

Commercial Poultry News

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What We Know About Avian Coronavirus Infectious Bronchitis Virus (IBV) in Poultry - And How That Knowledge Relates to the Virus Causing COVID-19 in Humans

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To better understand the challenges associated with the COVID-19 disease in humans, poultry health professionals can draw on their many years of experience attempting to control avian coronavirus infectious bronchitis (IBV) in poultry.

It's important to emphasize that the COVID-19 virus (SARS-CoV-2) is *not* associated with poultry or poultry products. Coronaviruses are divided into Alpha-, Beta-, Gamma- and Delta- coronavirus groups. Coronaviruses are responsible for a wide variety of existing and emerging diseases in humans and other mammals (including food animals) as well as in birds (including poultry). Diseases associated with coronavirus infections cover a wide range including respiratory, enteric, neurological, renal and hepatic.

The coronavirus that affects poultry (IBV) and causes respiratory disease in chickens is in the avian Gammacoronavirus group. Avian viruses in the Gammacoronavirus group do *not* infect or cause disease in humans.

The COVID-19 virus is in the Betacoronavirus group along with SARS-CoV and MERS-CoV. It was previously shown that SARS-CoV does not infect or cause disease in poultry (Swayne et al. Emerging Infectious Diseases Vol. 10, No 5, May 2004). Because the COVID-19 virus belongs to the same group as SARS-CoV and uses the same ACE-2 host cell receptor, it is highly unlikely that the COVID-19 virus will infect or cause disease in poultry, but it remains to be scientifically proven.

Based on the knowledge at hand, and the current lack of any evidence of bird infections with the COVID-19 virus, poultry and poultry products are not considered to be a source of COVID-19 infection for humans. The COVID-19 virus is primarily spread among people via respiratory droplets that contain the virus, with infections occurring via the nose, eyes and mouth. Although highly infectious, it is an enveloped virus — one that is easily killed by soap and common disinfectants. Below are some frequently asked questions regarding coronaviruses.

*What We Know About Avian Coronavirus.....continued***Where do coronaviruses come from?**

Bats are widely accepted as the reservoir for mammalian (Alpha- and Beta-) coronaviruses. There are about 1,240 different bat species harboring as many or more different coronavirus types. SARS-CoV and MERS-CoV came from a bat reservoir, infected an intermediate host then jumped to humans. It is likely that the COVID-19 virus originated from bats. Furthermore, preliminary data show some viruses isolated from bats to be close relatives. An intermediate host for the COVID-19 virus has not been identified yet.

The reservoir for avian coronaviruses, including IBV, is not clear. There are some closely related viruses in wild and domestic birds -pheasants, ducks, geese and pigeons, to name a few - but unequivocal evidence of a true reservoir is lacking.

Why is it difficult to produce a vaccine against coronaviruses?

Protective immunity against a respiratory disease like infectious bronchitis (IB) in poultry or COVID-19 in humans requires a strong local immune response.

In poultry, we achieve this by using live attenuated vaccines, but live coronavirus vaccines are difficult to produce because attenuation often renders them unable to produce a strong local immune response. Attenuation is accomplished by passage of the virus in a laboratory host system (embryonating chicken eggs or cell culture), but there is a fine line between attenuation and maintaining the viruses ability to infect and induce an immune response. Over attenuation renders the vaccine safe but not immunogenic, whereas under attenuation will create a vaccine capable of inducing a strong immune response but may cause a severe vaccine reaction. Then there is the problem of back passage of the vaccine in the host leading to a pathogenic virus.

Based on our knowledge of producing vaccines against IBV, production of a live attenuated vaccine against COVID-19 with acceptable safety and efficacy may prove to be very difficult.

What about using killed vaccines against coronaviruses?

There are killed (inactivated) vaccines against IBV for poultry, however, they are also difficult to develop. Chemicals such as formalin or beta-Propiolactone used to kill the virus also can destroy the integrity of the spikes, thus yielding a vaccine that does not induce a protective immune response. In addition, for killed vaccines to be effective, they must be given after a live attenuated "priming" vaccine, which, as discussed above, has significant safety issues.

In humans, killed vaccines against respiratory viruses are used, for example against influenza virus, but this requires growing the virus to high titers, inactivating it and using safe adjuvants. This has proved difficult to achieve for human coronaviruses.

