OCT 24

GLOBAL PROTECTION SERVICE

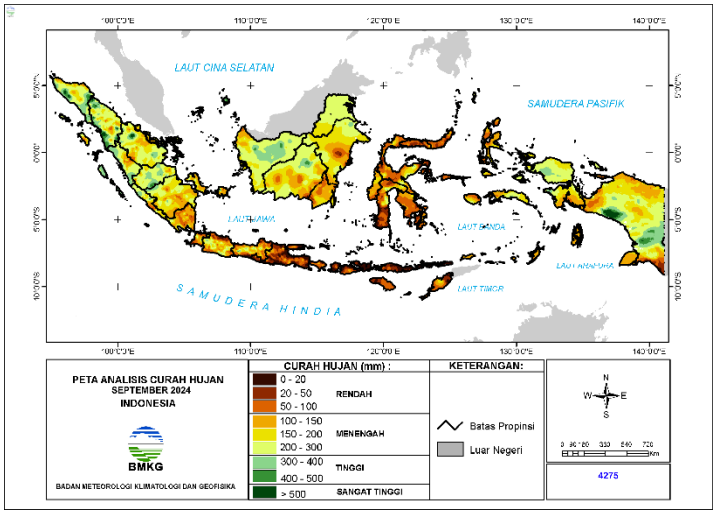
DISEASE SURVEILLANCE REPORT
Ceva Animal Health Indonesia

Five Most Reported Poultry Diseases in September 2024

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Monitoring diseases program have been carried out in the centres of poultry farming areas in two major islands in Indonesia, Sumatra and Java. Data collection was carried out by a team of veterinarians from Ceva Animal Health Indonesia in their responsibility areas. The diagnose was based on clinical symptoms and post-mortem analysis of the affected flocks. Laboratory tests for confirmation were carried out whenever necessary and possible.

The Indonesian BMKG data analysis for September 2024 showed, the average relative humidity (RH) in the atmosphere generally ranges between 56 - 73%. The average surface temperature is 27°C. Rainfall analysis for the month were varies, from low criteria (33%), medium (49%), and high – very high criterias (19%). 64% of Indonesia's territoriy were entered to dry season. Detail of this weather report can be access in https://www.bmkg.go.id.



In order to 'bring out' the best genetic capabilities of a breed, a farmer needs to

provide a comfortable environment and fresh air exchange in the farmhouse. This goal becomes a tough challenge amidst extreme seasonal changes. Failure of rearing management to anticipate the weather changes can cause the emergence of various diseases in poultry houses. In September 2024, there were total of 57 cases reported from 19 different diseases or condition – broilers reported 27 cases while layers reported 30 cases. Five most prominent diseases will be explained further based on the area of occurrence. From the highest, those five diseases are Chronic Respiratory Disease and Complicated Chronic Respiratory Disease each with 8 reports or 14% of the total reports, followed by Infectious Bronchitis with 6 cases (11%), Newcastle Disease with 5 cases (9%), and Infectious Bursal Disease with 4 cases (7%). Other diseases were Avian Influenza H9, Heatstress and Coccidiosis each with 3 cases (5%), Avian Metapneumovirus, Mycotoxicosis, Necrotic enteritis, DOC Quality, Deficiency Calcium, and Post Vaccinal Reaction each with 2 cases (4%). And the rest of the reports are Inclusion Body Hepatitis, Helminthiasis, Infectrious Coryza, Feed Quality and Egg Drop Syndrome each with 1 case (2%) consecutively.

