UNIVERSITY OF MARYLAND EXTENSION

extension.umd.edu FS—1131 | January 2020

Infectious Coryza (IC): Frequently Asked Questions (FAQs)

Infectious Coryza (IC) is a rapidly spreading respiratory disease that mainly affects chickens and occasionally, pheasants and Guinea fowl of all ages. IC is different from turkey Coryza and is commonly seen in older birds. Cases typically occur in layers and backyard flocks where multiple ages are housed together. Recent cases in Pennsylvania have also been reported in commercial broilers.

Why is IC Important?

IC has no public health significance and does not infect humans. Poultry meat and eggs from infected birds are safe to consume after proper processing and cooking.

IC is an important disease of poultry and can have major economic impacts for producers with affected flocks and in affected states or regions. In broilers, it can lead to growth reduction and increased condemnations at the processing plant (up to 69.8%) due to airsacculitis (inflammation of one or more of the air sacs). In layers, it can cause egg production to drop between 10% to 40%. Vaccination (using commercial or autogenous vaccines) is the only cost-effective way to prevent infection. However, vaccines and the labor associated with vaccination are not cheap and reduce the overall profit margin.

What Causes IC?

IC is a bacterial disease caused by *Avibacterium paragallinarum* (AP). This bacterium can be isolated from nasal exudate but is difficult to isolate and grow in the laboratory due to special growth requirement. It is not very robust and can only live outside a bird host for a few days. AP is sensitive to many disinfectants and environmental factors such as temperature (113-131°F) for 10 minutes can kill it. AP is classified into different serotypes (A, B and C). This classification is important for vaccine selection and disease control because the vaccine serotype has to match the field serotype for optimum protection.

Where do IC Outbreaks Occur?

IC has a worldwide distribution. However, it is more frequent in regions with intensive chicken production. IC is highly prevalent in layer flocks in almost all countries in Latin America and many countries in Asia and Africa. The first IC case from the recent outbreak in the Northeastern U.S. was detected in a commercial layer flock in December 2018. Since that date, more than 14 million birds have been affected. The first commercial case in Maryland was diagnosed in September 2019 in commercial layers.

What do IC-infected Birds Look Like?

Affected birds have prominent swelling of the sinuses and face, sneezing, conjunctivitis with some adherence of the eyelids, discharge from the eyes and nostrils, and occasionally the disease can spread to the lower airways like the lungs and air sacs (figures 1 and 2).

Clinical signs appear rapidly and spread quickly among the majority of the birds in an affected flock (high morbidity). Mortality rates vary but can reach up to 48% in older flocks. IC causes a significant reduction in feed and water consumption resulting in reduced growth rate and egg production. Drops in egg production can range from 10% to 40% in IC-infected flocks.

Severity of clinical signs can differ vastly from flock to flock. Respiratory signs can last for two to three weeks. However, when complicated with other diseases such as Mycoplasmosis, infectious bronchitis, etc., or poor housing conditions, IC can last longer and a foul odor can be detected.

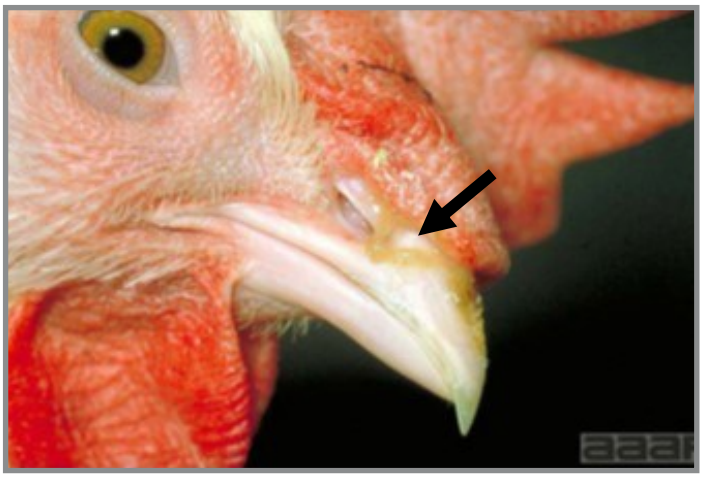

Figure 1. White Leghorn pullet with slight facial swelling and nasal discharge (Courtesy of the American Association of Avian Pathologists).

Figure 2. Facial swelling, swollen wattles, and mucoid nasal discharge in a bird infected with infectious coryza. (Courtesy of Sherrill Davison, DVM)

How is IC Transmitted?

IC is transmitted through inhalation of infected aerosol or ingestion of contaminated feed or water. This could result from direct contact with infected, chronically ill, or apparently healthy carrier birds or indirect contact with fomites. Recovered birds mostly serve as carriers for life. IC is not transmitted through the eggs to hatched progeny. Transmission of infective particles in the air has been reported. The organism may also be able to be spread over distances by the air.

When does IC Occur?

IC is associated with improper management practices such as moving susceptible replacement pullets onto IC-infected, multi-age layer facilities and poor biosecurity. IC cases may be more frequent in winter and fall season.