Why don't we have recombinant vaccines against IBV in poultry? And could a recombinant vaccine be developed for the COVID-19 virus?

The coronavirus surface-spike glycoproteins are embedded in a lipid envelope and have conformationally dependent epitopes that induce neutralizing antibodies in the host. When the spike protein is removed from the virus envelope or when it is expressed in a laboratory system, those conformationally dependent epitopes are not faithfully reproduced. Thus, vectors such as fowl pox and herpesvirus of turkeys have not been suitable vaccine platforms for expressing coronavirus spikes.

What We Know About Avian Coronavirus.....continued

Spike protein production by the virus in a natural infection is very specific and difficult to mimic, thus other recombinant vaccines, such as DNA vaccines, RNA vaccines and subunit vaccines, do not accurately reproduce spike. Additionally, these vaccines usually do not stimulate adequate local immunity and have to be given many times to provide any protection.

Then there are genetically altered coronavirus vaccines derived from infectious clones. Making changes to the genome of the pathogenic virus to create a safe, attenuated live coronavirus vaccine that is still capable of inducing an effective immune response is complex and often results in non-viable viruses or insufficient protection. It can be a fast track to finding a vaccine candidate, but the safety of these live vaccines must be rigorously tested.

Fortunately, it is not all bad news. The immune system of a bird is very different from that of a human. What doesn't work in poultry may actually work well in humans. In addition, financially we can do a lot more in development and delivery of vaccines in humans than in poultry, where tight margins make it necessary for vaccines to improve the welfare of the flock while still yielding a satisfactory return on investment. The goals and performance parameters for human vaccines are obviously much different than production agriculture. Currently, there are many different coronavirus vaccines and platforms being developed or optimized for human use.

How do different serotypes/genetic types of coronavirus complicate vaccine development?

In poultry, there are many types (serotypes/genetic types) of IBV that do not cross protect. Consequently, recovery from one type does not immunize the bird against another type. For this reason, we have had to develop a number of different IBV vaccines (Ark, Mass, Conn, DE, etc.) to control the disease.

Fortunately, there appears to be only one type of COVID-19 virus circulating in humans. However, full genome sequencing has shown that the virus is changing. A number of mutations have been observed, but none appear to be maintained at this time, which suggests they are not important for transmission or virulence. From a vaccine standpoint, only one type of COVID-19 virus circulating in humans means that only one vaccine type should be needed to protect against this disease.

Are there treatments for coronaviruses?

For humans, we have antiviral drugs like oseltamivir (Tamiflu) for Influenza, but there have not been any successful drugs developed specifically for coronaviruses. Drugs against the viral-encoded proteases have been tried, as well as drugs that interfere with entry and egress of the virus from the host cell.

These and many other potential antivirals are presently being tested by several companies.

Two drugs currently in the news, chloroquine and hydroxychloroquine are being examined for their ability to ameliorate COVID-19 infections. These drugs have been used against malaria, lupus and rheumatoid arthritis many years. Preliminary data out of China indicate that the drugs stop the spread of the COVID-19 virus in cell culture and are somewhat effective in treating humans. But, until controlled clinical trials are conducted, their effectiveness against COVID-19 remains a question.

It is likely that this pandemic will not be over anytime soon. In the meantime, follow the Centers for Disease Control and World Health Organization recommendations to protect yourself and your family. Poultry flocks do not appear to be at risk.

What We Know About Avian Coronavirus.....continued

Web sites for additional information on COVID-19: <https://www.cdc.gov/coronavirus/2019-ncov/index.html> and <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>

Note: This statement was developed on behalf of the American Association of Avian Pathologists, an international association whose mission is to promote scientific knowledge to enhance the health, well-being, and productivity of poultry to provide safe and abundant food for the world. For more information, visit aaap.info.



