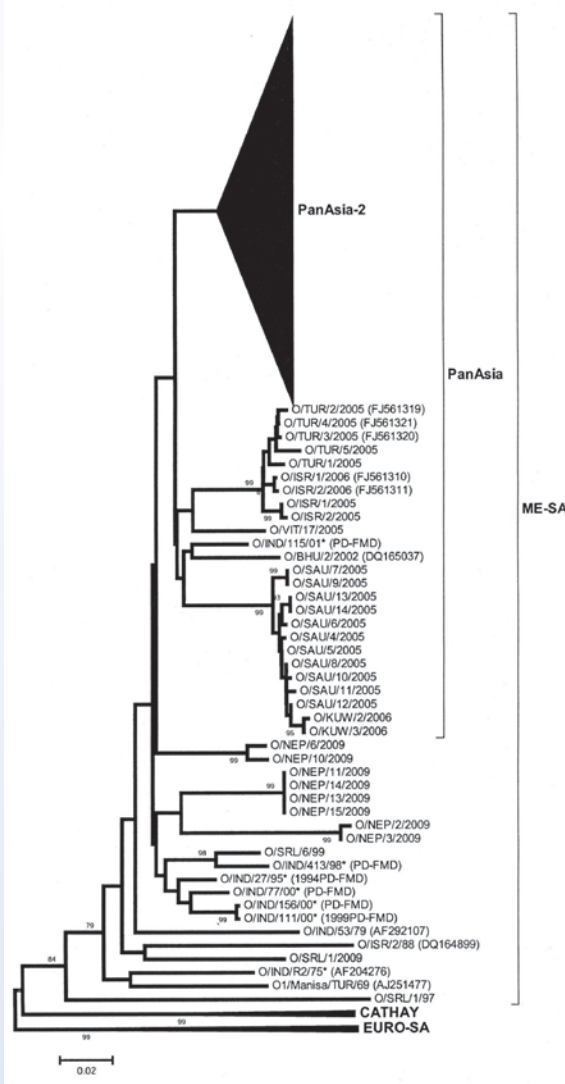
and most of Europe are free of foot and mouth disease.

In total seventy countries have obtained FMD free status from the World Animal Health Organization (OIE). However, more than one hundred countries report the presence of active infection and carry out various disease control programmes.

Though there are seven serotypes of FMDV, only five of these serotypes have been detected since 2007. It is believed that the serotypes C and SAT-3 are no more existing in the natural environment and not circulating among the susceptible population.

Sero type 'O' which is the most common serotype worldwide is the only serotype detected in Sri Lanka too. This serotype has greater genetic diversity which allows classification of eight distinct topotypes. Molecular epidemiological studies reveal the nucleic acid sequence of viruses and thereby the virus strains are determined accurately which assist in strengthening the disease control mechanisms.

For the first time in history a detailed molecular epidemiological study on a Sri Lankan FMDV isolate has been carried out in year 2009 as a joint activity by the Animal Health Division of DAPH and the World Reference Laboratory for FMD, Pirbright, UK.



Topotyping and Genetic Characterization  
of Sri Lankan FMDV

### 2.1.1 Reported Cases of Foot and Mouth Disease : July – December 2009

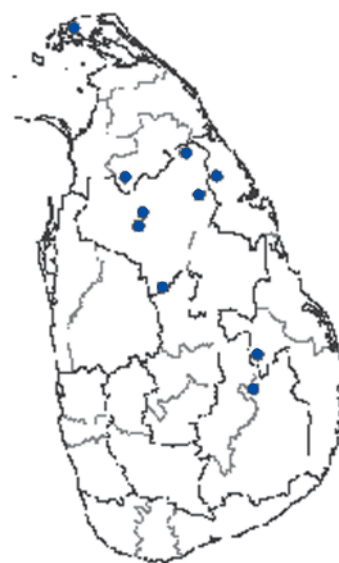


During the second half of the year only two outbreaks of FMD were recorded in the country. They were detected in the FMD endemic zone at Ampara and Trincomalee District in the Eastern Province. The clinical cases were confined to cattle herd and the total number of cases were recorded as 30 with no mortality.

| Month    | District    | VS Range        | Species | Cases |
|----------|-------------|-----------------|---------|-------|
| November | Ampara      | Alayadiwembu    | Bovine  | 19    |
| December | Trincomalee | Echchilampattai | Bovine  | 11    |

### 2.1.2 Reported Cases of Black Quarter : July – December 2009

| Month     | District     | VS Range                  | Species | Cases | Deaths |
|-----------|--------------|---------------------------|---------|-------|--------|
| July      | Ampara       | Padiyatalawa              | Bovine  | 12    | 7      |
|           | Anuradhapura | Nuwaragam Palatha Central | Bovine  | 21    | 18     |
| August    | Anuradhapura | Palagala                  | Bovine  | 2     | 1      |
|           |              | Nuwaragam Palatha Central | Bovine  | 1     | 1      |
|           |              | Horowupothana             | Bovine  | 60    | 1      |
| September | Anuradhapura | Palagala                  | Bovine  | 2     | 1      |
|           |              | Horowupothana             | Bovine  | 45    | 1      |
|           | Jaffna       | Chankanai                 | Bovine  | 30    | 20     |
|           | Trincomalee  | Gomarankadawala           | Bovine  | 1     | 1      |
| October   | Anuradhapura | Horowupothana             | Bovine  | 139   | 8      |
|           |              | Padawiya                  | Bovine  | 1     | 1      |
|           |              | Palagala                  | Bovine  | 1     | 1      |
|           | Jaffna       | Chankanai                 | Bovine  | 5     | 5      |
| November  | Anuradhapura | Horowupothana             | Bovine  | 2     | 1      |
|           |              | Nuwaragam Palatha East    | Bovine  | 2     | 2      |
|           | Vavuniya     | Vengala Cheddikulam       | Bovine  | 14    | 2      |
| December  | Monaragala   | Bibile                    | Bovine  | 32    | 23     |
|           | Anuradhapura | Nuwaragam Palatha East    | Bovine  | 9     | 9      |
|           |              | 10 Veterinary ranges      |         | 379   | 103    |



There is a marked increase in the number of BQ outbreaks during the second half of the year. Furthermore, the number of clinical cases have increased by more than four fold when compared with the situation during the year 2008. The number of deaths encountered too has increased but near to thrice the number recorded in the previous year.

