



United States Department of Agriculture



Biosecurity Workbook

A guidebook to help defend your flocks every day and in every season.



USDA's Defend the Flock education program offers free tools and resources to help everyone who works with or handles poultry follow proper biosecurity practices. By practicing good biosecurity, you can reduce the risk of people, animals, equipment, or vehicles carrying infectious diseases onto your property. You will help protect other flocks by preventing the spread of disease.

The **Defend the Flock** program brings together biosecurity information and free resources from USDA and other experts, including growers, veterinarians, state agencies, scientists, and industry professionals.

This workbook will help you create a biosecurity plan that keeps your birds safe. All the information you need to practice good biosecurity is available at the **Defend the Flock** website including free checklists, resource guides, videos, and other tools.

NAME _____

OUR FLOCKS ARE LOCATED AT _____

UPDATED AS OF _____

This workbook is intended as a guide for residential and non-commercial flock growers and does not represent technical guidance or requirements for USDA programs.





CARING FOR YOUR FLOCKS IN SPRING

Taking care of your flocks this season

It's hatching season! Welcoming new chicks, ducklings, or poults into your flock is one of the most enjoyable parts of poultry keeping. Starting out with healthy poultry is the best way to keep flocks safe from disease. That means buying your poultry from sources that participate in the National Poultry Improvement Plan (NPIP, www.poultryimprovement.org). When sourcing replacement poultry, you can ask the hatchery or source farm to describe their biosecurity measures.

✓ CHECKLIST FOR ADDING AND REPLACING POULTRY

- Only purchase or source poultry from NPIP-certified breeders, hatcheries, and dealers.** When sourcing replacement poultry, you can ask the hatchery or source farm to describe their biosecurity measures.
- Wear site-specific clothing, including footwear, when loading or delivering poultry.** Do not cross the other farm's Line of Separation, unless necessary.
- When purchasing poultry in person, check for signs of good health and approximate age.** Do not purchase birds that appear old or unhealthy.
- Confirm that the poultry you purchase tested clean for the same diseases your current flock tested for.**
- Always transport replacement or new poultry in equipment and vehicles that are regularly cleaned, disinfected, and inspected.**
- Be sure to clean and disinfect tools, cages, and any other equipment before using them again or taking them to another site.**
- Once home, quarantine the new additions for 30 days.** Check for sneezing, coughing, nasal drainage, swollen eyes, mites, lice, and other health issues daily. Do not allow birds that were sick with respiratory signs while in quarantine to enter your flock, even if they recover.
- After combining new birds with your existing flock, check original stock daily for any signs of illness.** The stress of this change can cause an underlying illness to surface.
- To prevent bullying, do not add young poultry to your existing flock until all the birds are about the same size.**

Did you know?

Mail order hatcheries offer vaccines for day old baby chicks. Check for needed vaccines in your area based on past disease outbreaks and what vaccines the hatchery is able to administer.



Watch for migrating birds:

It's crucial to protect your poultry from the germs and diseases that wild birds and other pests carry. Check coops, pens, and poultry houses regularly for areas that allow birds to perch, nest, or enter, including extended roof eaves, rooftop ventilation, overhead wires, torn screens, holes, and broken door openings. In the spring, sweep away old nests before nesting season—birds will return to the same nests year after year.

Every day, every time biosecurity

A clean home is a safe home: Keeping poultry houses, coops, and other enclosures clean is one of the best ways to prevent germs from spreading among poultry flocks.

✓ CHECKLIST FOR CLEANING AND DISINFECTING POULTRY ENCLOSURES

- Wear personal protective equipment** or clothing and shoes that you only use when caring for your poultry. This includes boot covers or boots that can be disinfected. Don't move between houses or coops wearing the same protective gear, because you can spread germs throughout the farm. Change into a different dedicated set each time you enter a house or coop.
- Enclosures must be empty for a thorough cleaning.** Wait until the house is empty of birds or move the birds to a separate area before cleaning.
- Remove all litter, manure, and other debris.**
- “Dry” clean all areas** — brush, scrape, and shovel off manure, feathers, and other materials. Disinfectant will not penetrate organic matter or caked-on dirt.
- “Wet” clean all surfaces** — scrub with water and detergent. Work from top to bottom and back to front.
- Rinse all surfaces carefully with water.**
- Apply disinfectant** according to the directions on the label. Be sure to use disinfectant that is registered by the U.S. EPA for use in poultry facilities.
- Leave the enclosure empty** until it is completely dry. Use fans and/or open doors and windows to help speed the drying process. Drying is an important final step to inactivate germs that escaped during the disinfection process.
- When you're done, remove and discard** your protective gear. If using dedicated clothing and boots, change clothing and clean and disinfect your boots.
- Wash your hands** thoroughly with soap and water. Wash and dry your dedicated clothing.