Add to Your Calendar:

Wednesdays - Lunch Break (12-1:00)
Growers Chat with Extension

April 2020	May 2020	June
22	6	3
29	13	
	20	
	27	

See Much More (Constantly Updated) Information at:

COVID-19 INFORMATION

extension.umd.edu/poultry/covid-19-information-0

And

Federal, State, and Local Information at: extension.umd.edu/poultry/

USDA Press Release Coronavirus Food Assistance Program

<https://www.mafc.com/update>

ESSENTIAL FOOD AND AGRICULTURAL EMPLOYEE WORK LETTER

ESSENTIAL FOOD AND AGRICULTURAL INDEPENDENT CONTRACTOR WORK LETTER

[COVID-19 Information in Delaware](#) | [Child Care and COVID-19](#) | [Essential Services Screening Recommendations for Employees](#)

[COVID-19 Information in Maryland](#) | [MDA COVID-19 Updates](#) | [Child Care and Covid-19](#) | [Essential Personnel Child Care Family Enrollment Application](#)

Tips for Chicken Farmers To Get Through the COVID-19 Pandemic

1. COVID-19 is caused by a coronavirus that [does not affect chickens](#). This virus is different from the ones that cause IBV in birds.
2. Practice heightened levels of Biosecurity, as well as teaching others. University of Maryland Extension has [videos on biosecurity in different languages](#). In addition:
 - a. Limit visits to town
 - b. Encourage regular hand washing.
 - c. Limit close contact with others; practice social distancing.
 - d. If you have employees that need to travel to and from work, here are some links for forms to fill out to show that they are essential workers:
 - I. For [Maryland farm workers](#)
 - II. For [Delaware farm workers](#)
3. Have a plan for sickness. Who will take care of your chickens/farm if you get sick: your family, children, employees, neighbors?
4. Make sure your farm insurance is up to date and that your policy covers loss of income.
 - a. Loss of income is only covered by damage to property, i.e. buildings from lightning, fire, wind collapse, and/or equipment. A poultry company deciding to take action is not covered.
5. Check to make sure your generator is operational and running correctly.
 - a. Do you have enough fuel to run for an extended period of time? (Fuel costs are down, so now is a good time to buy, making sure to add the appropriate fuel preservative.)
 - b. Who will you call if there is a problem?
 - c. Do you have spare oil, oil filters and air filters on hand?
 - d. In case of an emergency, do you have step-by-step instructions on how to start the generator manually and transfer power?
6. Keep a close eye on feed inventory and order feed ahead so if there is any disruption in deliveries, you are covered.
7. With the shortage of PPEs, consider using homemade dust masks or cloth face coverings as an alternative. The CDC has provided [instructions for making them](#).
8. If you are having financial problems, contact your lender at once and work with them now before things become worse. USDA has also made changes to its farm loan practices and taken other measures to provide financial assistance to farmers: [see information about those changes here](#).
9. For educational assistance, the University Extension Systems are still open, but working from home, so give them a call. Additionally, there are lots of educational opportunities online and by webinar.
 - a. For the University of Maryland look here <https://extension.umd.edu/poultry>
 - b. For the University of Delaware look here <https://sites.udel.edu/poultryextension/>

If you need someone to talk with or have questions, please contact any one of us.