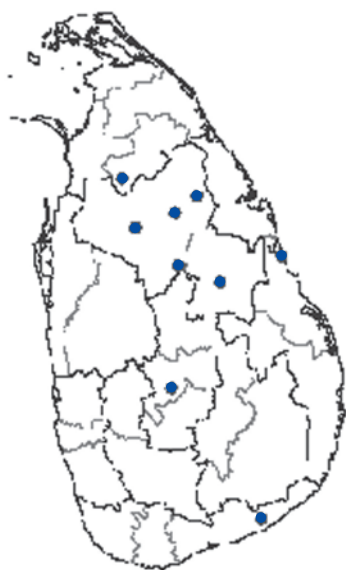
It appears that BQ has been emerging as the major killer

disease among cattle especially in the North-Central province with the disappearance of the former fatal disease Hemorrhagic Septicemia.

However, the lowered case-fatality rate of 26% when compared to 40% during the previous years similar period, indicate the efficiency in veterinary service in early detection and prompt attention thereafter.

### 2.1.3 Reported Cases of Brucellosis : July – December 2009

#### Occurent of Brucellosis : July - December 2009

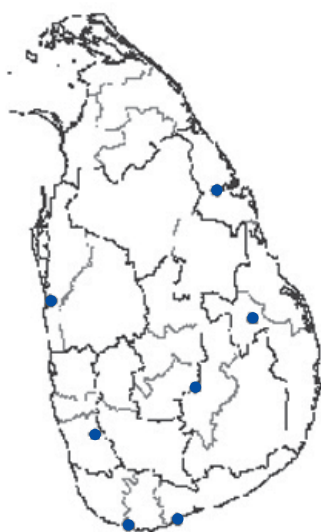


| Month           | District     | VS Range               | Species | Cases |
|-----------------|--------------|------------------------|---------|-------|
| July            | Hambanthota  | Tissamaharama          | Bovine  | 1     |
|                 | Anuradhapura | Palugaswewa            | Bovine  | 6     |
|                 |              | Kahatagasdigiliya      | Bovine  | 5     |
|                 |              | Nuwaragam Palatha East | Buffalo | 3     |
|                 |              | East                   | Bovine  | 1     |
|                 | Polonnaruwa  | Welikanda              | Buffalo | 2     |
| August          | Hambanthota  | Tissamaharama          | Bovine  | 50    |
|                 | Kandy        | Delthota               | Bovine  | 1     |
| September       | Hambanthota  | Tissamaharama          | Bovine  | 20    |
|                 | Polonnaruwa  | Thamankaduwa           | Bovine  | 6     |
| October         | Anuradhapura | Horowupothana          | Bovine  | 35    |
|                 | Vavuniya     | Vengala Cheddikulam    | Bovine  | 10    |
| November        | Hambanthota  | Tissamaharama          | Bovine  | 4     |
| December        | Hambanthota  | Tissamaharama          | Bovine  | 30    |
|                 | Batticaloa   | Vaharai                | Bovine  | 2     |
| July - Dec 2009 | 6 districts  | 11 Veterinary ranges   |         | 176   |

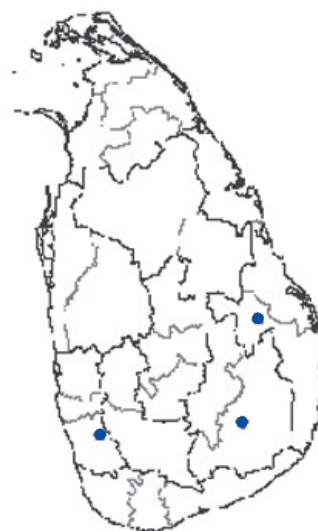
There is an increase in the number of Brucellosis cases (176) reported compared to the corresponding period in the last year (1). Furthermore, the total number of cases recorded during this year is 357. Brucella has been a main cause for abortions in cattle and buffalo in the dry zone. At present vaccination is carried out as a control measure

in affected farms including NLDB farms. However as the disease is reported to be present mainly in the dry zone of the country, it is necessary to take measures to control further spread of the disease by testing animals prior to transport to other areas of the country.

### 2.1.4 Reported Cases of Leptospirosis : July – December 2009



**Bovine**



**Buffalo**

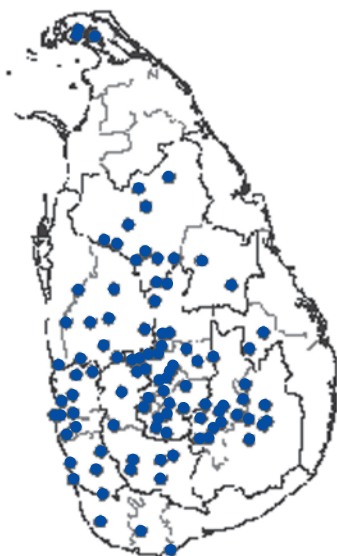
### 2.1.4 Reported Cases of Leptospirosis : July – December 2009