CRD

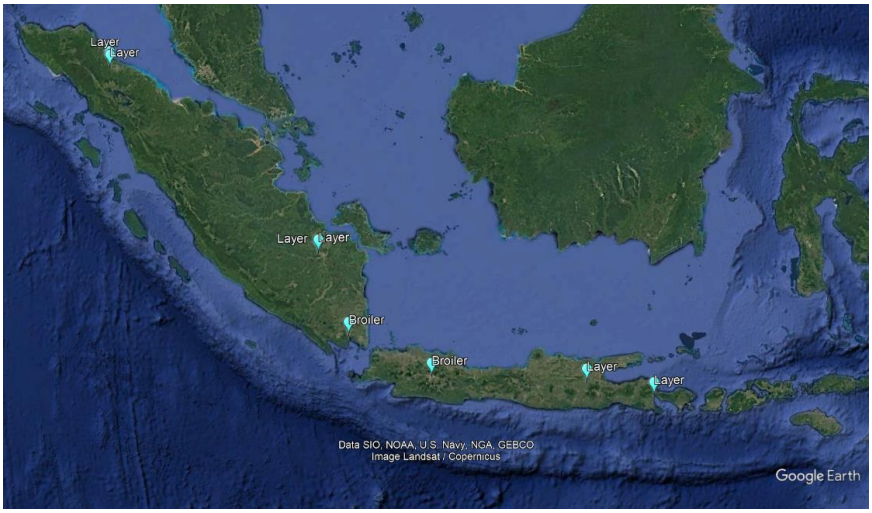
As the extreme changing season still dominates most of Indonesia's equatorial region, the emergence of respiratory disease also dominates disease reports in poultry. Chronic Respiratory Disease is closely related to the failure of ventilation management to prevent the negative effects of extreme weather. In September 2024 there were 8 cases of Chronic Respiratory Diseases or 14% of total reports – 2 reports from broilers and 6 reported from layers. Areas of infection can be seen in Figure and Table 1.

Areas	Species	No of Cases
Stabat, North Sumatera	Layer	1
Tanjung Jati, North Sumatera	Layer	1
Sukamakmur, South Sumatera	Layer	1
Mainan, South Sumatera	Layer	1
Bandar Lampung, Lampung	Broiler	1
Bandung, West Java	Broiler	1
Banyuwangi, East Java	Layer	1
Jombang, East Java	Layer	1

Many mycoplasma species can infect birds, but only Mycoplasma gallisepticum (MG), M. synoviae (MS), M. meleagridis (MM) and M. iowae (MI) are considered pathogenic in chickens and turkeys, and can cause economic losses due to stunted growth, condemnations associated with lesions, or synovitis, airsacculitis, decreased egg production, and decreased hatchability. Worldwide, the incidence of mycoplasma infection is favored by the intensification of poultry production.

Chronic Respiratory Disease (CRD) caused by Mycoplasma gallisepticum. The infection often complicated with viruses (Newcastle disease, coronavirus, metapneumovirus, etc.) or bacteria (Escherichia coli, Haemophilus spp., Pasteurella spp., Ornithobacterium rhinotracheale, other Mycoplasma sp, etc.) or with fungi (Aspergillus, etc.). Pathogenecity of the disease can be exacerbated by poor environmental conditions (high ammonia, dust, moisture, faulty ventilation, etc.), stress factors (social stress, handling, vaccination, selection, beak trimming, etc.). On farms, the most frequent mode of infection for MG or MS is the respiratory route.

Transmission occurs primarily by direct contact between sick or latent carriers and susceptible birds. Indirect transmission through human activity, wild birds or insects or lives tock equipment is also possible. In addition, MG and MS can be transmitted vertically through the egg, either by contamination of the embryo by blood route, or because of contiguity between the oviduct and the infected air sacs. The percentage of infected eggs remains limited but probably allows the spread of infection in the hatchery and then the farms. The rate of vertical transmission would be greater in the first weeks of infection.



