



Veterinary Epidemiological Bulletin Sri Lanka



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Control of Infectious Bursal Disease (Gumboro)

1.1 Introduction

Infectious Bursal Disease (IBD) is a highly contagious viral infection of young chicken. The disease was first recognized in Gumboro, Delaware, USA in 1962. The disease is very important to the poultry industry worldwide since the virus cause immunosuppression in birds leading to increased susceptibility to other diseases and negative interference with effective vaccination. Very virulent strains of IBD virus has been spreading in Europe, Latin America, South-East Asia, Africa and Middle East countries in recent years.

1.2 Epidemiology

Gumboro disease is caused by a virus of the genus *Avibimavirus* of the family *Birnaviridae*. The disease is characterized by destruction of lymphocytes in the bursa of fabricius and to lesser extent in other lymphoid organs. The chicks around 3-6 weeks old show severe acute disease with high mortality. Occurrence in younger birds is usually asymptomatic but cause permanent and severe damage to bursa of fabricius. These chicks have reduced antibody response for vaccination and are highly susceptible for concurrent or secondary infections.

Immune system cells (lymphocytes) of the chicks mature in the bursa of Fabricius to become antibody producing cells until the age of 10 weeks. Once the virus damages the bursa of fabricius in young chicks, and then they will not be capable to produce sufficient numbers of lymphocytes leading to immunosuppression of affected birds. Since majority of field infections are subclinical, it causes more economical damage to the poultry industry.

1.3 Clinical Signs

The clinical disease often shows in birds from 3 to 6 weeks of age. Clinical signs include dehydration, trembling, ruffled feathers, vent pecking and depression. Initially the bursa of Fabricius is swollen and hyperemic, serosal surface is covered with gelatinous yellowish transudate. Five days after infection, the bursa of fabricius gets atrophy. Hemorrhages may be seen in thigh and pectoral muscles.

Chickens infected with IBD virus shed the virus in their feces contaminating the poultry house environment. Other chickens in the poultry house are infected by ingesting the contaminated materials. The virus is resistant to many disinfectant and environmental factors and remains infectious for at least four months in the pen. Therefore once the poultry pen becomes contaminated with IBD virus, the disease tends to repeat in subsequent flocks.

1.4 Diagnosis

Diagnosis of the disease in a flock involves the disease history of the flock, clinical signs and necropsy lesions. During later stages of the disease it is difficult to confirm a diagnosis of IBD by examining only atrophied Bursa of fabricius, as other diseases like Marek's, Mycotoxicosis generates similar lesions. The infection in chicks less than 3 weeks of age is usually subclinical due to maternal antibodies. Therefore diagnosis is made by histopathology, serology or virus isolation in suspected chicks.

1.5 Control and Prevention

An effective bio-security program, breeder vaccination program and vaccination program for commercial chickens

plays much more crucial role in prevention of IBD in the field.

Breeder vaccination is very important in controlling IBD in commercial birds since the maternal antibodies protect the chicks against subclinical infection and titer of vaccinated birds has to be monitored always.

Vaccination of commercial flocks against IBD prevents the clinical disease. There are three categories of vaccines based on pathogenicity as mild, intermediate and virulent. Intermediate types of vaccines are more commonly used for commercial poultry in Sri Lanka. Virulent form (Plus Vaccines) is used in the subsequent batches of chicks after any confirmation of IBD cases for 3 cycles. IBD plus vaccines are not allowed to be registered in Sri Lanka for sale; and usage allowed under "User Permits" with the recommendation of Range Veterinary Surgeon and the District Veterinary Investigation Officer.

A thorough cleaning of the infected site is required to prevent the infection in subsequent batches. All infected litter and carcasses of infected birds must be disposed properly away from the poultry operation. A thorough well planned disinfection procedure must be implemented with disinfectants like Iodine, Peroxygen and Glutaldehyde. Minimum of 2 weeks resting period for the pens should be maintained between successive poultry flocks

