



WELCOME
TO
ONLINE TRAINING
ON
IBD or GUMBODO DISEASE
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INFECTIOUS BURSAL DISEASE

FEEDING THE GROWING POPULATION

2011
Global population reached 7 billion people.

2050
Global population expected to reach 9 billion people.

That's an increase of 2 billion people over only the next 39 years.


IN ORDER TO FEED THE WORLD'S GROWING POPULATION, FARMERS MUST PRODUCE MORE FOOD IN THE NEXT 50 YEARS THAN THEY HAVE IN THE PAST 10,000 YEARS COMBINED

ALL WHILE ARABLE LAND IS BECOMING LESS AVAILABLE

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INFECTIOUS BURSAL DISEASE

Increase Production by Improving Productivity & Minimizing Loss



- 20%

One Fifth of Livestock around the World is Lost due to **Disease**

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INFECTIOUS BURSAL DISEASE
Gumboro – the Silent Killer

Infectious Bursal Disease (IBD) or Gumboro is the most important highly contagious Viral disease of Poultry

Top 4 Diseases causing Poultry Losses all are Viral origin and they are

- HPAI – Influenza (RNA) Virus
- IB – Corona (RNA) Virus
- LPAI – Influenza (RNA) Virus
- IBD – Naked RNA (Birna) virus

Clinical form is common but **Sub-Clinical form is doing the menaces globally**



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INFECTIOUS BURSAL DISEASE

Gumboro – the Silent Killer

The disease is a major problem in concentrated poultry production areas throughout the world

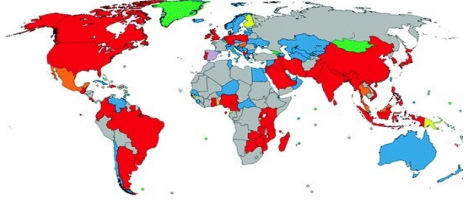
It is often not recognized due to a sub-clinical form

Affected chickens have increased vaccine failure, strong post-vaccinal reactions, & increased incidence of secondary infections



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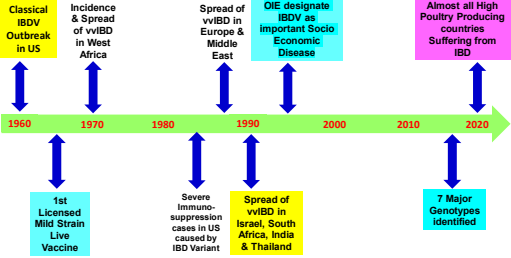
GLOBAL IBD PRESENCE



Green	Disease never occurred	Red	Infection present (with no clinical disease)	Orange	Disease restricted to certain zone(s)/region(s) of the country
Blue	Disease absent during the report period	Purple	Infection limited to one or more zones	Grey	No information available for the report period
Yellow	Disease suspected	Dark Red	Demonstrated clinical disease		

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CHRONOLOGICAL EVENT OF GLOBAL IBD




- 1960:** Classical IBDV Outbreak in US
- 1970:** Incidence & Spread of vvIBD in West Africa
- 1980:** Severe Immunosuppression cases in US caused by IBD Variant
- 1990:** Spread of vvIBD in Europe & Middle East
- 1990:** Spread of vvIBD in Israel, South Africa, India & Thailand
- 2000:** OIE designate IBDV as important Socio Economic Disease
- 2010:** Almost all High Poultry Producing countries Suffering from IBD
- 2020:** 7 Major Genotypes identified

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INFECTIOUS BURSAL DISEASE

- IBD is characterized by destruction of lymphocytes in the Bursa of Fabricius & other lymphoid organs
- The virus is resistant to many disinfectants and environmental factors, and remains infectious up to 122 days in the poultry house environment



Because of the resistant nature of the Virus, once a poultry farm becomes contaminated, IBD tends to recur in subsequent flocks

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INFECTIOUS BURSAL DISEASE

- If the Virus damages the Bursa in young chicken; the Bursa will not be producing sufficient numbers of Lymphocytes necessary for Immunity
- Thus, the birds will experience reduced immune system capabilities (Immuno-Suppression)
- The earlier the damage to the Bursa occurs, the fewer lymphocytes with antibody-producing capability will be produced
- Therefore, any IBD control program should attempt to protect the Bursa as long as possible
- In practical, if the Bursa can be protected until at least 3 weeks of age, an adequate number of lymphocytes should be produced, and the immunosuppressive effects of an IBD outbreak should be minimal