CCRD

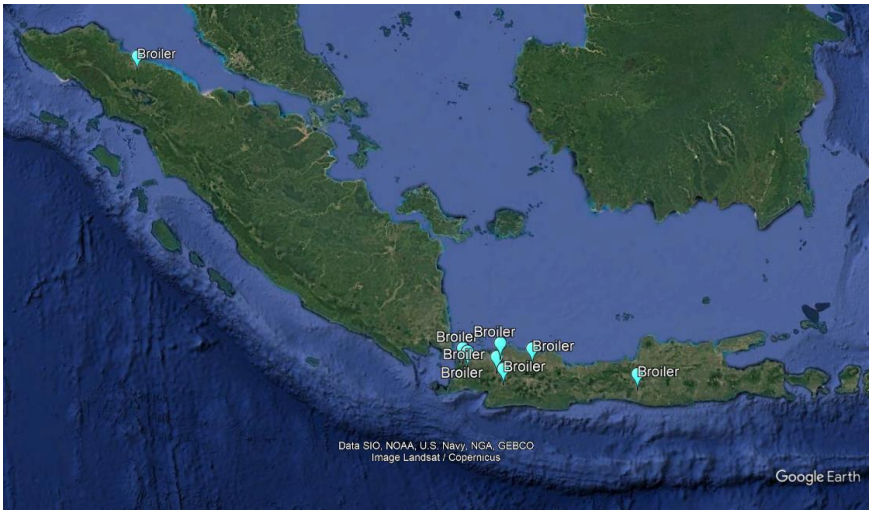
Complicated Chronic Respiratory Disease is a complicated condition mostly related to failure of rearing management in overcome the negative effects of the extreme weather. With the weather as previously described by BMKG, it is very likely to CCRD becoming the highest reported cases in September 2024. Its came with a total of 8 reports or equal to 14% of total reports - all reports were from broilers. CCRD reported areas can be seen in Figure and Table 2.

Areas	Species	No of Cases
Talun Kenas, North Sumatera	Broiler	1
Pandeglang, Banten	Broiler	1
Cisaat, Banten	Broiler	1
Bekasi, West Java	Broiler	1
Subang, West Java	Broiler	1
Bogor, West Java	Broiler	1
Sukabumi, West Java	Broiler	1
Sleman, Yogyakarta	Broiler	1

The term "complicated" in Complicated Chronic Respiratory Disease means that this disease caused by multiple factors, which includes non infectious factors like extreme weather, high humidity, poor water sanitation and poor ventilation management, or infectious factors such as virus (IB, ND, AI, ILT), bacterial (E. Coli, Mycoplasma sp) with E. Coli isolation as the most dominant bacteria. Primary agents (e.g., field a nd vaccine strains of infectious bronchitis virus and Newcastle disease virus, mycoplasmas, avian metapneumovirus in turkeys, dust, ammonia, etc.) injure the respiratory mucosa, allowing E. coli to enter the blood stream. There is airsacculitis of varying severity, and the lesion is usually of long duration.

This expression of the disease used to be called chronic respiratory disease or CRD when Mycoplasma gallisepticum was the initial insulting agent. Infected air sacs are thickened, opaque, and may contain caseous exudate. Other respiratory lesions include pneumonia (more frequent in turkeys), pleuritis (more frequent in chickens), and pleuropneumonia. In addition to airsacculitis and lung lesions, affected birds

usually have peritonitis and other lesions consistent with bacterial septicemia. The success keys to solve CCRD problem is, determine the initial cause of the complex, if its related to management factors, do the improvement, when it is related to viral infection such as IB or ND, improve the protection against the virus by vaccination and biosecurity efforts.



IB

Infectious Bronchitis continues to be one of the biggest threat for Indonesian poultry business. Case reports continuously recorded in every area of surveillance. In September 2024, the avian coronavirus, marked its place as the third highest infection reported with 6 cases, which equal to 11% of the total September reports. 4 reports from broilers and 2 report from layers. The areas affected by IB is shown in Table and Figure 3.