| Month     | District    | Vs Range            | Species | Cases | Deaths |
|-----------|-------------|---------------------|---------|-------|--------|
| July      | Badulla     | Uva Paranagama      | Bovine  | 1     | 0      |
|           | Ampara      | Maha-Oya            | Bovine  | 1     | 0      |
| August    | Badulla     | Uva Paranagama      | Bovine  | 1     | 0      |
|           | Kalutara    | Bulathsinhala       | Buffalo | 1     | 0      |
| September | Hambanthota | Tangalle            | Bovine  | 1     | 0      |
|           | Ampara      | Maha-Oya            | Buffalo | 1     | 0      |
| October   | Matara      | Weligama            | Bovine  | 1     | 0      |
|           | Puttalam    | Arachchikattuwa     | Bovine  | 1     | 0      |
| November  | Puttalam    | Arachchikattuwa     | Bovine  | 1     | 0      |
|           | Trincomalee | Thampalagamuwa      | Bovine  | 5     | 0      |
|           | Kalutara    | Bulathsinhala       | Bovine  | 1     | 0      |
| December  | Monaragala  | Buttala             | Buffalo | 1     | 1      |
|           | Matara      | Weligama            | Bovine  | 2     | 0      |
|           | Ampara      | Maha-Oya            | Bovine  | 1     | 0      |
|           | 8 districts | 9 Veterinary ranges | Total   | 19    | 1      |

The number of outbreaks during the second half of the year has increased to 19 compared to the 6 outbreaks during the first half. Furthermore, the total outbreaks in 2008 were only three.

The reported cases are based on clinical diagnosis of the field Veterinary Surgeons and are not supported by laboratory diagnosis.

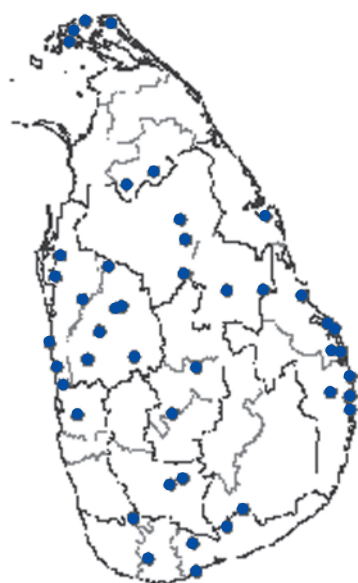
### 2.1.5 Reported Cases of Bovine Babesiosis : July – December 2009



| Month     | Cases | Deaths |
|-----------|-------|--------|
| July      | 161   | 2      |
| August    | 178   | 5      |
| September | 121   | 3      |
| October   | 144   | 6      |
| November  | 147   | 3      |
| December  | 165   | 7      |
| Total     | 916   | 26     |

During the second half of the year 916 cases and 26 deaths were recorded while 921 cases and 33 deaths were recorded during the corresponding period during the previous year. The number of cases and the area of occurrence of bovine babesiosis during the corresponding period of current year has not varied significantly compared to last year. High producing, genetically upgraded animals are mostly affected by Bovine Babesias. The disease has been present throughout the year without much variation in monthly incidences.

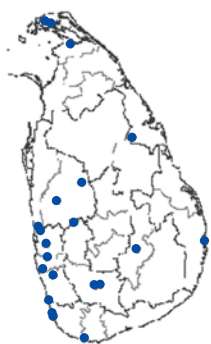
### 2.2.1 Reported Cases of Contagious Pustular Dermatitis : July – December 2009



| District     | Cases | Deaths |
|--------------|-------|--------|
| Ampara       | 179   | 5      |
| Polonnaruwa  | 56    | 0      |
| Kurunegala   | 42    | 0      |
| Batticaloa   | 37    | 0      |
| Puttalam     | 32    | 0      |
| Jaffna       | 29    | 0      |
| Vavuniya     | 25    | 0      |
| Kandy        | 23    | 1      |
| Anuradhapura | 19    | 0      |
| Monaragala   | 11    | 0      |
| Matara       | 10    | 0      |
| Hambanthota  | 7     | 0      |
| Ratnapura    | 6     | 0      |
| Gampaha      | 2     | 0      |
| Trincomalee  | 2     | 0      |
| Galle        | 1     | 0      |
|              | 481   | 6      |

Higher incidences of CPD has been recorded from Eastern, North Western and North Central part of the country where goat husbandry is popular. Ampara has recorded 179 cases with 5 deaths which is the highest figure for this period. The total number of cases recorded in 2009 is 1035 compared to 875 cases in 2008.

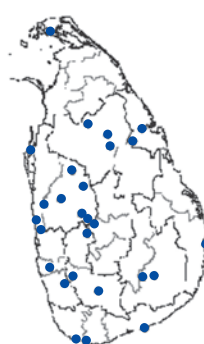
## 2.3 Reported Cases of Rabies : July – December 2009



**Bovine**



**Buffalo**



**Caprine**



**Canine**



**Ovine**

| Species | Deaths |
|---------|--------|
| Bovine  | 46     |
| Buffalo | 1      |
| Canine  | 65     |
| Caprine | 31     |
| Ovine   | 8      |
| Total   | 151    |

During the period under review there were 151 rabies cases recorded by field Veterinarians. During the same period last year 128 cases were reported.

