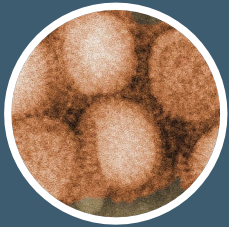




AI: Impact and Mitigation

What is AI's Impact on Food Producers?



In domestic poultry, AI viruses are typically low pathogenicity (LP), causing subclinical infections, respiratory disease, or drops in egg production, but a few AI viruses are highly pathogenic (HP), causing severe systemic disease with multiple organ failure and high mortality.



Low pathogenicity

In layers and breeders, there may be decreased egg production or infertility. The morbidity and mortality are usually low unless accompanied by secondary bacterial or viral infections or aggravated by environmental stressors.



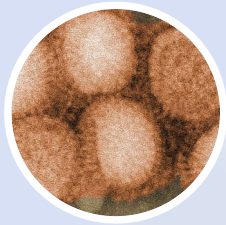
High pathogenicity

AI viruses of high pathogenicity however cause severe, systemic disease with high mortality in chickens, turkeys, and other poultry. Mortality can be as high as 100% in a few days.



H5N1 was responsible for the loss of nearly 50 million US chickens and turkeys in 2015, reducing the commercial (egg) layer populations by 10%¹.

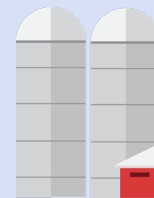
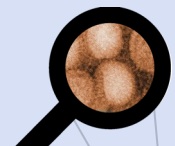
Could Controlling Avian Influenza (AI) Start with Animal Feed?



Avian influenza is a viral infection found in domestic poultry and a wide range of other migratory birds.

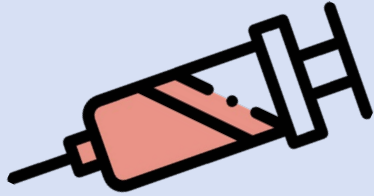
The primary risks for introduction into commercial poultry include:

- 1** Direct contact with infected wild birds
- 2** Untreated contaminated surface water
- 3** Location in the same geographic region as pigs infected with endemic swine influenza virus
(turkey breeder hens only)
- 4** Epidemiologic links to a live poultry marketing system



How Can AI be Mitigated?

The principal preventive strategy is avoidance of infection by minimizing the risk for AI virus introduction or exposure. Prevention is typically accomplished primarily by biosecurity.



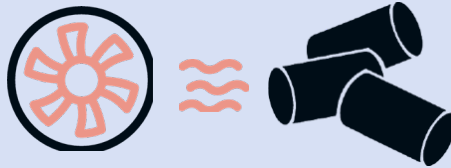
Vaccination

Effectiveness :

AI vaccines provide protection from clinical signs and death, but protection is hemagglutinin subtype specific.

Eradication can only be accomplished if vaccination is accompanied by enhanced biosecurity.

Note: Vaccination for AI can lead to trade restrictions, which is why it is not common.



Heat treatment of feed

Effectiveness :

AIV, which is susceptible to heat, is typically killed during the pelleting process (though not all feeds are pelleted). Also, heat treatment does not provide any residual protection against recontamination.¹



Chemical preservatives

Effectiveness :

Treatment of feed with **Finio** at 2 kg/ton significantly reduced ($P < 0.05$) AIV RNA in samples obtained after 1 hr after contamination.

Suspending the virus in an organic matrix (skimmed milk) increased AIV survivability in feed, but did not impact the effect of Finio².