

## Newest Defense Against Avian Flu: High-Powered 222nm Far-UV Lamps

The ongoing Highly Pathogenic Avian Influenza (HPAI) H5N1 epidemic continues to devastate poultry populations worldwide, with over 162 million birds culled in the United States alone since the outbreak began in 2022. As the virus spreads through both wild and domestic bird populations—and now even to mammals—urgent, science-driven interventions are needed to protect poultry operations and the global food supply.

One of the most promising technologies for mitigating avian flu transmission in commercial poultry settings is the deployment of high-powered 222-nanometer FAR-UV lamps. Unlike traditional UV-C light, which poses risks to human and animal health, FAR-UV (at 222nm) has been shown to effectively inactivate airborne viruses, including influenza, while remaining safe for animals and humans for continuous exposure in occupied spaces.

### The Science Behind FAR-UV

Research has demonstrated that FAR-UV light efficiently disrupts the RNA of airborne pathogens, including H5N1, without penetrating human or animal skin. Studies show that 222nm FAR-UV can neutralize over 99% of airborne influenza viruses in controlled environments, making it an ideal biosecurity measure for large-scale poultry operations.

### Advantages of FAR-UV Deployment in Bird Barns

1. **Continuous Virus Suppression:** Unlike chemical disinfectants that require periodic application, FAR-UV operates continuously, ensuring that airborne pathogens are neutralized in real time.
2. **Prevention of Cross-Species Transmission:** Given the recent spillover of H5N1 into mammals, including dairy cattle and humans, implementing FAR-UV in bird barns could reduce the risk of interspecies transmission.
3. **Reduced Dependence on Culling:** By significantly lowering viral loads in poultry facilities, FAR-UV technology could prevent outbreaks severe enough to necessitate mass culling, preserving poultry stocks and stabilizing supply chains.
4. **Minimization of Antimicrobial Resistance Risks:** Unlike antibiotics and antiviral medications, FAR-UV light does not contribute to the development of resistant pathogen strains.
5. **Safety for Workers and Birds:** Unlike traditional germicidal UV-C, FAR-UV does not pose a risk to poultry workers or birds when used at appropriate intensities, making it a practical and scalable solution.

### A Call for Adoption in Poultry Operations

Despite the proven efficacy of FAR-UV technology, adoption in poultry barns has been slow due to outdated regulatory frameworks and industry hesitation. However, as HPAI H5N1 continues to pose a significant threat to global poultry supplies, the need for proactive, science-backed solutions is greater than ever. Large-scale trials should be conducted to optimize FAR-UV placement and dosage in real-world poultry environments, and policymakers must work to integrate this technology into national biosecurity strategies.

### Looking Forward

With the continued evolution of the avian flu virus and its increasing impact on poultry production, it is imperative that industry leaders, scientists, and policymakers act decisively. Deploying high-powered

222nm FAR-UV lamps in bird barns represents a transformative step in biosecurity—one that could help secure the future of poultry farming against not only avian flu but a wide range of airborne pathogens.

If the poultry industry hopes to move beyond the cycle of reactive culling and economic devastation, embracing innovative solutions like FAR-UV technology is no longer optional—it is essential.

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