### 2.4.1 Reported Cases of Newcastle Disease : July – December 2009



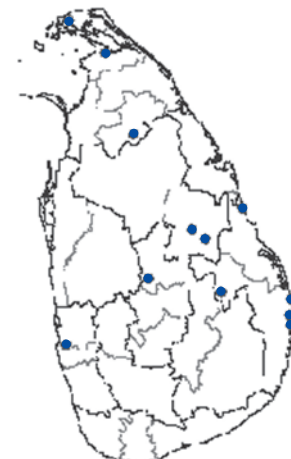
**July**

|        |       |
|--------|-------|
| Cases  | : 106 |
| Deaths | : 30  |



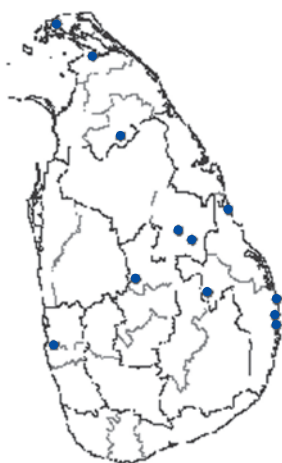
**August**

|        |       |
|--------|-------|
| Cases  | : 176 |
| Deaths | : 43  |



**September**

|        |       |
|--------|-------|
| Cases  | : 125 |
| Deaths | : 72  |



**October**

|        |       |
|--------|-------|
| Cases  | : 267 |
| Deaths | : 77  |



**November**

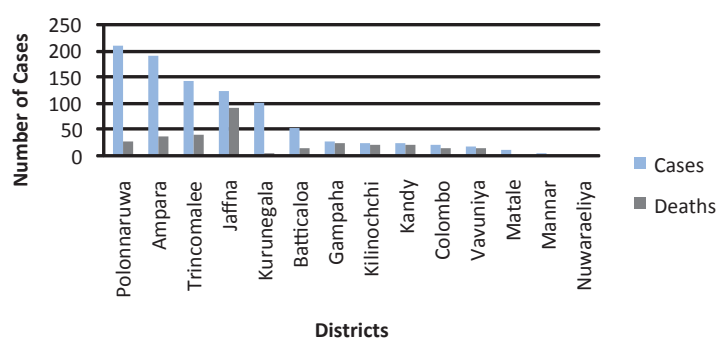
|        |      |
|--------|------|
| Cases  | : 91 |
| Deaths | : 46 |



**December**

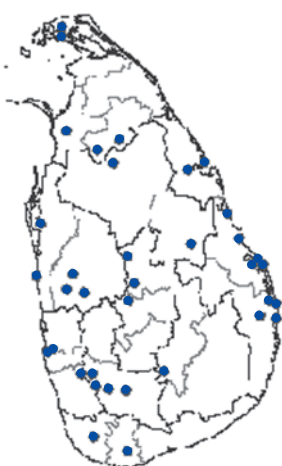
|        |       |
|--------|-------|
| Cases  | : 171 |
| Deaths | : 31  |

**NCD Cases : July - December 2009**



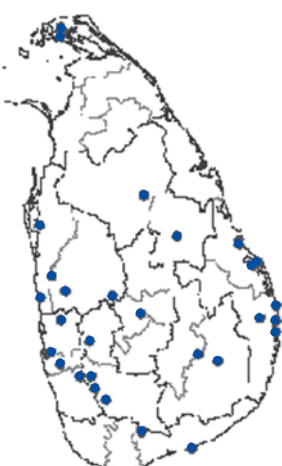
During the period under review there is an increase in the number of cases recorded compared to the 134 cases recorded during the same period in 2008.