How is IC Diagnosed?

A thorough flock history, clinical signs, and gross lesions are usually enough to support a suspected diagnosis of IC. To obtain the necessary definitive diagnosis, a direct method such as bacterial isolation and identification from aseptically collected sinus exudate (usually challenging) or molecular testing (PCR) of choanal cleft or sinus swabs are the most typical methods. Proper storage of samples is important, as isolation is less successful after three days. However, sinus swabs stored at 39°F or -4°F maintain higher PCR positivity rates for longer periods.

For submission to the diagnostic laboratory, live, sick, or freshly euthanized birds are preferred to dead birds from the farm, as dead birds are heavily contaminated. This gives a better chance of recovering bacteria by testing samples from multiple organs (sinus, choanal cleft, trachea, lung, heart, liver and air sacs). Indirect diagnostic methods that detect antibodies (serological tests) can be used for serotype identification and vaccine selection.

In order to obtain a definitive diagnosis, it is important to differentiate IC from other diseases such as chronic respiratory disease (MG), fowl cholera, fowl pox, ornithobacteriosis, swollen head syndrome (caused by turkey rhinotracheitis), and vitamin A deficiency since many clinical signs overlap.

How do you Control IC?

In areas where the disease is not prevalent, depopulation of infected flocks followed by cleaning and disinfecting the contaminated premises could be an ideal option to prevent further spread. However, this method is infrequently used due to significant economic consequences especially for commercial production.

In areas where the disease is more frequent and widespread, treatment with antibiotics (usually through the feed or drinking water) is frequently used to decrease the severity of clinical signs. Infected flocks usually respond to treatment but may relapse when treatment is discontinued, as recovered birds can remain carriers and serve as a continued source of infection. Antibiotics with a zero-day withdrawal time are the preferred option in commercial layer operations (otherwise eggs cannot be used except after drug withdrawal time). For medically important antimicrobials, a veterinary feed directive or prescription is needed. Antibiotic treatment is not an option in strict organic and antibiotic-free (ABF) programs.

Vaccination is currently recommended as the best preventative measure, along with strict biosecurity. It is recommended that vaccines be given at 10 weeks and 20 weeks of age for birds intended to be kept on multiage sites, or at farms with a previous outbreak or who are at risk based on local outbreaks. Commercial and autogenous vaccines are now available. Serotype matching between the vaccine and field strain is necessary for optimum effectiveness.

The use of suitable disinfectants via the drinking water and by spraying disinfectants in the house in the face of an outbreak is useful but is not a replacement for vaccines.

How do you Prevent IC?

Apply and follow biosecurity principles and proper management procedures such as:

- Eliminate reservoirs of infection (depopulate infected or recovered flock(s);
- Properly clean and disinfect affected premises and allow 2–3 weeks down time before restocking with clean birds;
- Practice all in, all out production whenever possible;
- Buy only birds from known sources and tested to be IC free;
- Avoid contact with sick/dead poultry or wildlife;
- Avoid live bird markets, auctions, swap meets and take proper precautions when visiting common places frequented by other poultry professionals;
- Refresh your employees on biosecurity training;
- Use dedicated farm shoes and clothes; and
- Maintain and use proper footbaths.

For more about biosecurity, visit UMD Extension webpage https://extension.umd.edu/programs/agriculture-food-systems/program-areas/animal-science/poultry/publications

Who Should You Contact When You Suspect a Case?

If you suspect that your flock has IC, contact your veterinarian or send proper samples or sick birds to the nearest MDA Animal Health Laboratory for proper testing:

Region	Facility	Phone
Western Shore	Frederick Lab	301-600-1548
Eastern Shore	Salisbury Lab	410-543-6610
Delaware	Lasher Laboratory	302-856-7303

References:

Blackall P.J., and Soriano-Vargas E., Infectious Coryza and Related Bacterial Infections; in Swayne, D. E. (2020). *Diseases of Poultry*. Hoboken, NJ: Wiley-Blackwell.

Boulianne M., et al., (2012). *Avian Disease Manual*, 7th *ed*. American Association of Avian Pathologists, Inc.

Acknowledgments:

This document was peer reviewed by:

Geoffrey A. Lossie, DVM, MS, Diplomat ACPV
Clinical Assistant Professor, Department of Comparative Pathobiology
College of Veterinary Medicine, Purdue University.

Shankar Mondal, DVM, PhD, Diplomat ACPV
Avian Pathologist
Director of Salisbury Animal Health Laboratory, Maryland Department of Agriculture.

MOSTAFA GHANEM

mghanem@umd.edu

NATHANIEL TABLANTE

nlt@umd.edu

This publication, *Infectious Coryza* (IC): *Frequently Asked Questions (FAQs)* (FS-1131), is a part of a collection produced by the University of Maryland Extension, and the Department of Veterinary Medicine within the College of Agriculture and Natural Resources.

The information presented has met UME peer-review standards, including internal and external technical review. For help accessing this or any UME publication contact: itaccessibility@umd.edu

For more information on this and other topics, visit the University of Maryland Extension website at extension.umd.edu