



National Organic Coalition

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Avian Influenza and Outdoor Access for Organic Poultry Flocks

USDA organic standards require organic poultry to have access to the outdoors. Because of the outbreak of Avian Influenza (AI) in some regions of the country, some have raised the question about whether or not it is safe to allow organic poultry to go outside during the AI outbreak, or even whether outdoor access at all is safe.

The science on this complex issue continues to evolve (as does the virus itself), and there is no consensus among veterinarians and scientists regarding the need for either permanent indoor confinement or outdoor access. Below is a discussion of the science that challenges the belief that permanent indoor confinement is necessary in the age of avian influenza outbreaks, and in fact points to benefits of outdoor access. Given that *temporary* confinement in areas of an active outbreak may be necessary, we discuss the existence of emergency provisions in the USDA organic rules to allow temporary confinement of organic poultry for the safety of the birds.

Research Shows:

Avian flu viruses generally carried by wild birds are almost invariably harmless to poultry (low pathogenicity avian influenza, or LPAI).¹ Some LPAI strains, however, have the potential to mutate into “highly pathogenic avian influenza” (HPAI) strains, which are deadly to poultry. Research shows that **the mutation of LPAI to HPAI occurs almost exclusively in crowded indoor poultry houses.**^{2 3 4 5 6}

This is consistent with one of the theories of virulence transmission, that highly virulent strains develop in crowded confinement where the host, even when sick and immobile, can continue to pass the virus to others. In these conditions, the success of the virus no longer depends on keeping the host mobile and alive.⁷

The AI virus transmits through feces and does not easily survive sunlight^{8 9} and drying.^{10 11} It is therefore more likely to survive and spread in or between crowded, unsanitary, indoor poultry houses.

Lower stocking densities and outdoor access are part of the solution, not the problem. Preventing future outbreaks of HPAI should involve addressing the *root of the problem* by building a system of poultry farming with low densities, outdoor access, and healthy birds with strong immune systems.

However, given the current system of poultry farming, the emergence of new HPAI viruses will likely continue. The question becomes: should organic flocks be kept indoors to protect them from HPAI?

- **Wild birds are one of *many* risk factors.** One school of thought is that wild birds spread the virus and indoor confinement stops the spread.¹² However, it does not explain the rapid spread from indoor farm to indoor farm, or that indoor farms appear to be worst affected.^{13 14}
- **The real risk factor: indoor confinement poultry operations.** Wild birds do not infect domestic poultry with HPAI; rather, confined poultry infect wild birds.^{15 16 17}
- **HPAI viruses spread from indoor chicken farms,** even when no wild birds are involved.
- **People** (veterinarians, farm workers, catchers, vaccination crews), trucks, water, feed, and shared equipment can all spread the virus.^{18 19}
- Even **flies** — impossible to keep out of chicken houses — are carriers.^{20 21}
- Recent (June 2015) USDA findings suggest that HPAI can be transmitted through **air** and **wind**.²²

Therefore, flawless biosecurity — a complete barrier between indoor houses and the outside world — is a solution in theory, but not in practice. Total biosecurity is impossible, whether on outdoor farms or in indoor confinement farms.²³ The only way to prevent outbreaks and the accompanying economic losses to farmers is by preventing HPAI strains from developing in the first place.

While we question whether temporary indoor confinement of organic flocks is in fact protective, we note that **organic regulations (7 CFR 205.239) do allow temporary indoor quarantine during emergencies:**

“The producer of an organic livestock operation must establish ... year-round access for all animals to the outdoors, ... except that animals may be temporarily denied access to the outdoors ... because of conditions under which the health, safety or well-being of the animal could be jeopardized.”^{24 25}