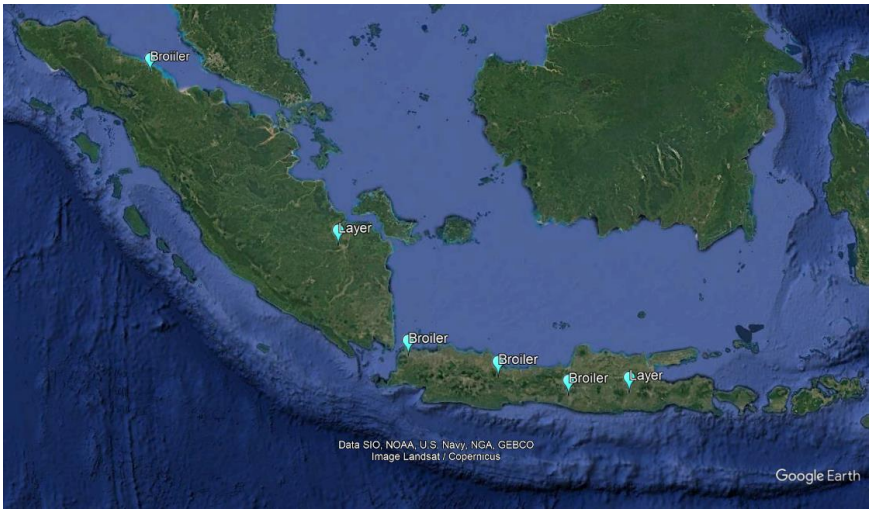
Areas	Species	No of Cases
Kisaran, North Sumatera	Broiler	1
Sukamakmur, South Sumatera	Layer	1
Serang, Banten	Broiler	1
Kuningan, West Java	Broiler	1
Sleman, Yogyakarta	Broiler	1
Kediri, East Java	Layer	1

The ferocity of IB infections cause very severe performance disorders, both achievement of BW and FCR, high mortality (nephropatogenic strains), decreased of egg production, and high-cost of medications due to respiratory problems. IB infection have a tendency to complicate with respiratory viruses (ND, AI, ILT, etc.) and / or pathogenic bacteria (E. coli, Mycoplasma sp, Ornithobacterium sp). Because of its negative effect, in year 2017, Infectious Bronchitis have been stated as the biggest cause of economical losses in the poultry farming industry by Avian Health International.

IB is another disease that highly related to increasing humidity. With the average relative humidity (RH) that ranged very wide in the atmosphere, it is favor for avian coronavirus to cause problems in poultry. The presence of respiratory diseases in poultry farms could be caused by ineffective ventilation. Reduced ventilation usually results in an air pollutants, such as ammonia, carbon dioxide, dust and air-borne microorganisms.

The disease defined as a rapidly transmissible disease caused by avian coronaviruses, affecting the respiratory, urogenital, and intestinal tracts of hybrid layer, meat type, and fancy chickens of all age groups. Lateral spread of IBV may also affect quails, ring-necked pheasants, domestic turkeys and other gallinaceous birds. The airborne spread of IBV is the most common and most significant mode of transmission in areas with a dense chicken population. Long distance, even intercontinental, spread of

IBV is possible by trade in infected chicks, pullets, and adult chickens and also by contaminated eggs and multiple-use packing material.



Since infectious bronchitis virus have an ability to infect from DOC, it is highly recommended to provide protection through vaccination in the hatchery by combining a classical and a variant live IB vaccine that would provide a lifelong protection for broilers. As for layers, it is require to boosts both live and killed IB vaccines in pullets to laying period.

ND

The Newcastle Disease ranked fouth in September 2024. The number of reports of ND continues to decrease every month, nevertheless, ND is still a very dangerous disease for poultry. ND wave that have been struck in South East Asia since 2010 continues to threat with 5 reports or equal to 9% of total reports, 4 reports from broilers and 1 report from layers. Most of reported cases of ND were came from farms that using conventional ND vaccination. Areas with ND reports can be seen in Table and Figure 4.

Areas	Species	No of Cases
Banyuasin, South Sumatera	Layer	1
Cianjur, West Java	Broiler	1
Klaten, Central Java	Broiler	1
Probolinggo, East Java	Broiler	1
Kediri, East Java	Broiler	1

Ever since its first report in 1926, Newcastle Disease continuously threatening poultry, from backyard chicken to industrial poultry business. The high number of case reports every month shows that conventional ND prevention programs which based on a combination of live and killed ND vaccination have its limitations in protecting chickens from the ferocity of ND infections. The major problems in ND conventional prevention programs are the interference of MAB ND to the efficacy of ND vaccination, quality of on farm vaccination, and the prolonged postvaccinal reaction. The solution to stop ND infections in broilers, layers and breeders is to use the Vectormune ND vaccine which has been proven to provide maximum protection, reduce virus shedding and has no side effects.