2. Status of Livestock Diseases

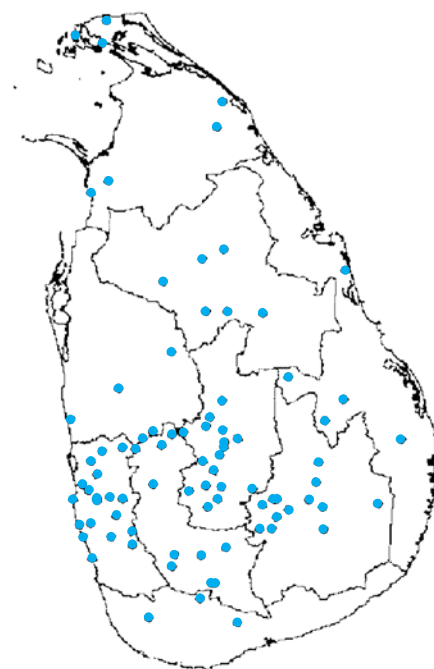
2.1 Bovine Diseases

2.1.1 Bovine Babesiosis

A total of 613 cases and 26 deaths due to Bovine babesiosis were reported during the first quarter of 2013 which is very much similar to situation in the previous year too. Since last year pre-immunization of calves has been carried out in the field through the district level Veterinary Investigation Centres. A total of 252 calves have been pre-immunized during this period in three districts as shown below.

Pre-immunization Jan - Mar 2013

District	No. of Animals pre-immunized
Kandy	152
Colombo	80
Matale	20
Total	252



2.1.2 Bovine Brucellosis :

Brucellosis has been reported at Kinniya, Kaduwela, Mannar, Siyambalanduwa, Oddusudan and Musali Veterinary Ranges during first quarter of 2013.

Vaccination of heifer calves and cows using locally produced S19 Brucella vaccine in order to control the spread of infection is being carried out in the country under the guidance of Veterinary Investigation Officers together with the field Veterinary Surgeon. In total 1226 animals have been vaccinated against brucellosis during the period under review.

2.1.3. Foot and Mouth Disease :

There were no Foot and Mouth Disease outbreaks reported during the first quarter of the year 2013. However 69,550 doses of Foot and Mouth Disease vaccine was locally produced during this period to immunize the susceptible cattle & buffalo population in identified locations. Furthermore vaccination was carried out at Colombo,

Gampaha, Kalutara, Hambantota, Anuradhapura, Polonnaruwa, Ampara, Trincomalee and Ratnapura Districts. And a total of 46,834 animals have been vaccinated against Foot and Mouth Disease during the period under review.

2.1.4 Mastitis :

There were 2969 cases of mastitis reported in the country affecting cattle, buffalo and goat in all the districts during the first quarter of the year 2013. The highest number of cases of 384 was reported in Kurunegala district followed by Ampara district (280 cases). Udder infusions of two different types containing two different antibiotics namely Amoxicillin & Cloxacillin were produced by the Department of Animal Production & Health for free distribution among the field Veterinary Surgeons in order to treat bovine mastitis cases promptly & economically. Accordingly 990 vials of intramammary infusions containing Amoxicillin & 880 vials containing Cloxacillin have been produced during the first quarter of 2013.

Monthly distribution of Mastitis Jan - Mar 2013

Month	Cases
January	948
February	1058
March	963
Total	2969

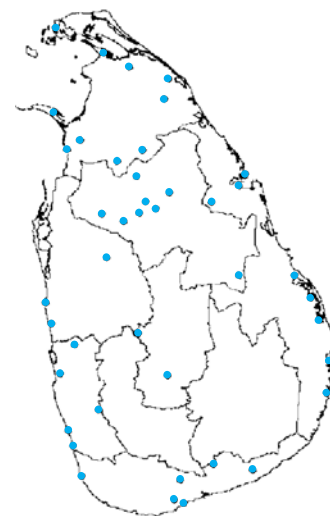
2.2 Caprine Diseases

2.2.1 Contagious Pustular Dermatitis :

Total number of 467 cases of Contagious Pustular Dermatitis with 2.78% case-fatality rate was reported in the country during first quarter of the year 2013. The highest number of cases of 153 were recorded in Eastern Province followed by Northern Province (93 cases). Auto vaccines have been prepared at Veterinary Investigation Centres in order to vaccinate the remaining animals in the flock which successfully protect them from the disease.