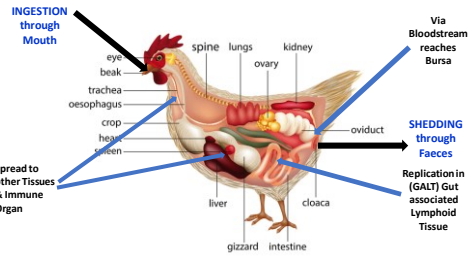


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PATHOGENECITY GUMBORO (IBD)



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CLINICAL GUMBORO (IBD)

- The clinical form usually occurs between 3 to 6 weeks of age
- The clinical disease has a sudden onset; mortality rate in the flock increases rapidly



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- Clinical signs include dehydration, trembling, ruffled feathers, vent pecking, depression, white stool with mucous with vent pasting white faeces
- Affected chickens experience a transient immuno-suppression.

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POST MORTEM LESIONS OF CLINICAL IBD

- Initially, the Bursa is swollen, oedematous and has a gelatinous yellowish secretion covering the serosal surface
- Haemorrhage and areas of necrosis may be present in Bursa in more severe cases

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POST MORTEM LESIONS OF CLINICAL IBD

Necrosis & damage in the primary lymphoid organ Bursa & Thymus

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POST MORTEM LESIONS OF CLINICAL IBD

- Necrosis & damage in the secondary lymphoid organs like spleen & caecal tonsils
- Haemorrhage in the thigh and breast muscles, because IBD virus interferes with the normal blood clotting mechanism
- The kidneys are swollen in dead birds

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SUB-CLINICAL GUMBORO (IBD)

- The sub-clinical form of the disease occurs before 3 weeks of age where Chickens show no clinical signs, but experience severe & permanent Immuno-suppression
- Majority of field infections are sub-clinical, and this form is more economically important

PM Examination shows the damage & regressed Bursa due to Immuno-suppression



Age 11 day Age 9 day

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PM Finding: damage/regressed Bursa and enlarged Thymus due to Immuno-suppression





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SUB-CLINICAL GUMBORO (IBD)

Integrator commonly have farms identified as problem farm. Broilers from these farms have poor Body Weight, High FCR, high Mortality due to some infection, Excessive Vaccine reactions


- In most cases, investigations have shown that these farms are heavily contaminated with the IBD virus
- The poor performance is due to immuno-suppression caused by sub-clinical IBD



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DIAGNOSIS OF GUMBORO (IBD)

- Diagnosis of IBD involves the Farm history, Flock record, Clinical Signs & Post Mortem Lesions
- Obviously, Chicken greater than 3 weeks of age only shows clinical signs
- Diagnosis of IBD by post-mortem lesions is more practical
- During later stage of disease it is difficult to diagnose IBD by examining only shrunken, atrophied Bursa, as other diseases (MD, Mycotoxicosis) produce similar changes
- Confirmatory Diagnosis should be done by Laboratory test like ELISA



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TREATMENT OF GUMBORO (IBD)

- There is no Proven treatment like any other Viral Infection
- Anti-Viral like VIRKON-S @ 2gm per litter drinking water helps reducing mortality
- Electrolytes helps to regain vitality by minimizing dehydration
- Vit E & Se or Immunostimulant like β -Glucan helps immunity development
- Anti-Viral spray inside the shed helps controlling horizontal spread of the disease

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PREVENTION & CONTROL OF GUMBORO (IBD)

- Any successful IBD Control Program must involve
- **Effective Breeder Vaccination program**
 - **Effective Bio-security program**
 - **Effective Broiler Vaccination program**

Any IBD virus control program should attempt to protect the Bursa as long as possible

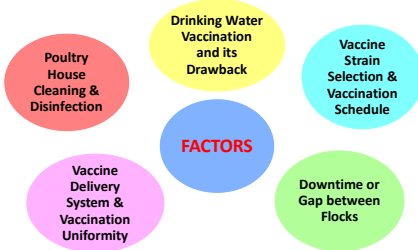
In practical, if the Bursa can be protected until at least 3 weeks of age, adequate lymphocytes should be produced, and the immunosuppressive effects of an IBD outbreak should be minimal

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FACTORS INFLUENCING CONTROL STRATEGY



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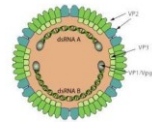
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IBD CONTROL PROGRAM

- Virus remain infectious in poultry house environment up to 122 days
- Remain infectious in feed, water & poultry house droppings up to 52 days
- Heavy Viral shedding from infected birds
- Virus remain stable at pH ranging 2 – 12
- Can only be destroyed by boiling for 30 minutes at 70° Celsius
- Disinfectants takes long contact time to kill the virus