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- ¹Suarez, D., Senne, D.A., *et al.* 2004. Recombination resulting in virulence shift in avian influenza outbreak, Chile. *Emerging Infectious Diseases* 10(4): 693-699.
- ² Schrijver RS and G Koch (eds). Avian Influenza: Prevention and Control. Workshop 1: introduction and spread of avian influenza. page 4. Accessed at <http://library.wur.nl/ojs/index.php/frontis/article/view/1033/604>
- ³ “Stressful, overcrowded confinement in industrial poultry facilities facilitates immune suppression in birds already bred with weakened immunity, offering viruses like bird flu ample opportunities for spread, amplification and mutation. Placing inbred birds into these kinds of unsanitary environments without the chance for a breath of fresh air or a ray of sanitizing sunshine seems the perfect storm environment for the evolution of the next super flu strain of pandemic influenza.” In: Greger, M. 2006. *Bird flu: a virus of our own hatching*. Lantern Books. Page 214.
- ⁴ Peiris J.S., de Jong M.D. and Y. Guan. 2007. Avian influenza Virus (H5N1): a threat to human health. *Clinical Microbiology Reviews* 20(2): 243-267.
- ⁵ Arjan Stegeman states the Netherlands outbreak originated in an outdoor flock. Dennis Alexander responds: “If you look at all the outbreaks where you knew it must have arisen, never once we have seen HPAI in an outdoor flock. The Netherlands might be an exception but you never know where it first arose.” In: Schrijver RS and G Koch (eds). Avian Influenza: Prevention and Control. Workshop 1: introduction and spread of avian influenza. Accessed at <http://library.wur.nl/ojs/index.php/frontis/article/view/1033/604>. Page 4.
- ⁶ U.S. Geological Survey, National Wildlife Health Center. Wildlife Health Bulletin #04-01. Accessed at: http://www.nwhc.usgs.gov/publications/wildlife_health_bulletins/WHB_04_01.jsp
- ⁷ Greger, M. 2007. The human/animal interface: emergence and resurgence of zoonotic infectious diseases. *Critical Reviews in Microbiology* 33: 243-299.
- ⁸ Sutton D., Aldous E.W., *et al.* 2013. Inactivation of the infectivity of two highly pathogenic avian influenza viruses and a virulent Newcastle disease virus by ultraviolet radiation. *Avian Pathology* 42(6):566-8.
- ⁹ Zou, S., Guo, J., *et al.* 2013. Inactivation of the novel avian influenza A (H7N9) virus under physical conditions or chemical agents treatment. *Virology Journal* 10: 289.
- ¹⁰ Shortridge KF, Zhou NN, *et al.* 1998. Characterization of avian H5N1 influenza viruses from poultry in Hong Kong. *Virology* 252:331-42. Page 339.
- ¹¹ *ibid*
- ¹² Animal and Plant Health Inspection Service (APHIS), U.S. Department of Agriculture. Biosecurity basics: protect your birds. Accessed at: http://www.aphis.usda.gov/animal_health/birdbiosecurity/biosecurity/basicsprotect.htm
- ¹³ “A notable feature of the Dutch epidemic was that large, densely-stocked flocks were worst affected. Some extensively managed flocks were infected by the virus without showing significant illness of either birds or people.” In: Meredith, M. 2004. Bird flu epidemics, what more can be done. *World Poultry* 20(2): 28-29.
- ¹⁴ Philpott, T. 2015, May 20. Bird flu is slamming factory farms but sparing backyard flocks. Why? Mother Jones. Accessed at: <http://www.motherjones.com/tom-philpott/2015/05/ongoing-bird-flu-crisis-stumps-experts>
- ¹⁵ Lebarbenchon C., Feare C.J. *et al.* 2010. Persistence of highly pathogenic avian influenza viruses in natural ecosystems. *Emerging Infectious Diseases* 16(7): 1057-1062.
- ¹⁶ Gauthier-Clerc, M., Lebarbenchon C. and F. Thomas. 2007. Recent expansion of highly pathogenic avian influenza H5N1: a critical review. *Ibis* 149: 202-214.
- ¹⁷ Spencer, T. 2006. Avian influenza in free-range and organic poultry production. ATTRA. Accessed at: <https://attra.ncat.org/avian.html>
- ¹⁸ *ibid*

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- ¹⁹ British Columbia Ministry of Environment. Avian influenza and wild birds: Accessed at: http://www.env.gov.bc.ca/wld/documents/wldhealth/avian_influenza.pdf
- ²⁰ Wanaratana S., Amonsin A., *et al.* 2013. Experimental assessment of houseflies as vectors in avian influenza subtype H5N1 transmission in chickens. *Avian Diseases* 57(2):266-72.
- ²¹ Sawabe K., Tanabayashi K., *et al.* 2009. Survival of avian H5N1 influenza A viruses in *Calliphora nigribarbis* (Diptera: Calliphoridae). *Journal of Medical Entomology* 46(4):852-5.
- ²² USDA. Animal and Plant Health Inspection Service. 2015, June 15. Epidemiologic and other analyses of HPAI-affected poultry flocks: June 15, 2015 report. Accessed at: http://www.aphis.usda.gov/animal_health/animal_dis_spec/poultry/downloads/Epidemiologic-Analysis-June-15-2015.pdf.
- ²³ Koch, G. and A.R.W. Elbers. 2006. Outdoor ranging of flocks: a major risk factor for the introduction and development of High-Pathogenicity Avian Influenza. *NJAS* 54-2: 176-194. page 186
- ²⁴ 7 CFR 205.239(a)(1) and (b)(3)
- ²⁵ <http://www.ams.usda.gov/AMSV1.0/getfile?dDocName=STELPRDC5088957>