Distribution of CPD cases Jan - Mar 2013

Month	Cases	Deaths
January	154	7
February	193	2
March	120	4
Total	467	13



2.3 Rabies :

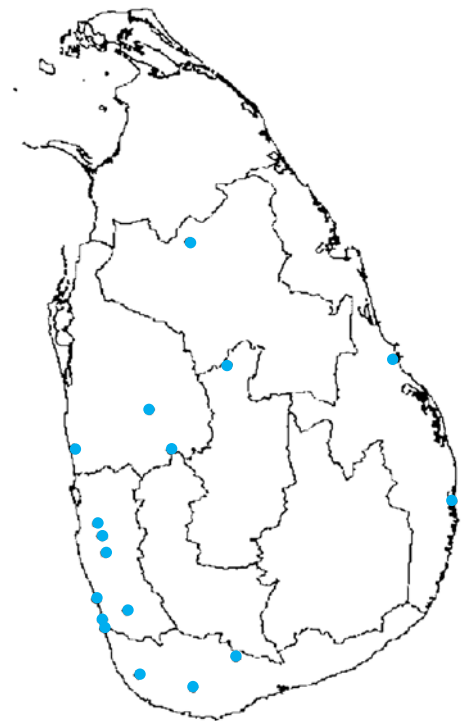
Rabies cases in cattle have been reported in many locations in Western Province and also in Southern and North-Western provinces during the first quarter of the year 2013. Most of these cases have been due to known dog bites. Though there were cases of rabies in dogs which is the major species affected by the disease, reporting of canine cases appear to be very low by the Government Veterinary Surgeons, perhaps due to the fact that most of the canine cases are attended by the private Veterinary Clinics in the country.

Since rabies is a zoonotic disease which is also endemic in Sri Lanka and affects human population leading to fatality, the Ministry of Health has taken several measures including post-exposure treatment in suspected patients in order to protect those who have been bitten by dogs that had not been adequately proven to be free of rabies.

The national rabies control programme which has been launched by the Ministry of Health has been expanded in 2012 and the Department of Animal Production & Health has been recognized as the collaborative institute in the national control programme with active participation in animal rabies control activities.

**Animal Rabies Cases
(Jan - March) 2013**

Month	Cases	Deaths
January	13	13
February	10	10
March	17	17
Total	40	40

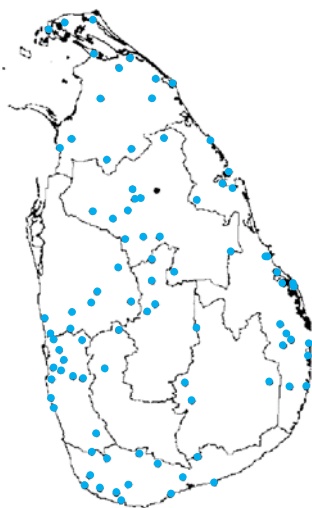


**Location of Rabies in Cattle
Jan - Mar 2013**

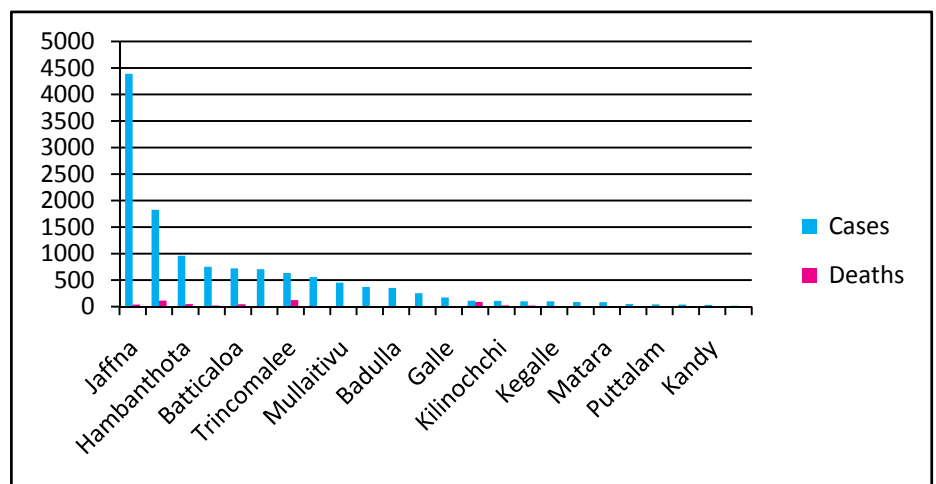
2.4 Poultry Diseases

2.4.1 Fowl Pox :

There were 12,923 cases and 575 deaths among poultry due to Fowl Pox during the first quarter of 2013. The disease was reported in all the provinces in the country and nearly 70% of the total cases were reported from Northern and Eastern Provinces.



