Fight of the Century

Overcoming H5N1 Avian Influenza

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To whom it may concern:

I certify that all materials presented here are of my own creation and that any work adopted from other sources is duly cited and referenced as such.

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Ladies and gentlemen, welcome to the fight of the century! Step into the ring and view the full force of this historic agricultural showdown because the stakes are high. In this corner, weighing in at a combined economic impact of $1.3 trillion, it's a heavyweight tag-team of animal agriculture, the American poultry and dairy industries (Dykes, 2021; United States Poultry & Egg Association, 2024)! And in this corner, their microscopically terrifying opponent: the 'bird flu!' Also known as avian influenza, this nearly invisible assassin is striking blows against farmers nationwide. My name is Cameron Addington, and I proudly represent the state of Minnesota as the announcer for today's boxing match. I've raised Rhode Island reds, exhibited egg-layers, and possessed a passion for poultry throughout my life.

Highly Pathogenic Avian Influenza, commonly referred to as HPAI or avian flu, threatens poultry and livestock production, creating unprecedented economic, emotional, and health problems. However, experts seek to knock out this opponent—for the betterment of animal health. Let's break down today's match into three rounds, where we'll explore several key questions. First, what is avian influenza? How is it impacting farmers and consumers? And finally, what solutions are there? Now, as we begin round one, take your seats, and let's get ready to rumble!

First, let's learn more about our deadly opponent. Avian influenza is a contagious viral disease that affects poultry and wild birds. The Centers for Disease Control and Prevention (CDC) describes it as highly pathogenic avian influenza, or HPAI, in birds because it causes terrible illness with 90-100% mortality rates in just 48 hours (CDC, 2024). This disease has appeared sporadically among birds for many years, but in 2022, farmers began battling a subtype of highly pathogenic avian influenza called H5N1. This H5N1 subtype is unique for two reasons. First, it's facilitated the deadliest outbreak of HPAI in history, with over 100 million poultry lost.

Second, it's punched through genetic barriers and mutated to infect mammals, including dairy cattle. Avian influenza was identified for the first time in dairy cattle last March, a game-changer for our boxing match (CDC, 2024). The fight has evolved; poultry and dairy now need to team up to battle H5N1 avian influenza together. After introducing our new fighter, let's power into round two and examine the impacts of this disease.

We learned earlier that HPAI in poultry causes rapid mortality; however, the H5N1 subtype isn't highly pathogenic in dairy cattle (United States Department of Agriculture Animal and Plant Health Inspection Service, 2024). Instead of death, infected herds show symptoms of lethargy, a low appetite, and decreased milk production, which has a significant economic impact on farms. For example, let's take a 1,000-cow dairy that produces 95 pounds of milk per cow daily. Dr. Joe Armstrong at the University of Minnesota found that when faced with a 10-20% decrease in milk production from H5N1, such a farm could lose nearly $50,000 per week in income (A. Schuft, personal communication, July 3, 2024).

Furthermore, infected dairy farms pose a risk of spreading the disease to nearby poultry facilities with deadly consequences. A single H5N1 infection on a poultry farm leads to a response called depopulation or mass euthanasia. This action aims to stop the spread of H5N1, or HPAI in poultry, by eliminating birds, disposing of carcasses, and sanitizing the facility—erasing any trace of the disease, but leaving a financial and emotional burden on farmers. Depopulations can also impact the retail prices of dairy and poultry products. When farm production decreases, but demand stays high, prices shoot up. We saw this in January 2023 when the average cost for a dozen eggs peaked at $4.82, largely as a result of HPAI on egg farms (Phaneuf, 2024). Currently, prices aren't so high, but something needs to be done to stop this deadly opponent.

Finally, let's enter round three and explore animal agriculture's counterattack. When there's a disease outbreak in humans, the answer is often to vaccinate against it; however, with H5N1, it's not that simple. One complicated area is United States poultry exports, valued at over $5.4 billion in 2023 (United States Department of Agriculture Foreign Agricultural Service, 2024). Under current trade agreements, vaccinating against avian influenza prevents us from exporting to many trading partners. To protect economic viability around the globe, United States farmers must continue to raise unvaccinated birds. While there are barriers to an H5N1 vaccine, there is a consensus on how both poultry and dairy can counter this outbreak: biosecurity—the research, procedures, and policies farmers use to prevent infectious disease. These practices can be as simple as the fence I use around my chicken coop, or as robust as the entry systems of our nation's largest egg producers, all intended to prevent the introduction of pathogens. The poultry industry has greatly improved the use of biosecurity over the past ten years, which serves as a model for the dairy industry through the H5N1 outbreak.

Today, we've witnessed the fight of the century, where the American poultry and dairy industries teamed up against the bird flu. During the three rounds of the match, we met the deadly opponent, avian influenza; saw punches thrown as we identified its impacts, and finally realized animal agriculture's ultimate counterattack. As the announcer, this boxing match is personal. With family and friends in the dairy industry, hailing from Minnesota, the turkey capital of the nation, and even raising my own laying hens, this topic touches many aspects of my life. I've seen firsthand that the fight has been intense, but it's not over yet. Avian influenza is a formidable foe, but through past struggles, American animal agriculture has always risen to the challenge. The FFA Creed assures us that there will be better days through better ways; poultry

and dairy embody this as they utilize and improve their biosecurity. Therefore, I am confident that with this knockout punch, we will defeat the bird flu.

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