## 2.4.2 Reported Cases of Fowl Pox : July – December 2009



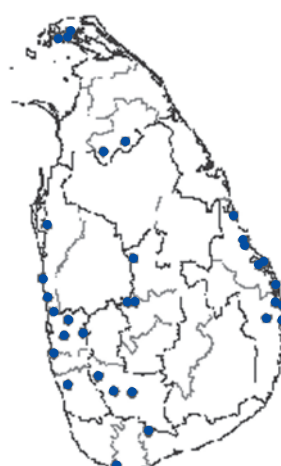
**July**

|        |       |
|--------|-------|
| Cases  | : 504 |
| Deaths | : 85  |



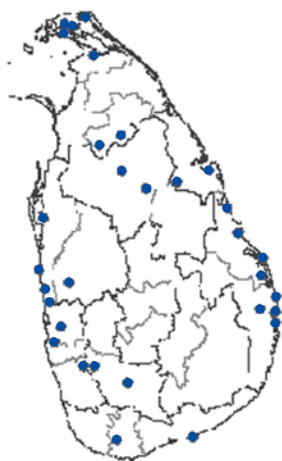
**August**

|        |       |
|--------|-------|
| Cases  | : 587 |
| Deaths | : 35  |



**September**

|        |       |
|--------|-------|
| Cases  | : 190 |
| Deaths | : 42  |



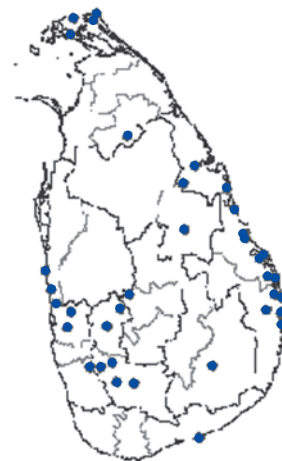
### October

Cases : 567  
Deaths : 79



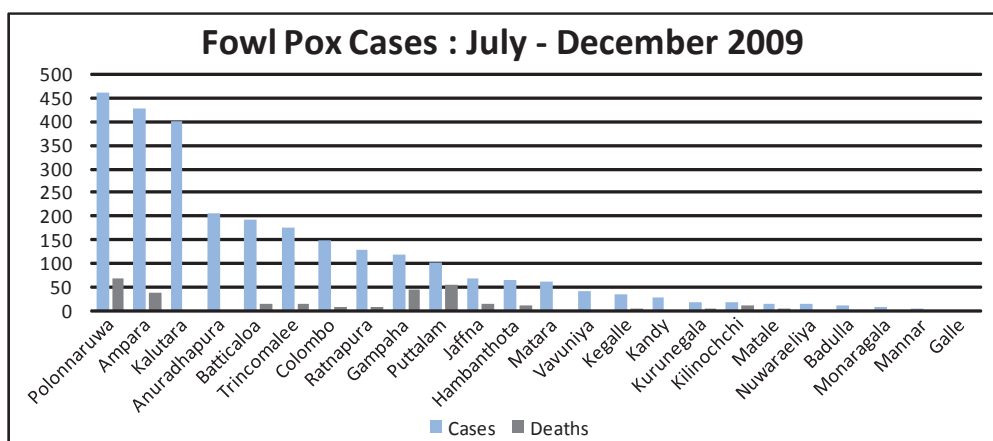
### November

Cases : 240  
Deaths : 22



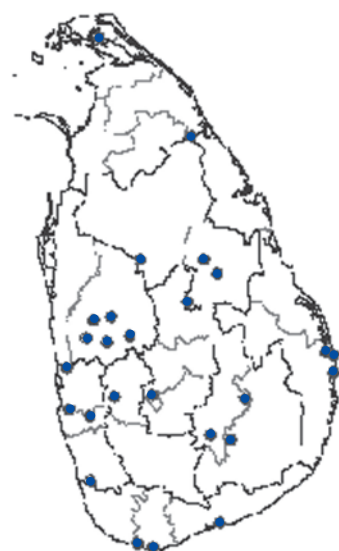
### December

Cases : 660  
Deaths : 35



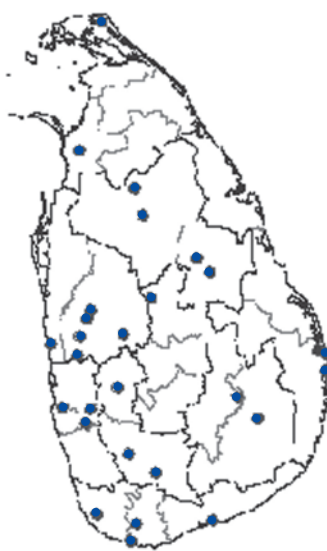
Cases of Fowl Pox has been reported from all the districts except for Mullathivu in the country. Higher incidences were detected at Polonnaruwa, Ampara and Kalutara Districts.

## 2.4.3 Reported Cases of Infectious Bursal Disease : July – December 2009



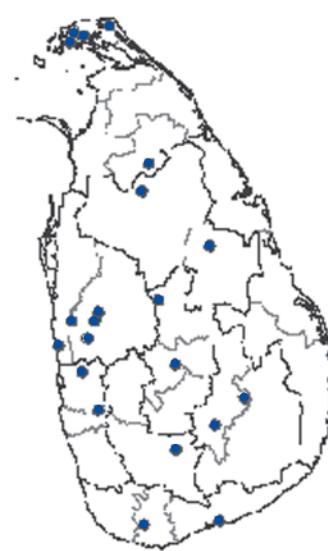
### July

Cases : 2883  
Deaths : 530



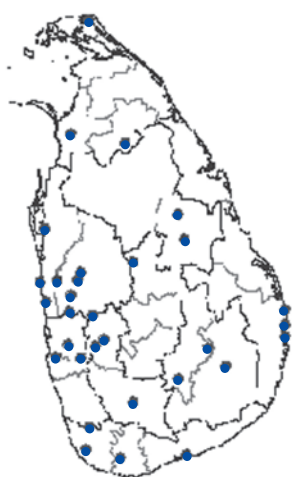
### August

Cases : 3087  
Deaths : 862



### September

Cases : 3859  
Deaths : 1132



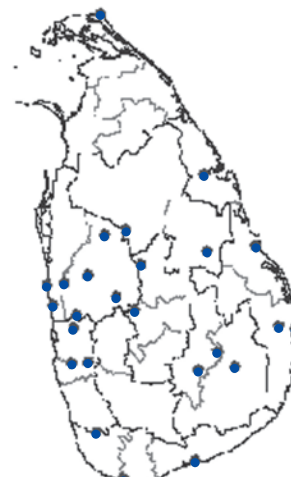
**October**

Cases : 5635  
Deaths : 2310



**November**

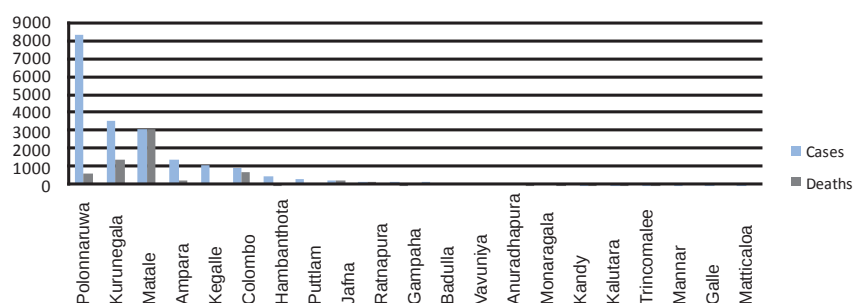
Cases : 808  
Deaths : 596



**December**

Cases : 3808  
Deaths : 1483

### Infectious Bursal Disease Cases : July - December 2009



IBD remains as the number one disease affecting poultry though it is vaccine preventable. With the improvement in disease reporting by Veterinarians it may increase further in the future. During 2009, 32640 cases and 11220 deaths have been reported. Although vaccines are available in the market deaths due to Gumboro is high. It is evident that bio-security of farms play a major role in controlling poultry diseases particularly in small farms in the country.