**Spatial distribution of Fowl Pox
Jan - March 2013**



Occurrence of Fowl Pox at District level

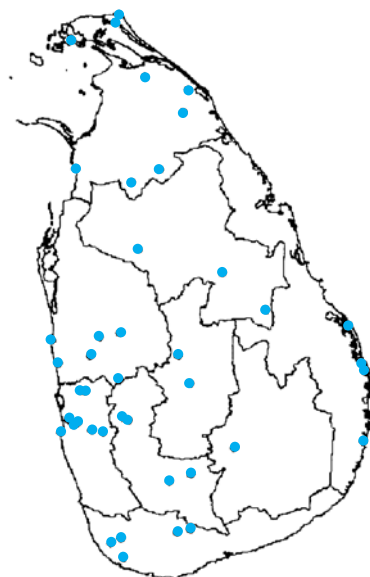
2.4.2 Gumboro Disease :

Total of 32,509 cases and 8,648 deaths due to Gumboro disease were reported in first quarter of 2013. The highest number of cases of 23,990 during this period were reported in North Western Province which also has the highest poultry population in the country.

Distribution of Gumboro Cases Jan - Mar 2013

Month	Cases	Deaths
January	4455	297
February	22685	7722
March	5369	629
Total	32509	8648

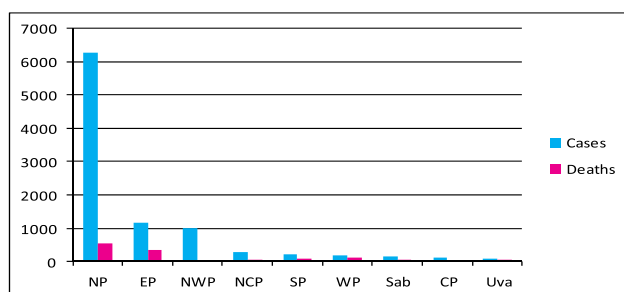
Gumboro disease is controlled generally by the IBD “intermediate vaccine” which is used in commercial and breeder operations. In addition to this, the “IBD Plus” vaccine is allowed to be used in order to control outbreaks under strict supervision. In total 3.02 million doses of “IBD Plus” vaccine has been imported into the country during the period under review.



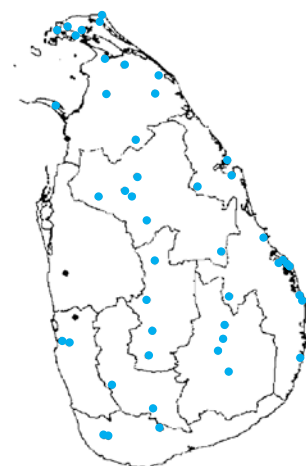
2.4.3 Newcastle disease :

There were 9466 cases and 1269 deaths reported in the country during the period under review. Except for Matara, Colombo, Kegalle and Puttalam districts, the cases were reported in all other districts. The highest number of cases were reported in Northern Province (6257 cases) followed by Eastern Province (1166) and North Western Province (1000) respectively.

In addition to the imported Ranikhet vaccine 449,445 doses of locally produced vaccine was used in the country during the first quarter of this year especially to protect the birds in small or medium scale operation and also in backyard poultry.



Occurrence of NCD at Provincial Level



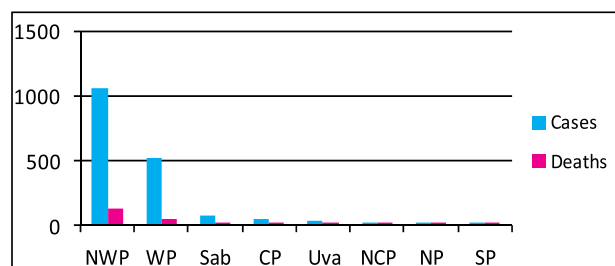
2.4.4 Salmonellosis :

The highest number of cases were reported in North Western Province (1062) followed by Western Province during the first quarter of the 2013.