VERY DIFFICULT



Infectious Bursal Disease IBD
The Virus

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IBD CONTROL PROGRAM

1. ALL IN ALL OUT Farming System
2. Vaccination of breeder is most Important. Antibodies produced by the hen are passed through the egg to the chick. These MAb, if present in adequate levels, protect the chicks against early sub-clinical IBD

Breeder Vaccination Program shall not only to protect the Parent Stock but also to contribute sufficient Mab to progeny



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IBD CONTROL PROGRAM

3. Poultry Traffic (People, Vehicle & Equipment) Control



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IBD CONTROL PROGRAM

4. Downtime and Cleaning & Disinfection to Minimize any remaining Infections between flocks



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IBD CONTROL PROGRAM

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IBD CONTROL PROGRAM

5. Important aspect of IBD Control Program depends on comprehensive Bio-security program mainly includes Disposal of Dead Birds

6. Regulation & Implementation of Restriction on Sale of Sick birds



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IBD CONTROL PROGRAM

7. Disinfectants of Contaminated Premises by Good Disinfectant before Housing Chicks and in presence of Chicks



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IBD CONTROL PROGRAM

8. Scientific Vaccination Program

Things to consider to Schedule Vaccination program

- a) History of IBD incidence of the area
- b) Bird Type – Layer, Breeder or Broiler
- c) MAb of Chicks
- d) Virus Strain available in the area

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IBD CONTROL PROGRAM

Criteria for Ideal Vaccine in current scenario

- Early Protection in presence of MAb
- Stimulate Active Immunity in presence of MAb
- Safe for Chicks with low levels of MAb
- Broadly Antigenic Stimulation of Antibodies
- Convenient & Easy Administration
- Uniform Delivery to every Chick
- Single Administration to provide Full Protection with long Lasting Immunity
- Cost Effective

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IBD CONTROL PROGRAM

Vaccination Program in our Broiler Farms

- Conventional 12th Day Vaccination with Strain as referred by Poultry Veterinarian
- IMMUNE COMPLEX or VECTOR VACCINE at Hatchery or In-Ovo; Vaccination before chick housing
- Double IBD Farm Vaccination: 7 Day Intermediate and 14 Day Intermediate Or Plus Vaccination as advised by the Poultry Veterinarian (with low MAb from out-source Hatching eggs or Chicks)

Remember the Fact: Who reaches Bursa first; will sit, stay & multiply. If it is Field virus, then Disease will come. If it is Vaccine Virus, then Immunity will produce

BROILER IBD Vaccination Program guidelines			
Level of Challenge	Biosecurity Level	Program Recommended	Remarks
Low	High	Single Intermediate	
Low	Low	2 Intermediate	6 - 7 days gap
Moderate	High	IC or 2 Intermediates	6 - 7 days gap
Moderate	Low	IC or Intermediate+ Intermediate Plus	6 - 7 days gap
High	High	IC or Intermediate Plus	
High	Low	IC + Intermediate OR IC + Intermediate Plus	11 - 12 days gap

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IBD CONTROL PROGRAM

Vaccination Program in Layer & Breeder Farms

Remember the Fact: Who reaches Bursa first; will sit, stay & multiply. If it is Field virus, then Disease will come. If it is Vaccine Virus, then Immunity will produce

Commercial Layer Vaccination Schedule		
AGE in Days	Vaccine	Route
14	IBD Intermediate	Drinking Water
26	IBD Intermediate Plus	Drinking Water

Broiler Breeder Vaccination		
AGE in Days	Vaccine	Route
16	IBD Intermediate	Drinking Water
26 - 28	IBD Intermediate Plus	Drinking Water
135 - 140	IBD Killed	I/M
275 - 280	IBD Killed	I/M

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IBD CONTROL PROGRAM

Causes of Sporadic Outbreaks

- 1 Multi-age Farms
- 2 Husbandry Practice
- 3 Drinking Water Vaccination
- 4 Maternal antibody

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IBD CONTROL PROGRAM

'Quick and Not Always Right' conclusion

**Best Vaccine & best method alone not sufficient to prevent IBD
Vaccination together with best Bio-security helps control Gumboro Disease**

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IBD CONTROL PROGRAM

Best Bio-security
(Cleaning, Disinfection, Traffic Control & Mortality Disposal)
Practice must be continuous.

**Improvement is gradual
and
often only seen after 3 to 4 flocks**

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THANK YOU

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