Do I really need separate clothes and footwear for poultry care?

Yes! Personal protective equipment stops disease spread in two crucial ways: First, it covers up any germs you're already carrying, and second, it traps any new germs you've picked up so you don't spread them to the next enclosure. Give visitors and family members personal protective equipment to wear when they are in contact with your birds.



Notes:





Date and Source of Poultry Added

Date **Source**

Spring Migration Dates

Find migration data specific to your area by visiting <https://birdcast.info/>.

Cleaning Log

Date **Notes**





CARING FOR YOUR FLOCKS IN SUMMER

Taking care of your flocks this season

Pay attention to your water supply: Making sure your birds stay hydrated during hot weather is one important part of summer care. Having good quality water at your site year-round is a crucial part of biosecurity. Your poultry need clean, safe water to drink, and you need it to cool your birds and clean your facilities and equipment without contaminating them. Water can carry disease agents, so the choices you make in how you source your water are vital to protect your birds' health. Be sure to use a municipal water supply or treated well water so you know it's clean.

✓ CHECKLIST FOR MAINTAINING A SAFE WATER SUPPLY

- Use water from a contained water supply** (well or municipal system) for drinking, evaporative cooling, and cleaning whenever possible. This is the most biosecure water source for poultry.
- Consult with experts when choosing water treatment methods.** The right methods vary based on many factors, including the clarity and temperature of the water and type of drinkers. Consult with your county's Cooperative Extension Service agent for advice on livestock water treatment.
- If you must use surface water, sanitize it first!** Ponds, streams, and other surface water can carry disease-causing germs. A combination of filtration and disinfection can be very effective at reducing germs in water for poultry. Household bleach can be used to sanitize water for small flocks at a rate of 8 drops (1/8 tsp) per gallon of clear water.
- Make cleaning easier.** Place waterers out of sunlight or use waterers you can't see through to prevent slime growth.
- Put clean water in clean waterers.** Scrub waterers with soap, water, and brush to remove slime (algae and biofilms). Rinse with clean water. Dip or spray waterer parts with sanitizing solution, such as 1 tablespoon of household bleach in 1 gallon of water and allow to dry before refilling.
- Space out waterers and feeders** to reduce the amount of feed the birds drop in the waterers.
- Write it down.** Include in your biosecurity plan the steps taken to provide uncontaminated water to your birds. This may include written water sanitation procedures, water treatment log sheets, and guidance for caretakers.



Do I really need frequent water testing?

Even though municipal water is secure, your well water may still have bacteria. Test your water regularly to make sure your system is clean. If not, you will need to sanitize it before cleaning with it or giving it to your birds. Untreated surface water is not safe for your flock.





Manage feed to guard against pests: Warm weather brings more critters to your yard, but don't give wild birds, rodents, and insects a free lunch! Remove spilled or uneaten feed every day, and make sure storage units are secure and free of holes.

✓ CHECKLIST FOR POULTRY FEED AND REPLACEMENT LITTER

- Write it down.** Include in your biosecurity plan the steps taken at your site to protect poultry feed and litter against contamination from wild birds, rodents, insects, and other animals.
- Store feed, feed ingredients, and fresh litter in **closed bins or buildings** to prevent contamination.
- Be careful when moving stored feed, feed ingredients, and fresh litter into poultry houses.** Use only cleaned and disinfected equipment, or better yet, equipment dedicated only to handling feed and fresh litter.
- Clean up any spills as soon as possible** to minimize the chance of attracting wildlife and rodents.
- Keep any bagged feed above the floor and have rodent control measures in place.**
- Do a daily feed spill check.** Identify where feed spills happen and work to reduce them.

Make sure poultry feed and litter are secured to prevent contamination.
Store feed, ingredients, and fresh litter in closed bins or buildings.