From 2018 to 2020, Ceva Disease Surveillance Database always showed that ND is the number one enemy of the Indonesian poultry business. However, the situation changed after Vectormune ND was introduced in Indonesian market. In year 2021, the Database has shown a 52% decrease in ND reports compared to the year 2020. The reason behind this improvement is that farms that previously infected by ND have agreed to use Vectormune ND as their basic vaccination programme. These farms were fully protected by Vectormune ND and eventually stopped reporting repeated ND cases. Vectormune ND was able to prevent ND virus shedding from one period to the next, which ultimately succeeded in increasing protection against field ND virus challenges.

Newcastle Disease still a deadly and rapidly transmitted infection affect both meat and laying type chicken, causing enormous economical losses either due to high mortality that can reach 100% in young birds or losses of production performance like dropped egg production, poor FCR and bodyweight, until poor carcass quality. The solution to stop ND infections in broilers, layers and breeders is to use the Vectormune ND vaccine. The best ND protection started from the hatchery.



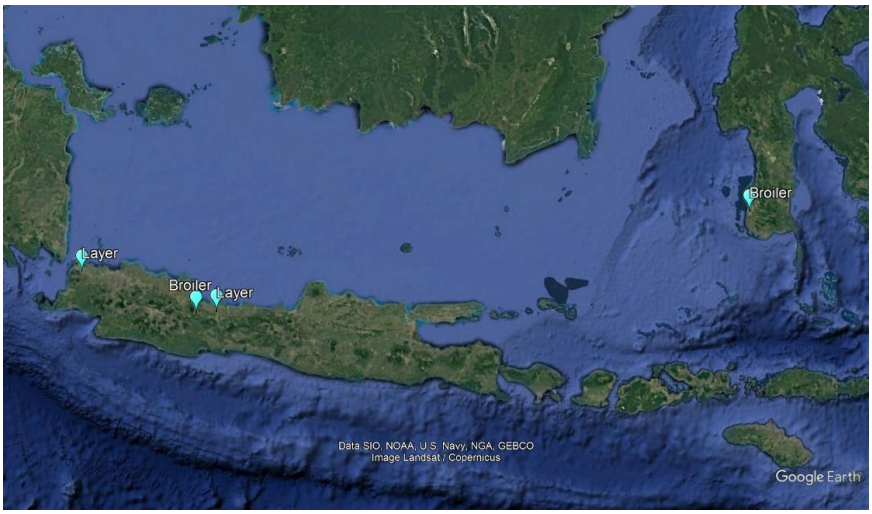
IBD

The last pathogen in the list of highest threats as of September 2024 is Infectious Bursal Disease so called Gumboro disease. There were 4 reports or 7%, 2 reports each from broilers and layers. Areas with IBD reports can be seen in Table and Figure 5.

Areas	Species	No of Cases
Serang, Banten	Layer	1
Kuningan, West Java	Broiler	1
Brebes, Central Java	Layer	1
Makassar, South Sulawesi	Broiler	1