### 2.4.4 Reported Cases of Avian Salmonellosis : July – December 2009



| Month     | District    | VS Range        | Cases | Deaths |
|-----------|-------------|-----------------|-------|--------|
| July      | Kurunegala  | Ridigama        | 4     | 4      |
|           |             | Panduwas Nuwara | 123   | 108    |
|           | Jaffna      | Nanthavil       | 4     | 1      |
|           |             | Uduvil          | 1     | 1      |
| August    | Galle       | Habaraduwa      | 153   | 151    |
|           | Kurunegala  | Panduwas Nuwara | 139   | 128    |
|           | Jaffna      | Nanthavil       | 7     | 7      |
|           |             | Karaveddi       | 20    | 12     |
|           | Ampara      | Sammanthurai    | 180   | 90     |
|           |             | Chenkalady      | 5     | 5      |
|           |             | Kiran           | 4     | 4      |
|           |             | Vakarai         | 9     | 1      |
| September | Kurunegala  | Panduwas Nuwara | 126   | 111    |
|           | Jaffna      | Nanthavil       | 15    | 8      |
|           |             | Karaveddi       | 20    | 15     |
|           |             | Chenkalady      | 3     | 3      |
|           | Batticaloa  | Kiran           | 3     | 3      |
|           |             | Habaraduwa      | 356   | 350    |
|           | Ampara      | Sammanthurai    | 100   | 20     |
| October   | Kurunegala  | Panduwas Nuwara | 56    | 49     |
|           | Galle       | Elpitiya        | 400   | 85     |
|           |             | Vakarai         | 2     | 1      |
|           |             | Kiran           | 4     | 4      |
|           | Ampara      | Irakkamam       | 2     | 2      |
|           |             | Nallur          | 5     | 5      |
|           | Kilinochchi | Karaveddy West  | 18    | 12     |
|           |             | Uduvil          | 4     | 4      |
|           | Jaffna      | Puttalam        | 100   | 50     |
|           | Puttalam    | Puttalam        | 100   | 50     |
| November  | Kurunegala  | Panduwas Nuwara | 39    | 32     |
|           | Batticaloa  | Kiran           | 2     | 2      |
|           | Kalutara    | Bandaragama     | 41    | 40     |
|           | Jaffna      | Karaveddi       | 21    | 12     |
| December  | Badulla     | Passara Town    | 5     | 5      |
|           | Galle       | Elpitiya        | 400   | 28     |
|           | Jaffna      | Karaveddi       | 55    | 35     |
|           |             | Uduvil          | 3     | 3      |
|           |             | Total           | 2429  | 1391   |

### 3. Novel Influenza A H1N1

As of February 2010, more than 213 countries and overseas territories or communities have reported laboratory confirmed cases of pandemic influenza H1N1, this includes 16,713 deaths. The World Health Organization (WHO) is actively monitoring the progress of the pandemic and has not changed the pandemic alert level yet.

Currently the disease is more active in Southeast Asia. However, lower levels of pandemic virus circulation persist in other parts of Asia and in Eastern and South-eastern Europe. In West Africa pandemic influenza virus

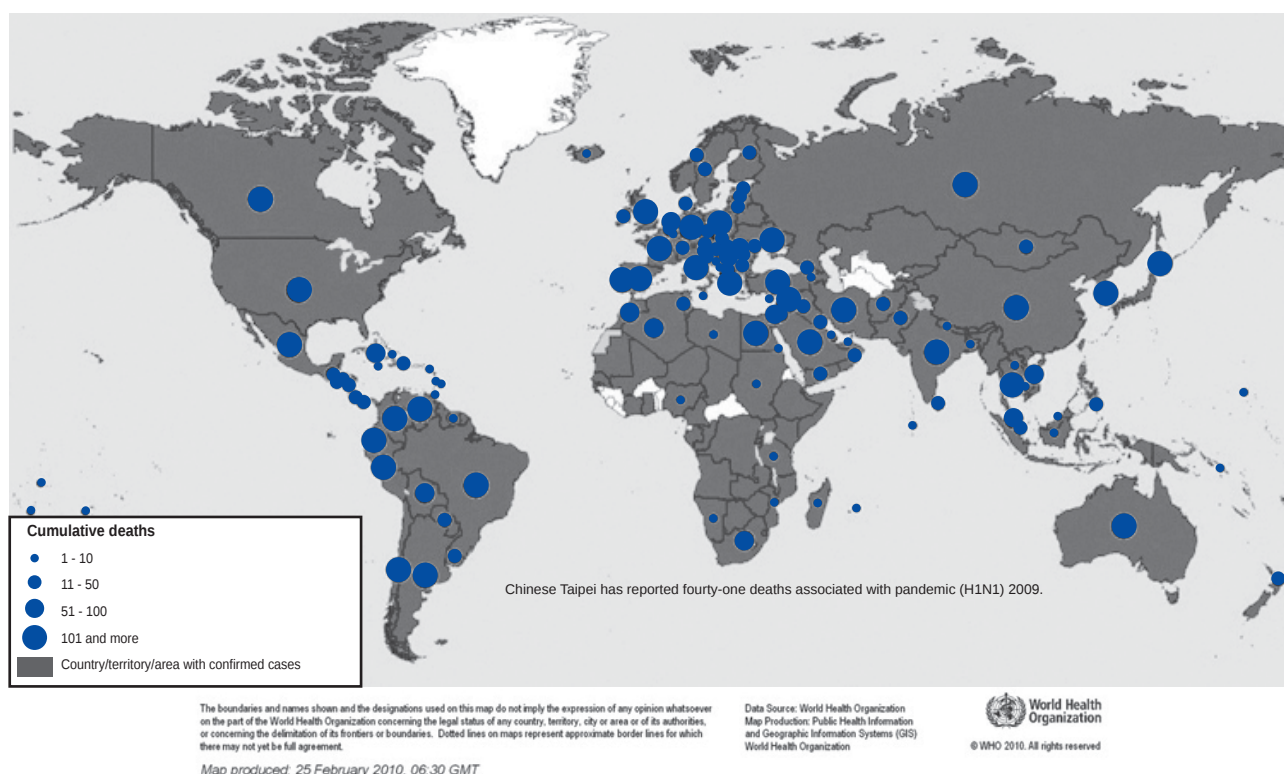
transmission may be increasing in that region. It is believed that much of eastern and southern Africa likely experienced an earlier peak in pandemic influenza activity during November 2009 and late summer 2009, respectively.