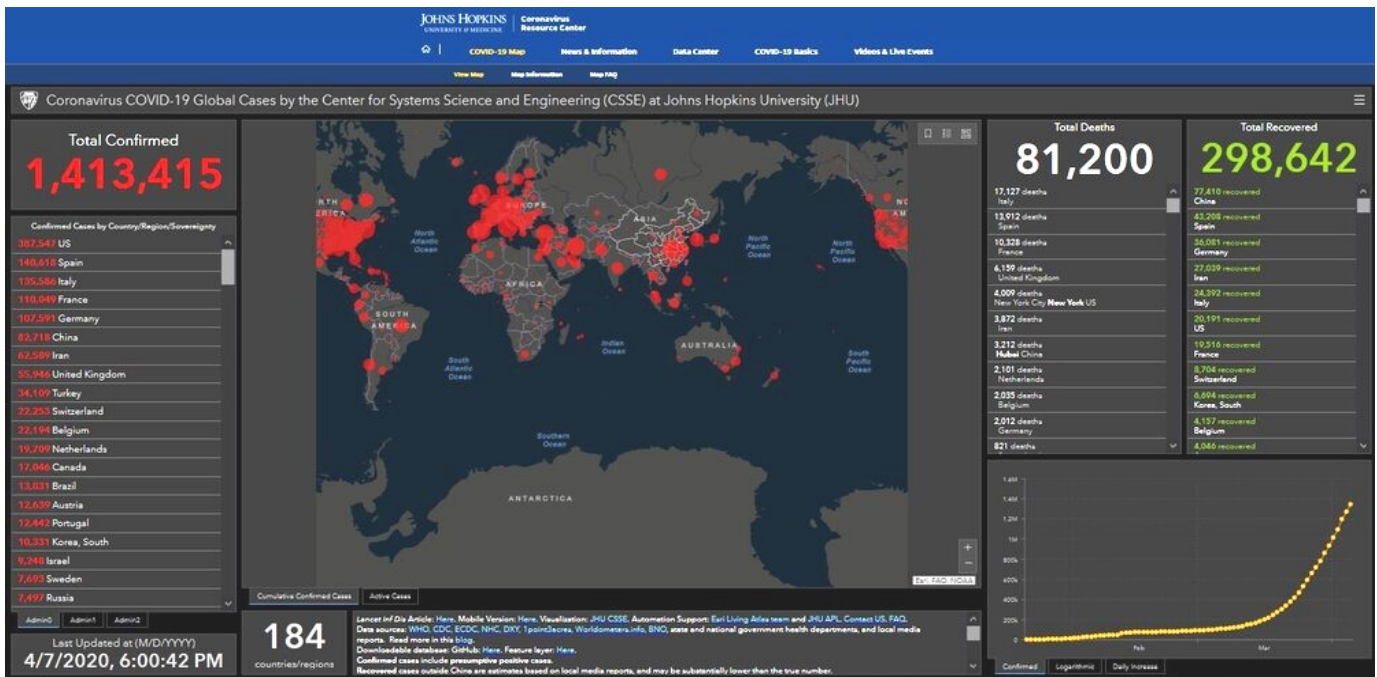
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Insurance Coverage and COVID-19

(April 7, 2020 / Nicole Cook / Maryland Risk Management Education Blog)



A screen shot of John Hopkins University of Medicine Coronavirus Resource Center website.
This article is not a substitute for legal advice. See here for the site's reposting policy.

Insurance might be the last thing you're thinking about right now as you scramble to figure out how to cope with the impacts of COVID-19. But now is exactly when you need to be doing all you can to **put your farming operation in the strongest position possible** to maximize any potential insurance recovery. This is especially true if federal or state assistance is not a viable option for your farm either because you don't qualify for the assistance or you don't want to take on more debt. Whether your business is experiencing economic losses due to disruptions caused by COVID-19, you're making significant changes to how you run your operation in order to work around those disruptions, or you're renewing coverage, you might risk losing coverage if you forget or put off doing these things.

[Find Out What Type Of Insurance You Have](#)

The novel coronavirus 2019 pandemic (COVID-19) has disrupted supply chains, sales, and entire global industries. As a result, all businesses should look to see if they have insurance that covers lost business income as well as expenses related to cleaning, sanitizing, decontaminating, etc. Whether you have insurance for your business' losses depends on what the insurance contract says. If you haven't read through your insurance policy or policies in a while, find them, grab a big cup of coffee, sit down and read them closely.

Examples of the types of coverages that may provide indemnity for losses from the coronavirus outbreak include business interruption, contingent business interruption, civil authority provisions, commercial general liability (CGL) coverage, directors and officers (D&O) coverage and errors & omissions (E&O) coverage.

Insurance Coverage and COVID-19....continued

- Business interruption claims are first-party claims that typically require physical loss of or damage to property in order for coverage to apply. In the case of COVID-19, some policyholders might make claims that contamination by the virus rendered the insured property temporarily or permanently unusable and was therefore a physical loss of the insured property.
- For contingent business interruption coverage the loss would have to be caused by damage to or disruption of an insured's supplier, customers or key business partners.
- Some property insurance policies provide business interruption coverage where lost earnings are the result of an order of a civil authority prohibiting access to a property of an insured or insured's supplier. Typically, however, the reason for the civil authority to prohibit access to the premises is because the property sustained physical damage. (See business interruption above)
- CGL insurance provides a defense to claims asserted by third parties for bodily injury or property damage. CGL coverage might be implicated if there are third-party bodily injury claims resulting from exposure to harmful conditions or failures to exercise reasonable care in guarding against the risk of exposure to the virus.
- For some companies experiencing a drop in share price, shareholder suits may follow, which may trigger coverage under D&O and E&O insurance policies.