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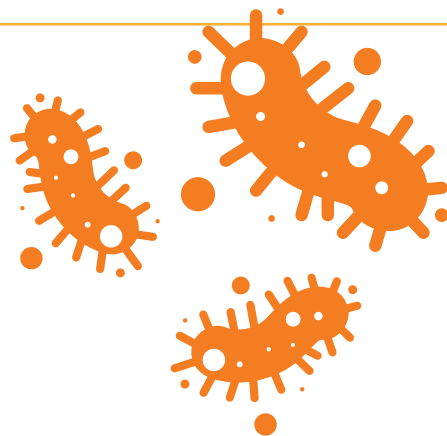


Every day, every time biosecurity

Clean equipment and vehicles with soap and water before and after they come in contact with your flock. Be sure to spray the tires and undercarriage of vehicles, where contact with germs is most likely. Don't share tools, poultry supplies, or lawn and garden equipment with other flock owners or neighbors, whether at home or at fairs and shows. If you must, be sure to clean and disinfect the items before they reach your property and before returning them.

✓ CHECKLIST FOR EQUIPMENT AND VEHICLES

- Clean equipment and vehicles** with soap and water before and after they come in contact with your flock. Be sure to spray the tires and undercarriage of vehicles, where contact with infectious agents is most likely. Germs can survive months — or even years — in small spaces that are hard to clean.
- Do not share tools, poultry supplies, or lawn and garden equipment** with other flock owners or neighbors. If you must, be sure to clean and disinfect the items before they reach your property and before returning them.
- Establish procedures for cleaning and disinfecting equipment and vehicles.** Don't be afraid to change these procedures if you see a problem or if something's just not effective or practical. There's always room for improvement.
- Give clear and consistent instructions** to everyone who handles your equipment or vehicles.
- Define paths where trucks, vehicles, and other equipment** can travel to access your poultry area. This will help limit the spread of germs and disease.



Don't haul disease home!

Germs that cause poultry disease can survive months — or even years — in small spaces that are hard to clean.





CARING FOR YOUR FLOCKS IN FALL

Taking care of your flocks this season

Get your coop ready for winter: Poultry kept in wet, unventilated coops in freezing weather are prone to frostbite of combs and wattles. Check you birds' housing to ensure ventilation and drainage are not blocked by debris and can keep the house or coop dry in wet weather. Clean up wet spots and damp feed promptly.

Wild bird feathers, nests, feces, and other organic materials can also carry disease. These items can come in contact with your flock through poultry enclosures, feed and water supplies, and even vehicles at your property. Don't walk through or drive trucks, tractors, or equipment in areas where waterfowl or other wildlife feces may be. If you can't avoid this, clean your shoes, vehicle, and/or equipment thoroughly to prevent bringing disease agents back to your flock.

✓ CHECKLIST TO PROTECT AGAINST WILD BIRDS, RODENTS AND INSECTS

- Feed and water your birds inside their house.** Wild birds and other animals are less likely to visit indoor feeders and waterers.
- Check coops, pens, and poultry houses regularly** for areas that allow birds to perch, nest, or enter. These include extended roof eaves, rooftop ventilation, overhead wires, torn screens, holes and broken door openings. Concrete or wire aprons around building walls deter burrowing animals.
- Clean and disinfect poultry enclosures.** This includes disposing of soiled litter through composting, burial, bagging and taking it to a landfill, or other lawful method. Sick birds can easily contaminate straw and other bedding.
- Understand what poses a disease risk:** It's not just the wild birds and pests themselves. Feathers, nests, feces, and other organic materials can also carry disease. These items can come in contact with your flock through poultry enclosures, feed and water supplies, and even vehicles at your property.
- Sweep away old nests before nesting season** — birds will return to the same nests year after year.
- Don't give wild birds, rodents, and insects a free lunch!** Remove spilled or uneaten feed right away, and make sure feed storage units are secure and free of holes.
- Protect your flock's water supply.** Make sure wild birds, rodents, and other pests can't access it. And if you can, use a municipal water supply or treated well water so you know it's clean.
- Don't walk through or drive trucks, tractors, or equipment** in areas where waterfowl or other wildlife feces may be. If you can't avoid this, clean your shoes, vehicle, and/or equipment thoroughly to prevent bringing disease agents back to your flock

Be sure to:

Find out when wild bird migration season is in your area (<https://birdcast.info>). Be extra careful during this time to protect your flock from infectious diseases. If you find native wild bird nests with eggs or young in them, contact your cooperative extension service for advice.



Wild birds are a danger to your flock.

Food, water, and shelter in areas where domestic birds live are a magnet for pests and wild birds.