Not only *S.Gallinarum Pullorum* and *S.Gallinarum Gallinarum* but also *S.Enteritidis* was isolated from these infected farms.

In order to reduce the losses of commercial flocks, vaccination in poultry breeder farms was allowed for 2 years since 2012.

Accordingly 12 poultry breeder farms have initiated vaccination and parent birds are vaccinated against Salmonellosis in their farms.



Reported cases and deaths of Salmonellosis

Following poultry breeder farms and hatcheries were tested by the DAPH for salmonellosis during January to March 2013 under Salmonella control programme.

Air Force Farm, Dambulla	MLE Farm, Thambuththegama
Aladin farm, Watthegama	Nawagala Farm, Yatawatta
Babywatta Farm/New Bernard, Udubaddawa	New Anthony's Farm, Attanagalla
Fortune GP farm, Galewela	Nishadini Farm, Kaduwela
CIC Farm, Kotadeniyawa	Nova Farm, Ratthota
Gayan Farm, Serukele	Pussella Farm, Kosgama
Karandagolla Farm, Kundasale	Ravi Farm, Ganemulla
Marawila Farm, Marawila	Regional Hatchery Trincomalee
Miriswatta Farm, Horana	Regional Hatchery Vavuniya
Uplands farm, Galaha	Sandalanka Farm, Sandalankawa

3. Highly Pathogenic Avian Influenza Surveillance Programme

3.1 National HPAI Surveillance; January - March 2013

Active surveillance against Highly Pathogenic Avian Influenza has been continued since 2010 in the country. This included the sero- surveillance in commercial poultry and clinical surveillance on migratory birds and backyard poultry; 1153 serum samples and total of 924 pooled droppings and cloacal samples were collected representing 11 districts in the country during the first three months of the year 2013. All the sample were declared as negative for the Highly Pathogenic Avian Influenza Virus and this result was confirmed by the Animal Virus Laboratory at Pollgolla.

Se No.	District	Serum samples	(Commercial poultry)	Pooled dropping and cloacal swabs	
		No. tested	Results	No. tested for AIV *	Results
1	Badulla	30	(-)ve	30	(-)ve
2	Colombo	135	(-)ve	30	(-)ve
3	Gampaha	0		10	(-)ve
4	Hambantota	36	(-)ve	80	(-)ve
5	Jaffna	180	(-)ve	150	(-)ve
6	Kandy	60	(-)ve	0	
7	Kurunegala	90	(-)ve	0	
8	Matale	15	(-)ve	0	
9	Nuwara Eliya	0		15	(-)ve
10	Puttlam	0		77	(-)ve
11	Vavuniya	30	(-)ve	0	
	Total	576		392	
	Animal Quarantine Station	577	(-)ve	532	(-)ve
	Grand total	1153		924	

