



Food Safety Implications for Raising Backyard Poultry

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Many families are tackling to-do lists or exploring new hobbies while enduring the lockdown consequences of the Covid-19 pandemic. There has been an increase in the number of people wishing to raise chickens, ducks, and even turkeys in their backyards. These animals produce meat and eggs, along with opportunities to show children where food comes from. Of course, many people simply want the birds as pets. Among the resources available to help you make informed decisions about backyard poultry is "[Backyard Chicken and COVID-19](#)" from Mississippi State University.

Before you get started, however, it is important to check your city or county zoning ordinances to determine if raising or processing poultry, or selling poultry-related products, such as eggs, is allowed where you live.

The objective of this article is to provide information regarding food safety that can help ensure that your birds are handled as safely as possible.



Why do I need to care about food safety?

Each year, thousands of Americans get sick from consuming food contaminated with dangerous bacteria, such as Salmonella, E. coli, and Campylobacter. These bacteria are common in chickens and other birds raised in backyards or in “free-range” settings. Bacteria can be transmitted to eggs and poultry meat when those products have not been cleaned or prepared properly.

How do bacteria travel to my food?

There are many ways for food to come in contact with bacteria. As stated above, many harmful bacteria are regularly found in the intestines of animals. These bacteria get transmitted to meat or eggs when those products come in contact with the animal's feces or litter, either directly or through the animal's environment. As the animals are slaughtered and opened, there are opportunities for intestinal contents to come in contact with the carcass. It may not stop there because carcasses or meat that are mishandled can lead to cross-contamination of other foods. Examples of this are cutting ready-to-eat vegetables with the same utensils or using cutting boards that were used to process raw meat without washing and sanitizing them. The best way to prevent people from being exposed to these bacteria is by following food safety procedures when harvesting, storing, and handling eggs and meat.



What preventive measures can we take when my kids or I play with the birds?

Many people like to keep backyard poultry as pets, an experience that can offer educational opportunities. Handling the birds, even the cute chicks or ducklings, and then preparing or eating food can expose people to dangerous bacteria. Therefore, anyone handling poultry must thoroughly wash their hands with soap and water for more than 20 seconds (the time it takes to sing the “Happy Birthday” song twice). Remember to wash your hands after handling or playing with the birds or even being in the animal's environment. You can avoid bringing the bacteria from the coops into your home by changing shoes or boots after visiting the birds.



What are the steps to take to properly process my backyard poultry?

Many people who have chickens at home may want to slaughter and process the birds themselves instead of taking them to a commercial processor (always an option). During the processing, however, there are many opportunities for the carcass to come in contact with bacteria. Steps can be taken to minimize this risk. Foremost, those doing the processing should be skilled in how this is done, from the start (slaughter) to the end (packing and storing). Oklahoma State University produced [a resourceful video](#) to showcase processing of backyard poultry.

All processing environments, tools, and utensils must be cleaned and sanitized before use. A big source of contamination is perforation of the digestive system during processing, exposing the intestinal contents to the carcass. To reduce the risk of contamination, producers should withhold feed from the birds for 6 to 12 hours prior to slaughter. The feed withdrawal will allow the digestive system to be emptied. Water should still be provided to the birds during this time period.

Birds are slaughtered by exsanguination – removal of the blood. In commercial processing facilities, the birds are first stunned; they are given some sort of treatment, such as an electric shock, that renders them insentient – incapable of feeling pain. The stunned bird is orientated, head toward the ground, and exsanguinated by severing the jugular veins in the neck with a sanitized and very sharp knife. This allows the blood to leave the bird.

Once the bird has bled out, it is placed in scalding water (140°F). The scalding process loosens feathers, which will be plucked. Scalding water should be changed frequently; as it becomes dirty, it serves as a source of cross-contamination for subsequent birds. Wastewater from butchering should be disposed either in a compost pile or, if there is a small amount, in a sewer system. The wastewater is high in bacteria and can make others sick if it is not disposed of correctly. Make sure that the wastewater is not used to water your fruit and vegetable garden. The wastewater could contaminate the produce you are growing. Again, it is important to check city and country zoning ordinances to determine which practices are allowed and which practices are not.