Every day, every time biosecurity

Separate for safety: The best way to prevent illness is to have clear separation between your poultry area (where your birds are kept) and the rest of the world. A Line of Separation is a functional line separating the poultry house or enclosure (and the poultry inside) from exposure to potential disease sources. Include your entire poultry house/enclosure and any outdoor access areas. Have only one entry to better control who and what crosses the line. If possible, mark the line with tape, paint, gravel, or other permanent way to display it. You can also establish a Perimeter Buffer area: a zone outside of your bird enclosures that gives you space to work in while caring for your birds, but is separate from the rest of your property. On small farms and in backyards, this might just be some ground around a coop or barn where you keep your feed bin and equipment.

✓ CHECKLIST: TIPS FOR USING A LINE OF SEPARATION

- Provide dedicated coveralls, footwear, and cleaning/disinfecting supplies.**
- Define your line of separation.** Include your entire poultry house/enclosure and any outdoor access areas. Have only one entry to better control who and what crosses the line. If possible, mark the line with colored tape, paint, gravel or other permanent way.
- In your biosecurity plan, draw the boundaries for your poultry areas and clearly outline what caretakers, visitors, or suppliers must do when crossing it.** This includes how to move birds, personal items, feed, vehicles, equipment, and supplies. Give training on the procedures.
- At your entry point, include a place to change out of footwear and outer clothing before entering.** On the inside, have a place to put on site-specific footwear and outer clothing after crossing the line of separation.
- Post signs at the entry point reminding everyone of the steps they need to take to cross the line of separation.**
- Have a sink with running water and soap or hand sanitizer at the entry point.** Post signs reminding people to sanitize their hands.
- Consider keeping an entry logbook, if you have more than a few visitors.** List who or what crosses into your poultry area (people, poultry, food, vehicles, equipment) and when those items enter and exit.





✓ CHECKLIST: TIPS FOR USING A PERIMETER BUFFER AREA

- Establish the perimeter buffer area with enough space to complete all of your normal bird-related tasks** (except the removal of dead birds) without leaving the buffer area.
- Include a map that clearly outlines the perimeter buffer area in your biosecurity plan.** List the rules people must follow when entering or leaving this area. Give training and post signs to remind people of the steps they need to take.
- Keep non-essential people and items, including vehicles, from entering the buffer area.** Have a parking area outside the buffer area, with a clear entrance to the buffer area nearby.
- Require any vehicle or equipment that enters the perimeter buffer area to be cleaned and disinfected** before entering and before leaving the buffer area.
- Consider a locked barrier at the site entrance.** If this is not possible, place signs at the entrance to the perimeter buffer area to prevent unauthorized access.

Keep your flock away from activities that can spread disease.
Establish a perimeter buffer area to separate flocks from management tasks.



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Draw or describe your line of separation and perimeter buffer area:

A large, empty rectangular box with a thin orange border, intended for the user to draw or describe their line of separation and perimeter buffer area.

The Line of Separation sign on the next page can be posted at the **entrance** to your farm or poultry area indicating that entry is restricted. Include a phone number that visitors must call before entering and check mark what visitors must do before gaining entry.





Infection Control Line of Separation

*Have you visited another place with
poultry in the last 72 hours?*

Please call: _____ before entering.

Anyone crossing this line must:

- Sanitize hands
- Change into provided footwear
- Put on disposable shoe covers
- Put on provided clothing
- Sign logbook
- _____



CARING FOR YOUR FLOCKS IN WINTER

Taking care of your flocks this season

Manage manure and litter even during colder months: In cold weather, the avian influenza virus and other disease-causing germs can survive in manure and litter for a long time. Develop a plan for storage and removal, as well as a backup plan for long-term storage if there's a poultry disease outbreak, when spreading or storing manure and litter offsite might be restricted because of the risk of virus spread.



Keeping your flock warm.

In most climates, small flock keepers do not need to heat coops for adult birds in wintertime. Heaters can be expensive and a fire hazard. Ideal winter housing for a small flock is a dry and well ventilated coop with southern facing windows.