Check For Exclusions

Insurance policies commonly contain exclusions for pollution and/or contamination. Usually, the term "pollutant" or "pollution" is defined in the policy, but it may not specifically reference a virus. Other policies may not define the terms "contaminant" or "contamination." When the policy doesn't define pollutants or contaminants, some courts have said that viruses are not considered pollutants and thus not excluded from coverage under the terms of the policy. In the wake of Severe Acute Respiratory Syndrome (SARS), Ebola virus, and Zika virus outbreaks, however, some insurers began to specifically include mold, bacteria, and viruses as listed "pollutants." Read through the exclusions in your policy before you make a claim.

Pay Attention To Requirements For Notice, Efforts To Minimize Loss, And Cooperation With Adjusting The Claim

All insurance policies include strict requirements about (1) when and how to notify the insurance company about a claim, (2) the policy holder's responsibility to make reasonable efforts to minimize the loss (e.g., find alternative buyers for farm products), and (3) the insured's responsibility to cooperate with the claim investigation. Failure to comply with any one of these requirements may lead an insurer to dispute the claim.

Make sure you understand your obligations under the terms of the insurance contract, particularly about what you have to do to notify the insurance company about a claim and how soon after the loss you have to do it. Failure to comply with the terms of the contract could waive your right to seek indemnity under the policy.

Pay Attention to How Your Claim Is Handled

If you do make a claim, be sure to keep copies of everything that you submit to the insurance company to support your claim, and take notes on every conversation that you have with your carrier. Even during the

Insurance Coverage and COVID-19....continued

best of times, adjusters make mistakes, just like everyone else. Insurance companies have already received tens of thousands of claims related to COVID-19, so be prepared to resend information that might get lost and to make sure that your adjuster is keeping you notified of the progress of your claim.

Notify Your Carrier If You Change How Your Business Operates

If you are making significant changes to how you are running your farming operation, regardless of whether it's because of COVID-19, be sure to let your insurance agent or the insurance company know. For example, if you were running a pick-your-own operation and now because of COVID-19 you are making deliveries of farm products and you or your employees are using personal vehicles to make those deliveries, your carrier may need to evaluate coverage limits and associated premiums and apply term limits for the new coverages that are needed to cover the changes in risk.

Notify Your Carrier If You Can't Afford To Pay The Premiums For A While

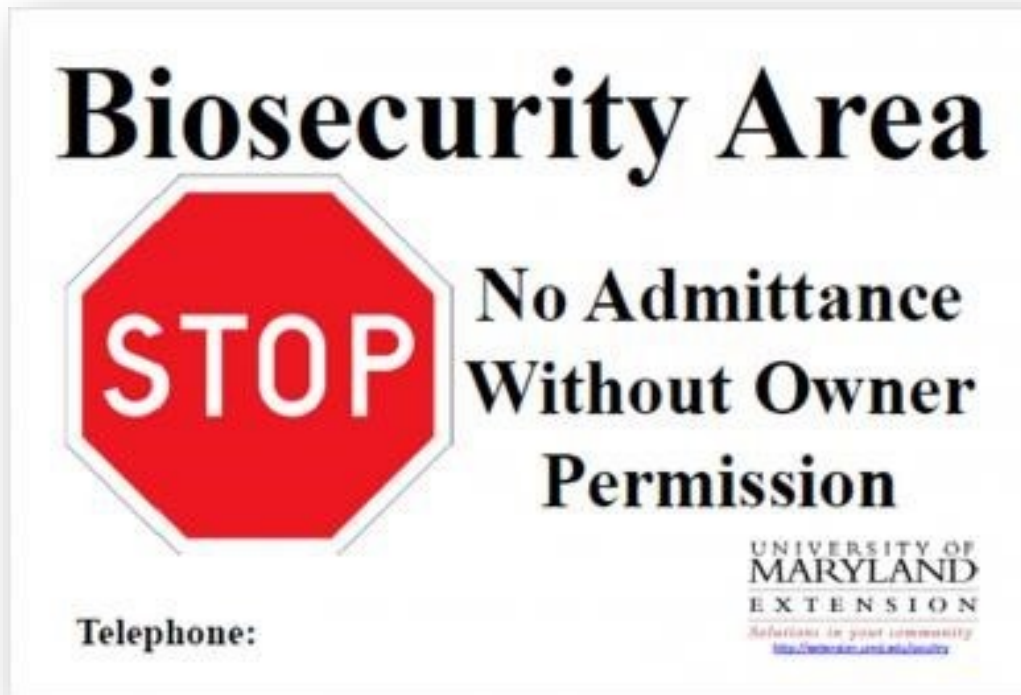
Another impact of the disruption caused by COVID-19 might be that you can't afford to pay the premiums on your current policies. Under normal circumstances, failure to pay premiums is a reason that insurance companies can cancel policies. If you can't make the insurance premium payments as a result of the impacts of COVID-19, however, contact the insurance company to ask if they are offering any extensions or other accommodations for their policyholders who have been impacted by COVID-19. If you've contacted your insurer and haven't been able to get any information or assistance, the Maryland Insurance Administration is requesting that you complete a complaint form on the agency's website. The Maryland Insurance Administration is the consumer protection agency that regulates insurance companies that sell insurance policies in Maryland.