* Avian Influenza Virus

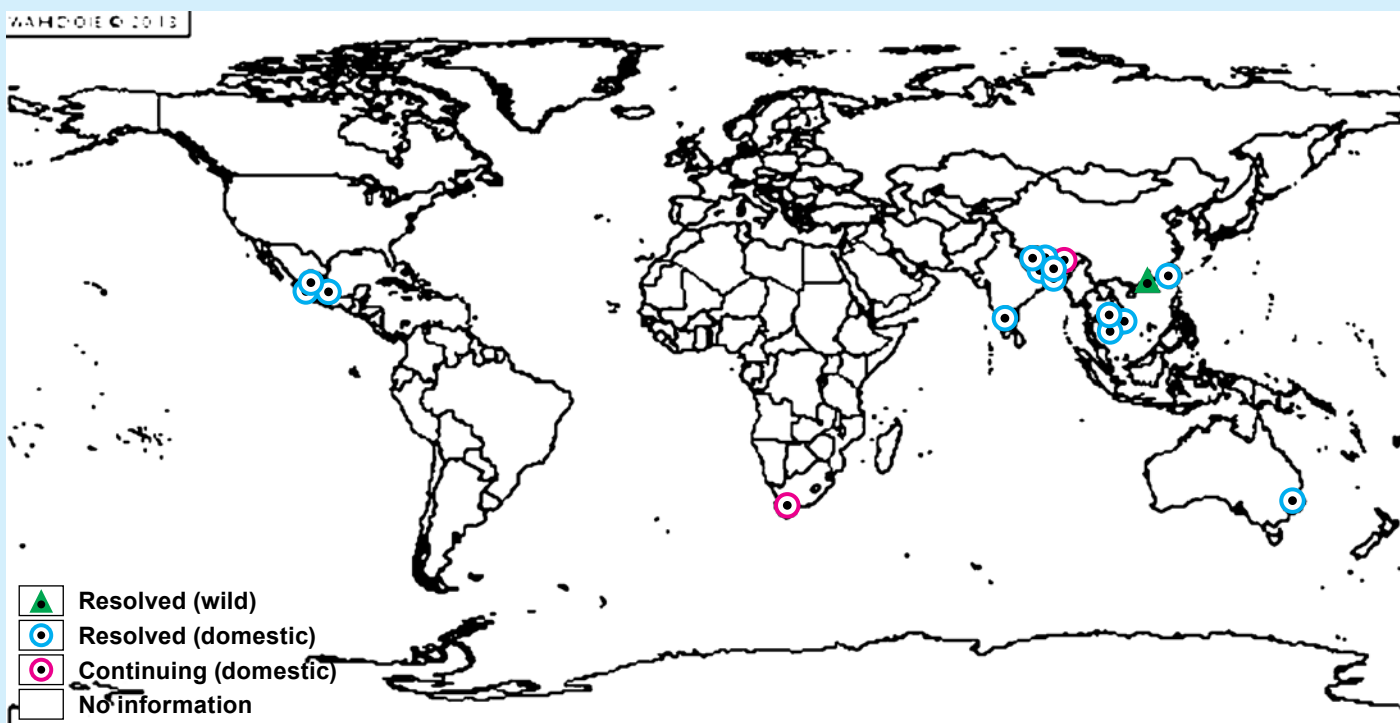
Monthly disease status report from the following Veterinary Ranges have not been received during the period under review;

Province	January	February	March
Central	Panwila Teldeniya Rattota Ukuwela	Galaha Wattegama Yatinuwara Hatton Kotmale Rikillagaskada	Galagedara Nuwara-Eliya
Eastern	Padavisripura Seruwila	Dehiattakandiya	Damana Kinniya
North Central	Mahailuppallama Palagala Welioya	Mahailuppallama Palagala Welioya Aralaganwila	Mahailuppallama Welioya
Northern	Kanagarayankulam Thunukkai Vali South	Kanagarayankulam Vavuniya South	Kanagarayankulam Pachchilippalai Vali South
Western	Udahamulla Moratuwa Attanagalla Bulathsinhala Padukka	Udahamulla Biyagama Divulapitiya Bandaragama Walallawita Horana	Kalutara Panadura Attanagalla Bulathsinhala Walallawita
North Western	Chilaw Dankotuwa Kalpitiya Mahakumbukkadawala Mundalama Serukele Bingiriya Kurunegala	Chilaw Pannala Kalpitiya Mahakumbukkadawala Mundalama Serukele Rasanayakapura Arachchikattuwa Mawathagama Narammala	Alawwa Nikaweratiya Kalpitiya Mahakumbukkadawala Mundalama Serukele
Sabaragamuwa	Undugoda Kalawana	Godakawela Weligepola	Kaltota
Southern	Gonapinuwala Dikwella Thissamaharama Angunakolapalassa	Elpitiya	Karandeniya Tangalle Thissamaharama
Uva	Medagama Sevanagala Mahiyanganaya	Medagama	Medagama Bandarawela

3.2 Global Distribution of Notifiable Avian Influenza: January - March 2013

Virus Type	Country
H5N1	Bangladesh, Cambodia, China, Nepal, Butan, Hong Kong (SAR/PDC), India, Germany
H5N2	Chinese Taipei,
H7N3	Mexico
H7N7	Australia, Netherland

3.3 Global Situation of Highly Pathogenic Avian Influenza Outbreaks Jan - Mar 2013



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