✓ CHECKLIST FOR MANAGING POULTRY MANURE AND LITTER

- Assess your site and options for removing, storing, and disposing of manure and used litter.** This might be onsite or offsite. The right approach depends on the species and number of birds and type of housing system at your facility.
- Define the scope:** What kinds of manure and litter do you need to manage at your site, and how much is produced over a given timeframe?
- Set up standard procedures that cover these basics:**
 - Collecting, transporting, storing, and/or using manure
 - Any State or local laws that apply
 - Environmental concerns
 - Wildlife, insect, and rodent control
- Develop a backup plan for long-term storage in a prolonged outbreak.** Spreading or storing manure and litter offsite may not be allowed depending on the risk of virus spread.
- Clean and disinfect** any vehicles and equipment used in manure removal **BEFORE** they arrive onsite.
- Remove all manure and litter from the poultry house and do a complete cleaning and disinfection **before adding any birds.**



EVERY DAY, EVERY TIME BIOSECURITY

Flock losses will happen—be prepared:

While everyone who raises poultry works very hard to keep their flocks healthy and intact, the reality is that eventually you will encounter dead birds within your flock. But what is normal and when do you have a problem? A large percentage of dead or dying birds in your flock is not normal. Rule out obvious causes, such as predators, weather issues, or other external factors. Address the root cause so you can keep it from happening again. But if you see the signs of illness, report it right away.

✓ CHECKLIST: TIPS FOR SAFE DISPOSAL OF DEAD BIRDS

- Plan ahead!** Include procedures for carcass disposal in your biosecurity plan. You'll need routine procedures for occasional bird deaths, along with a contingency plan if a disease outbreak occurs affecting a large number of birds.
- Make sure your procedures cover these basics:**
 - Disposal methods follow all local, State, and Federal laws.
 - If using a pickup service, describe how the dead birds are moved to the pickup location and show that the vehicles/equipment at the pickup location never cross the perimeter buffer area.
 - Draw carcass movements on the site map, or explain them in some other clear way.
- Collect all bird carcasses as soon as possible,** at least once every day.
- Store or dispose of carcasses in a way that does not attract wild birds, rodents, insects, or other animals.** Collection bins should have tight-fitting lids, and burial pits or compost piles should be covered adequately to deter burrowing scavengers.
- Avoid cross contamination from equipment and vehicles.** Clean and disinfect them before and after leaving the farm. Don't use the same equipment and vehicles for feeding chore, manure and carcass handling, and animal handling, unless you clean and disinfect them before using for a different task.
- Visit disposal sites only at the end of the day** to avoid carrying contaminants from farm to farm.

The best way to dispose of the birds depends on the size of your flock, the type of poultry you raise, and where you are located.





You need to know what's allowed in your area (rules vary by state) and how to handle disposal safely to lower the risk of bringing new germs or diseases onto your property and protect your flock from more losses.

Set up standard procedures that cover these basics:

- ✓ **Collecting, transporting, storing, and/or using manure**
- ✓ **Any state or local laws that apply**
- ✓ **Environmental concerns**
- ✓ **Wildlife, insect, and rodent control**
- ✓ **Backup plan for on-site storage during a poultry disease outbreak**

Flock deaths happen—make sure you are prepared.
Use the right disposal methods to prevent spreading disease that could cause more losses.



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KNOW THE SIGNS OF POULTRY DISEASE

If you see signs of illness in your flock, make note of what you're seeing. Report any signs of illness or unexplained deaths to animal health officials right away. This will help prevent the spread of disease and protect neighboring flocks.

✓ CHECKLIST: TIPS FOR REPORTING UNUSUAL MORTALITY

- Know who to call.** Identify your local resources, including veterinarians who see poultry, State and USDA animal health officials, and the nearest veterinary diagnostic laboratory. Save their contact information.
- Rule out obvious causes,** such as predators, weather issues, or other external factors. You don't need to report those bird deaths but consider addressing the root cause so you can keep it from happening again.
- If you see signs of illness in your flock, make note of what you're seeing.** Write down when the signs started, and keep track of how many birds are affected, and the total number of birds in your flock.
- Report any signs of illness** or unexplained deaths to your veterinarian or an animal health official right away. This will help prevent the spread of disease and protect neighboring flocks.

Respond quickly to signs of disease.
Report unexplained bird illness or death immediately.



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Look for signs of illness:

- ✓ Reduced energy or appetite
- ✓ Lower egg production; soft-shelled or misshapen eggs
- ✓ Swelling of the head, eyelids, comb, wattles, and shanks
- ✓ Purple discoloration of the wattles, comb, and legs
- ✓ Difficulty breathing
- ✓ Runny nose, sneezing
- ✓ Twisting of the head and neck
- ✓ Stumbling or falling down
- ✓ Diarrhea
- ✓ Decreased activity
- ✓ Tremors
- ✓ Circling
- ✓ Complete stiffness

Report Sick Birds

If you see signs of illness, take action right away!

Veterinarian: _____

Cooperative Extension Office: _____

State Veterinarian: _____

Animal or Poultry Diagnostic Lab: _____

USDA: **(866) 536-7593**

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