Read Renewals

Insurance companies learn very quickly how catastrophic events like a global pandemic affect their reserves, and they adjust their policies accordingly. Your carrier may (and likely will) add new exclusions or broaden existing exclusions to specifically exclude coverage for losses caused by "disease" or "viral infections," etc. Never assume that the terms of your policy are the same just because you renew your policy. Be sure to ask whether there have been any changes made to the coverages and also the exclusions, and read through the terms of the policy both before you purchase the policy and after to make sure the policy provides the coverage protections that your business needs. If not, keep shopping.

Conclusion

Lawmakers have urged insurance companies to recognize losses from the coronavirus as part of business interruption coverage, and lawsuits have already been filed seeking declarations from the courts that the government-ordered shutdowns are covered business interruption losses, but unless or until those matters are resolved, you need to understand what's covered and what's excluded from coverage under your insurance policy, and exactly what you need to do in order to properly file a claim. Review your policy and then talk to your insurance agent or broker and experienced coverage counsel to determine whether and what losses are covered under your policy, what adjustments you might need to make to ensure you don't lose coverage, and what your coverage needs will be in both the near and long term. And if you have a complaint about an insurance provider, a public adjuster or an insurance adviser, remember that you can file a complaint online with the Maryland Insurance Administration. Just click [here](https://agrisk.umd.edu/blog/insurance-coverage-and-covid-19) to go to the agency's website.



As we are all being 'biosecure' these days for COVID-19 reasons, it is **extremely important** to continue to practice biosecurity on your farm. As you may have heard, there has been **avian influenza** in South Carolina:



POULTRY WORLD: USDA has been working in recent months with scientists and farmers in both [North and South Carolina, where low pathogenic strains \(H5 and H7\)](#) had been found.

US public broadcaster PBS reported USDA spokeswoman Lyndsay Cole saying the case had been expected to be low pathogenic but it looked as though the less severe virus mutated into the more severe version: "Our scientists at the National Veterinary Services Laboratory had looked at the virus characteristics of the low path virus and they had previously indicated that this was one that was probably likely to mutate so they were watching it very closely."

The virus killed 1,583 turkeys and the remaining 32,577 birds have since been euthanized.

The National Turkey Federation stressed turkey products remained safe and nutritious. Its president Joel Brandenberger said: "The flock was quickly depopulated and will not enter the marketplace. Thorough disinfecting and cleaning procedures have already been initiated on premises as well as surveillance of commercial flocks in the surrounding area." The worst ever US bird flu outbreak took place in 2014/5 when 50 million birds – the majority layers – were killed due to bird flu.

[GO TO EXTENSION.UMD.EDU/POULTRY FOR BIOSECURITY INFO AND LATEST ON COVID-19](http://GO_TO_EXTENSION.UMD.EDU/POULTRY_FOR_BIOSECURITY_INFO_AND_LATEST_ON_COVID-19)

Stay Safe!