In South and Southeast Asia, pandemic influenza virus transmission remains most active in Thailand, especially since mid January 2010. In Bangladesh, an increasing trend in respiratory disease was reported; however, overall influenza activity remains low. In India, influenza virus transmission persists at lower levels in the western region of India, while activity in other regions has largely subsided.

#### Pandemic (H1N1) 2009

Status as of 21 February 2010

Countries, territories and areas with lab confirmed cases and number of deaths as reported to WHO



In the temperate zone of the southern hemisphere, overall influenza activity remained low, with sporadic detections of pandemic and seasonal influenza viruses. Although pandemic influenza virus continues to be the predominant circulating influenza virus worldwide, circulation of seasonal influenza B viruses continue to increase and spread across Asia, parts of Eastern Europe, and Eastern Africa, but most notably in China, Mongolia, Iran and the Russian Federation.

According to the Epidemiology unit of the Ministry of Health in Sri Lanka there are 642 confirmed cases reported by the end of February 2010 in the country and all districts except Jaffna and Kilinochchi had reported confirmed cases up to February. It is of the view that the present wave of the outbreak is declining. Since all

suspected patients were not investigated to identify the virus these numbers may largely underestimate the true case-load in the country. It is worth note here that to control further spread of the disease some schools were closed for few days during the peak of the outbreaks.

Moreover, the speculations that swine transmit the disease directly to humans have now been diminished among the locals due to the educations carried out by the mass media and relevant government departments.

The lessons learned from the influenza outbreak could be used to control HPAI outbreaks if occurs in the country. However the impact of inaccurate information by media to the general public could destroy the poultry industry in few weeks.

## 4. Salmonella Surveillance in Sri Lanka

The Department of Animal Production and Health (DAPH) has been involved in Salmonella control for long time by conducting various control programmes in poultry breeder farms. The official intensive control programme for salmonella was launched in 2001 with serological screening of all breeder flocks for *Salmonella gallinarum* and *S. Pullorum* at age of birds in 16 wks to 32 wks. It was initially commenced in Poultry breeder Farms as a voluntary program supported by DAPH and subsequently in 2003 it became a mandatory programme. But it covered only 3 to 4 flocks in a farm and therefore not sufficient to identify the organisms and also missed the most susceptible stage of production chain. On the other hand, the incidence of *Salmonella gallinarum* from commercial chicks has become increased in trend in the recent past. Further, some Veterinary Investigation Centres successfully isolated public health important *Salmonella enteritidis* from hatcheries and Breeder birds too. On the other hand the farms with reactors of less than 1% have increased when compared to first half of the year indicating the increased prevalence of the disease.

Twelve hatcheries out of thirty eight were found to be free of salmonella on bacteriological test carried out by Veterinary Investigation Officers (VIOO) in 2009

### Hatcheries with negative results for Salmonella isolation

1. Pussella Farm
2. Three Acre Farms
3. Marawila Farm
4. Our Lady of Lourdes Farm
- 5 Sandalankawa
6. Three Star Farm
7. Babywatte Farm
8. Red Farm
9. Miriswatte Farm
10. Nelna Breedres Farm
11. Nel Farm
12. MLE Farm

### Breeder farms with <1% reactor rate on Salmonella Testing during 2009

1. Aladin Farm
2. Nawgala Breeder Farm
3. Dalugama Hatcheries
4. Green Valley Farm
5. Kawatayagoda Farm
6. Pussella Farm
- Kosgama
- Gurulana
7. Nisadini Farm
8. Three Acre Farms
- Kosgama
- Meegoda
- Halwathura
- Makulwatta
- Wewalpanawa
9. Marawila Farm
10. Our Lady of Lourdes Farm
11. Sandalankawa Farm
12. Three Star Farm
13. Babywatte Farm
14. CIC Farm
15. Red Farm
16. Miriswatte Farm
17. Nelna Breeders Farm
18. Regional Hatchery, Uppaveli
19. Bairaha Farm–
- Kottaramulla
- Urapola
- Kondagahamulla
- Hiripitiya
20. Nel Farm
21. Marist Brother's Farm
22. Ravi Farm
23. Midland Breeders
24. Dikkanda Farm
25. CPRS, Karandagolla
26. Fortune Farm - Galewela
27. Three Acre GP Farm- Kosgama

## 5.1. HPAI Surveillance in Sri Lanka

HPAI Sero Surveillance programmes continued in the second half of the year 2009. The number of samples collected and tested are almost double the number of

samples collected in the first half of the year. HI test for H5, H7, H9 were negative for all the samples.