Following exsanguination and removal of feathers, the birds are processed; the head, feet and internal organs are removed. This should be done with utmost care so as to not perforate the digestive tract, to prevent contents from coming in contact with the carcass. At this point, the carcass should be washed thoroughly with clean water and chilled immediately at refrigeration temperature. The best way to do this is to submerge the birds in an ice bath. Simply fill a large container with water and copious amounts of ice, enough to completely cover the birds. The container should also be big enough so that the birds are not crowded. Freshly slaughtered birds are warm (internal temperature of about 107°F), so have plenty of ice on hand because the ice will melt rapidly. The goal of an ice bath is to bring the temperature of the chickens to 40°F within an hour. The best way to check the bird's temperature is by using a meat thermometer placed in the thickest part of the chicken (breast or thigh). Avoid touching the bone with the thermometer, because that can cause an inaccurate temperature reading. The thermometer should be cleaned between uses to prevent cross-contamination. As with scalding water, chilling water should also be changed regularly as physical matter (potentially containing harmful bacteria) accumulates. After removing processed poultry from the ice bath, place poultry in individual bags. Bags help to keep poultry from becoming contaminated. Bags containing processed poultry should be dated and labeled before going into a freezer. If you want to freeze the meat, know that it must be consumed within the recommended time length (9 months for poultry parts and 12 months for whole poultry). If the poultry is to be refrigerated, it should stay in the fridge for only one or two days. Before two days is up, the meat should either be frozen or consumed.

What are the steps to take to properly collect and clean eggs?

Eggs should be collected at least once a day to limit exposure to bacteria within the nesting environment. An eggshell is porous. Therefore, water used to wash eggs should be warmer (at least ~20°F warmer) than the egg itself, to prevent debris and bacteria from being pulled through the shell pores. A clean, sanitized cloth or brush can be used to scrub the outside of the shell to remove foreign material. An approved egg-wash detergent or special cleaning wipes can be used to clean the eggs. The special detergent and wipes can be bought at a store that sells farm supplies. If you buy the cleaning products online, make sure the website and vendor are credible.

Eggs can be sanitized by using a homemade solution of 1 tablespoon household bleach to 1 gallon of clean water. It is important to note that you should NOT submerge the eggs into the water. The eggs should be completely dried and placed into unused, new egg cartons and placed immediately into the refrigerator.

What should I do to properly store the eggs and the processed poultry?

Why all the fuss about temperatures? Because bacteria have optimal temperatures for growth. This temperature range, between 40°F and 140°F, is known as the “danger zone,” where bacteria can flourish. Even the best processed poultry products cannot be considered sterile, or completely free of bacteria. Therefore, leaving fresh eggs and processed poultry in the “danger zone” allows bacteria to grow to dangerous levels and significantly increases the risk of foodborne illness.



What are the recommended cooking tips to prevent foodborne illness?

To prevent foodborne illness, don't overlook the cooking process. The internal temperature of egg dishes should reach 160°F, and the internal temperature of poultry dishes should reach 165°F. It is always important to use a food thermometer to ensure the internal temperature reaching the recommended temperature. Appearance and texture are not always reliable to ensure the food being fully cooked.

Summary

The CDC estimates one in six Americans get sick from foodborne illnesses every year. Many believe that they are the “five in six” who do not get the illness. This phenomenon, “optimism bias,” helps us to keep thinking about the positive. However, no matter how healthy and optimistic we are, it is important to do the homework and understand the food safety risks of having backyard poultry. This paper provides best practices of handling backyard poultry regarding food safety and disseminates key knowledge about those practices. County Extension Educators, health departments and local or state boards of animal health are great resources for additional information and can help you determine if, given your location, raising backyard poultry is a wise decision.

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