

## After The Fire: Backyard Chickens and Egg Safety

Introduced pollutants after urban wildfires can impact the safety of eggs produced by backyard chickens. The chicken's exposure to these contaminants may compromise eggs and pose health risks to humans if consumed. By learning about potential hazards and taking appropriate precautionary steps to evaluate and reduce your flock's exposure, backyard chicken owners can better protect themselves and increase the likelihood of producing safe, nutritious eggs in a post-fire environment.

### Are Eggs from Your Backyard Safe to Eat Post-Fire?

After a wildfire, harmful contaminants are left behind in the soil and water. These contaminants can be ingested by backyard chickens and later be found in the edible portions of their eggs. **Out of an abundance of caution, do not eat the eggs from chickens that have foraged in burnt areas.**

### How Do Contaminants Transfer into My Chickens and Eggs?

Urban wildfire debris often contains concentrated levels of heavy metals (e.g., cadmium, lead, and mercury), household chemicals, and ash which are byproducts of burned structures, vehicles, and other urban materials. Chickens are especially prone to ingesting these contaminants through directly inhaling or ingesting toxic particles, ingesting contaminated soil with their feed, or drinking contaminated water sources (Figure 1). Overtime, the repeated ingestion of contaminated material can lead to the buildup of toxins in their bodies.



**Figure 1:** Through foraging, chickens may ingest soil with their feed.

**As chickens ingest toxins from contaminated soil, these substances will eventually appear in the edible portions of their eggs** in levels that exceed the recommended thresholds of consumption per day.<sup>1</sup> **Note that it is also normal for chickens to stop laying eggs after a traumatic event like a wildfire**, with no set recovery time. Additionally, shorter days in the winter can trigger a 8-to-12-week molt, which naturally halts egg production. As for the safety of their meat, healthy birds should be safe to consume, however organs that filter toxins (e.g., liver, kidneys) should be avoided.

### Evaluating Chickens' Risk to Contaminants

To evaluate the risks of contaminants after a wildfire, it is important to know the quality of soil and water in your chickens' foraging area. **Testing the soil and water where your chickens forage and their eggs will inform you of the toxicity levels present and the safety of the eggs the chickens produce.** Soil quality can be professionally assessed using the California Environmental Laboratory Accreditation Program (ELAP; [https://www.waterboards.ca.gov/drinking\\_water/certlic/labs/](https://www.waterboards.ca.gov/drinking_water/certlic/labs/)). UC ANR's Healthy Soils for a Healthy California website (<https://ucanr.edu/sites/soils/>) also includes several resources about soil health and soil testing. Water quality can be assessed using water quality testing kits, which are widely available in stores and online. Egg testing can be completed through UC Davis' California Animal Health Food and Safety Lab (CAHFS), where

chicken owners can send several of their eggs for pool testing. **It is recommended that you test your eggs to assess contaminant levels at least once post-wildfire.** For more information on testing available and interpreting results from CAHFS, be sure to visit the UCCE's Poultry and Heavy Metal Contaminants website (<https://cahfs.vetmed.ucdavis.edu/>).

## Mitigating Risks and Protecting Your Flock

To reduce the likelihood of your flock ingesting toxins and debris post-wildfire:

- Keep chickens from foraging near household hazardous waste, building materials, pesticides, fire suppression chemicals and other toxic materials. Presumably, until the source of contamination is removed, your chickens will continue to be exposed and your eggs will show levels of contamination.
- Place chickens on raised beds or a specific area in your yard with clean soil, mulch or other materials that can help reduce contact with toxic materials.
- Place chicken feed in a confined feeder that keeps the feed off the ground (Figure 2).
- Avoid feeding unwashed garden scraps to your chickens from areas heavily affected by ash.
- Do not compost using shells of chicken eggs that were exposed or potentially exposed to toxins.
- Make calcium available to your chickens (e.g., free choice oyster shells) to prevent the absorption of lead,<sup>2</sup> however most chickens will not consume calcium supplements unless they have a deficiency.



**Figure 2:** Reservoir Chicken feeders help keep chicken feed elevated and off the soil.  
PC: Bird Pal Products

## References and Additional Resources

- <sup>1</sup> Bautista, A. C., Puschner, B., & Poppenga, R. H. (2014). Lead Exposure from Backyard Chicken Eggs: A Public Health Risk? *Journal of Medical Toxicology*, 10(3), 311–315. <https://doi.org/10.1007/s13181-014-0409-0>.
- <sup>2</sup> Kelman, T., & Pitesky, M. (2020, November 25). *Safety of Backyard Chicken Eggs Post Urban Wildfire*. YouTube. <https://www.youtube.com/watch?v=93AwSGyQbVs>.
- Martinez, O., O'brien, C., Huang, A., Acosta, S., Kelman, T., Puschner, B., & Pitesky, M. (2020). *Understanding and Communicating the Risks of Urban Fires on Eggs Produced from Backyard Chickens in California Future Work*. <https://ucanr.edu/sites/poultry/files/294539.pdf>.
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