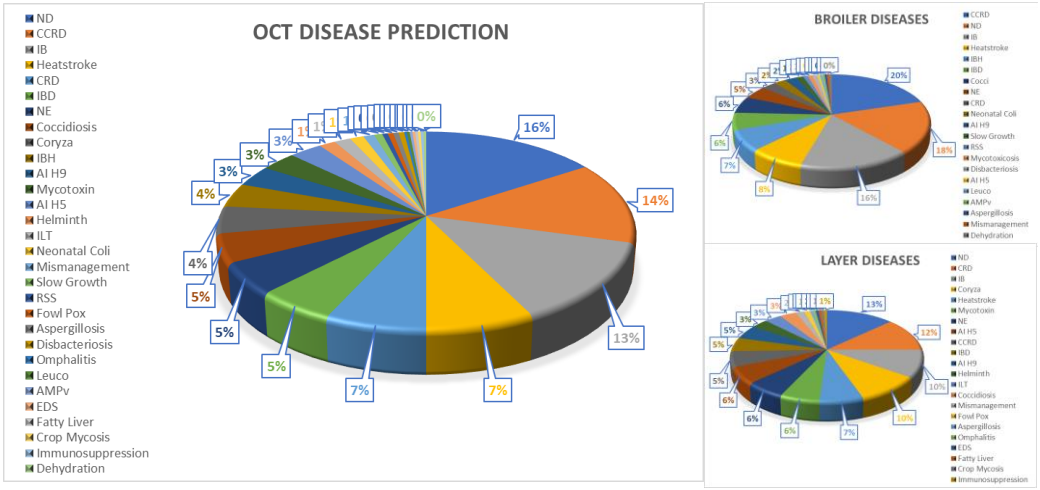
According to Ceva Indonesia GPS Disease Surveillance database analysis, Infectious bursal disease (IBD, Gumboro) infection mostly reported in the rainy and fluctuated season. Various factors related to this season, such as prolonged cold, high humidity, poor environment quality, as well as the fungal contamination of feed raw materials, the presence of vector animals carrying the IBD virus from one period to another, will increase the risk of IBD infection in the field. The increase virus loads can only be suppressed by implementing a strict, assertive and sustainable biosecurity program. If the biosecurity program is underestimated and fails, a large number of vvIBD virus will precede the work of the attenuated live vaccine virus. Likewise, immunosuppressive diseases such as mycotoxicosis, CIAV, Coccidiosis in early age may damage the immune system thus lead to IBD vaccination failure.

Another important issue in the protection of IBD is the heterogeneity of IBD maternal antibody in day-old chicks. The wide variety of IBD MAB makes it difficult to determine the day of vaccination and some birds may be unvaccinated at the right time. The key to prevent repeated IBD infection is the ability of IBD vaccine to completely occupate Bursa of Fabricius that will prevent the next infection by any IBD virus, able to adapt the decreasing MAB of IBD at any level, thus, able to Stop Gumboro Cycle. Transmune have been proven its consistency to protect broilers and Novamune have been develop distinctively for layer to protect Bursa against the field IBD virus of any kind. Both vaccines were vaccinated in the hatchery in under the close supervision of the Ceva Vaccination Service and Equipment team.



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Based on surveillance data for 6 consecutive years, we are able to predict the dominant disease occurring in a certain month. For the prediction of disease incidence in the next October 2024, the percentage of disease occurring in the same month during the previous 6 years is as follows.



The Indonesian poultry business will still facing multiple threats in October 2024. Especially when the extreme weather continuous. The three diseases with the highest probability are: ND 16%, CCRD 14%, and IB 13% opportunity. The three highest predicted diseases in broilers are : CCRD 20%, ND 18%, and IB 16% opportunity. While layers prediction are ND 14%, CRD 12% and IB and Coryza each with 10% probability. This prediction is intended to help the poultry community improve its prevention program, not as a guarantee of accuracy.

CONCLUSION

In September 2024, the GPS Diseases Surveillance program have been reporting 57 cases from 19 different diseases or condition – broilers reported 27 cases while layes reported 30 cases. From the highest, five most prominent diseases are Chronic Respiratory Disease and Complicated Chronic Respiratory Disease each with 8 reports or 14% of the total reports, followed by Infectious Bronchitis with 6 cases (11%), Newcastle Disease with 5 cases (9%), and Infectious Bursal Disease with 4 cases (7%). Other diseases were Avian Influenza H9, Heatstress and Coccidiosis each with 3 cases (5%), Avian Metapneumovirus, Mycotoxicosis, Necrotic enteritis, DOC Quality, Deficiency Calcium, and Post Vaccinal Reaction each with 2 cases (4%). And the rest of the reports are Inclusion Body Hepatitis, Helminthiasis, Infectrious Coryza, Feed Quality and Egg Drop Syndrome each with 1 case (2%) consecutively. For more detail information of this report please contact Ceva Animal Health Representative in your area to help and provide solution to your poultry problems.