### Laboratory findings of samples collected for HPAI surveillance - 2009

| District     | Serum Samples |                                       |                                            |                              |
|--------------|---------------|---------------------------------------|--------------------------------------------|------------------------------|
|              | No: collected | No : Tested for Avian Influenza Virus | No : of reactors for Avian Influenza Virus | HI test results for H5,H7,H9 |
| Colombo      | 415           | 90                                    | 18                                         | (-- ve                       |
| Gampaha      | 600           | 90                                    | 5                                          | (-- ve                       |
| Kalutara     | 255           | 25                                    | 21                                         | (-- ve                       |
| Kandy        | 615           | 90                                    | 32                                         | (-- ve                       |
| Matale       | 316           | 60                                    | 17                                         | (-- ve                       |
| Nuwaraeliya  | 270           | 60                                    | 11                                         | (-- ve                       |
| Galle        | 180           | 60                                    | 5                                          | (-- ve                       |
| Matara       | 210           | 30                                    | 4                                          | (-- ve                       |
| Batticaloa   | 135           | 58                                    | 8                                          | (-- ve                       |
| Ampara       | 290           | 60                                    | 6                                          | (-- ve                       |
| Trincomalee  | 120           | -                                     | -                                          | -                            |
| Kurunegala   | 2420          | 200                                   | 40                                         | (-- ve                       |
| Puttalam     | 1162          | 236                                   | 35                                         | (-- ve                       |
| Anuradhapura | 315           | 60                                    | 5                                          | (-- ve                       |
| Polonnaruwa  | 240           | 240                                   | 6                                          | (-- ve                       |
| Badulla      | 150           | 74                                    | 3                                          | (-- ve                       |
| Monaragala   | 105           | 30                                    | 14                                         | (-- ve                       |
| Ratnapura    | 350           | 30                                    | 1                                          | (-- ve                       |
| Kegalle      | 309           | 43                                    | 23                                         | (-- ve                       |
| <b>TOTAL</b> | <b>8679</b>   | <b>1536</b>                           | <b>254</b>                                 |                              |

## 5.2. HPAI World Situation

The most recent HPAI Outbreaks occurred in 2010 January in Bangladesh, Egypt, India, Israel and Viet Nam.

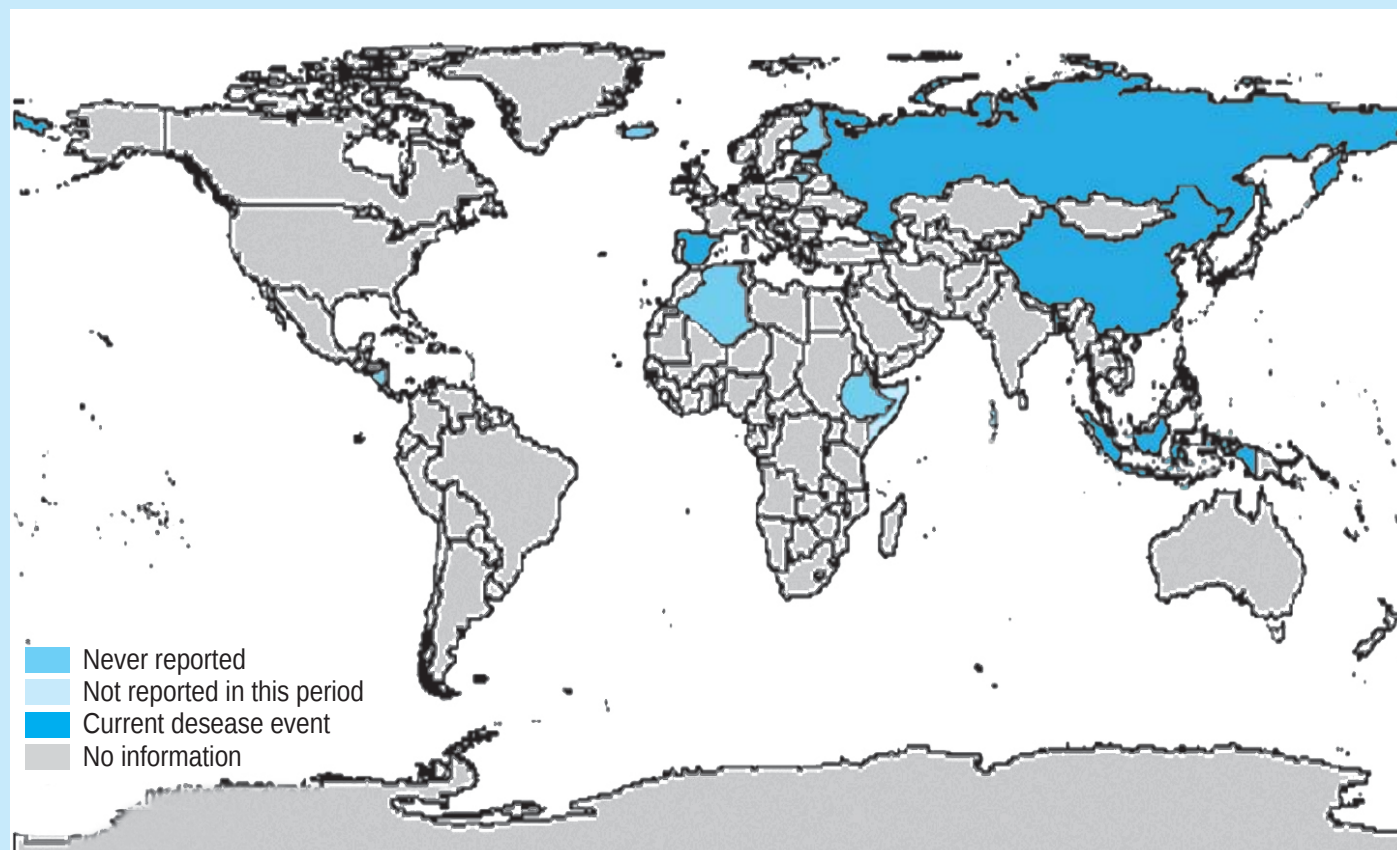
In 2009 the outbreaks were detected in Cambodia, China (Hong Kong), Indonesia, Russian Federation, Mongolia, China, Germany, Lao PDR and Nepal. In South Asia , Sri Lanka,

Bhutan and Maldives never experienced the disease and remain as free of HPAI.

So far it has killed 292 humans, killed or forced the culling of more than 260 million birds, caused an estimated \$20 billion of economic damage across the globe .

## HPAI Situation in the World : July – December 2009

### Disease distribution map



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