

Avian Pathogenic *Escherichia coli* Fact Sheet

What is E. coli?

Escherichia coli (E. coli) is a common bacteria that exists in over 150 strains. Many are noninfectious, such as those that exist in abundance in the normal human digestive tract, however some are infectious or opportunistic (infectious in the right conditions). Infectious strains are responsible for many cases of infantile diarrhea, traveler's diarrhea, and urinary tract infections. Death due to E. coli in humans is usually attributed to dehydration that is the precipitate of diarrhea.

What is a pathogen?

A pathogen is a biological agent, such as infectious bacterium, fungus or virus, which causes disease or illness in the host. To say a bacterium is pathogenic means it can make another organism sick.

How do birds get infected with APEC?

Birds contract APEC through their respiratory system, in a mode similar to diseases such as Hantavirus. Infection begins in the lungs after the chicken breathes in the dust of contaminated feces. After that, the infection moves to vital organs such as the liver, heart and spleen.

Is APEC the same as bird flu?

No. Bird flu is a virus, whereas APEC is a bacterium. However, many of the concerns as to the spread and economic impact of the diseases are the same. APEC causes a variety of extraintestinal illnesses in chickens collectively known as colibacillosis, which includes aerosacculitis (inflammation of the air sacs in avian lungs), polyserositis (inflammation of serous membranes), and septicemia (blood poisoning).

Can other animals get APEC?

Unvaccinated chickens, turkeys and other types of birds are susceptible to APEC, and transmission of APEC to humans has been well documented.

Can humans get APEC?

Yes. Because of APEC's similarities to uropathogenic E. coli (UPEC), a human illness, researchers have speculated APEC to be a food-borne source of UPEC.



How does APEC affect the poultry industry?

Colibacillosis has caused the deaths of thousands of chickens to date, resulting in great economic losses for the poultry industry through “increased mortality, high condemnation rate at processing, decreased feed conversion efficiency and costs associated with treatment.”²

Sources:

- *Foundations in Microbiology*
- “In vitro adhesion of an avian pathogenic *Escherichia coli* O78 strain to surfaces of the chicken intestinal tract and to ileal mucus” Sanna Edelman, Susanna Leskelä, Eliora Ron, Juha Apajalahti and Timo K. Korhonen. *Veterinary Microbiology*, Volume 91, Issue 1, Pages 41-56, 2003. <http://www.blackwell-synergy.com/doi/pdf/10.1111/j.1574-6968.2006.00392.x?cookieSet=1>

