



Handling Baby Poultry

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With an increase in backyard poultry raising, and even keeping poultry as pets, it is necessary to keep in mind proper health concerns in handling baby poultry. Chickens, ducks, geese, turkeys, peafowl, and game birds can harbor and transmit certain agents that might infect people. This fact sheet will review practices that will help minimize the chance for disease transmission between you and your poultry.

Diseases transmissible from animals to humans are known as zoonotic diseases. Poultry are not unique in carrying organisms that can potentially cause illness to people. There are over 860 known zoonotic diseases; poultry have been known to harbor at least 20 of these. Thankfully they occur rarely or not at all in recent times.



The following are guidelines that will minimize the chance of acquiring illness from baby poultry.

Always purchase chicks and poults from a National Poultry Improvement Plan (NPIP) certified hatchery. Reputable feed stores and poultry suppliers make sure they sell only young poultry originating from NPIP certified sources. This assures that the birds arrive free of certain poultry-specific diseases that could weaken the young birds and allow the acquisition of other infectious agents that could be transmissible to human beings.

Good husbandry practices are essential for keeping the young healthy. Remember that chicks cannot generate enough body heat to keep themselves warm. This is the reason in nature the mother hen keeps her young close to her body. If the hen is not available, we must assume the role of providing sufficient heat. This process is called brooding. The brooding period, before the young can grow feathers and generate sufficient body heat, lasts about 4 weeks for most poultry species. A heat source, such as a gas poultry brooder stove or infrared heat lamp, is necessary during this period. Generally, chicks should be kept in an environment that allows a temperature gradient between 115°F to 85°F for the first few days. The temperature should be decreased by about 5°F each week thereafter. Ensuring enough space underneath (or around) artificial heat sources will allow chicks to find and move to temperature zones as needed.

Place the chicks on a clean bedding source, such as pine or cedar shavings. The bedding will absorb moisture and feces thereby helping to keep harmful organisms away from the chicks. Quickly remove any caking of litter and add additional clean dry bedding as necessary. Bedding and litter should be removed and the area disinfected between groups of baby poultry.

Use good quality feed – preferably feed formulated professionally from a reputable manufacturer. Certain disease organisms, most commonly *Salmonella* or *E. coli*, can be harbored in feed if high quality ingredients are not used or if the feed is not handled properly. Keep feed off the ground in properly constructed and elevated troughs or buckets. Rodents and other vermin are attracted to chicken feed. Store the feed in such a way that scavengers cannot gain access. Feed only enough at a time for the chicks to reasonably consume within a day or two. Chick feed exposed to the elements can lose its nutrient value and spoil.

If feasible, wear disposable exam gloves when handling chicks. Wash hands thoroughly with soap and water after finishing, being especially careful to remove all dirt and debris. Alcohol-based or other effective hand sanitizers should be applied after washing.

After chicks are moved out of the brooder, properly dispose of the used litter by approved local methods. An ideal way to use the litter is to compost it and apply to the home garden. There are excellent publications that teach how to properly

compost backyard wastes, and poultry litter can be a part of this process.

Poultry keeping can be a source of pleasure in addition to providing a ready source of eggs and meat. It must be emphasized that most zoonotic poultry diseases are not common enough to discourage the enthusiastic pursuit of this interesting pastime. Proper handling of chicks will enhance that pleasure by helping to keep both you and your chicks healthy.

REFERENCES

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National Poultry Improvement Plan, USDA.
http://www.aphis.usda.gov/publications/animal_health/content/printable_version/npip_brochure_12-05.pdf

Saif, Y. M. Editor, *Diseases of Poultry*, 12th ed. Blackwell Publishing.

Farrell-Poe, Kitt, and Rich Koenig, *Backyard Composting in Utah*.
<http://extension.usu.edu/files/publications/factsheet/HG-Compost-01.pdf>.)

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Backyard Chickens

By Jennifer Cook, CSU Extension/NRCS, 2011

Raising backyard chickens can provide you with fresh eggs, pest control, and hours of entertainment. Before you get started, it is important to learn about what chickens need to be healthy and happy. First step, make sure your local municipality allows you to have chickens!

Hens are productive egg layers for two to four years depending on the breed. Depending on the breed, expect five eggs per week for the first two years, and realize that egg production will decrease during the winter. Chickens molt once a year, usually in the Fall. Roosters are not necessary unless you want the eggs to be fertile. The trick to having consistent egg layers is simply meeting their food, water, and shelter needs.

Food and Water

Chickens need constant food and water supply. Water should be under 80 degrees Fahrenheit and not frozen solid. Provide a free choice supply of complete LAYER feed which will have extra calcium, 16-18% protein, and essential amino acids/vitamins/minerals. Also feed ground oyster shells or ground egg shells for calcium if needed. Chickens will eat kitchen scraps like veggies, fruit, meat, and dairy. They love grass clippings, bugs, seeds, worms, and weeds. During cold weather, provide extra energy with "hen scratch" such as corn or soy grains. Flax seed will provide omega-3's when greens are not available. Alfalfa hay can also be fed.

Chickens have gizzards which are like secondary stomachs that help them grind their food before digestion. This process requires chickens to swallow gritty substances like gravel. If chickens do not have access to gravel in the chicken run, you can purchase "grit."

Sunlight and Soil

If you allow your chickens outdoor access, install chicken fence around your property and let the chickens "free range" a few hours every day. If needed, clip their wings to keep them from escaping. In the chicken run and coop area, shoot for at least 10 square feet per chicken and make sure there is soil or sand because chickens like to take dirt baths to deter mites.

The Coop

Coops need to protect chickens from heat, sun, wind, extreme cold, and predators. Use lots of high carbon litter like wood shavings, tree leaves and straw as bedding. The coop should provide a place for the chickens to lay eggs and a place to roost.



Wild chickens roost in trees at night. To simulate tree limbs, build roosting bars four feet high and accessible in the coop. Chickens are very docile and vulnerable at night. Make sure predators like raccoon, fox, mountain lion, skunk, hawk, and coyote, are closed out. Farm cats can stay in the coop at night to hunt mice, however cats will kill chicks.

Nesting boxes should not be directly under the roosting area because chickens poop a lot at night. Nesting box sizes will vary by breed. An average size is 10" x 10" X 18" tall - 12" X 12" X 18" tall with a 2" tall dam to hold bedding. Plan on one box per four or five birds. Keep the boxes cleaned daily so your eggs will be clean.

Other Considerations

Labor – daily egg collection, feeding, and watering.

Smells – use high carbon litter to reduce manure smells.

Noise – hens make some noise when they lay an egg. Roosters crow anytime, day or night. Tell your neighbors in advance if you expect noisy chickens.

Pathogens and Diseases – not much in a small flock. Don't kiss the birds, and wash your hands and equipment.

Disposal – How will you manage the older chickens which are no longer laying eggs? Keep them, eat them, euthanize them according to local regulations, or donate old birds to animal operations such as the Raptor Rehabilitation Center.

For more information:

Chickens in Your Backyard, A Beginner's Guide by Rick and Gail Luttmann

CSU Extension factsheet, "Home-Produced Chicken Eggs"

<http://www.ext.colostate.edu/pubs/foodnut/09377.html>

CSU Veterinary Extension: Avian webpage

<http://veterinaryextension.colostate.edu/menu2/avian.shtml>



Home-Produced Chicken Eggs

Fact Sheet No. 9.377

Food and Nutrition Series | Food Safety

by M. Bunning and J. Avens*

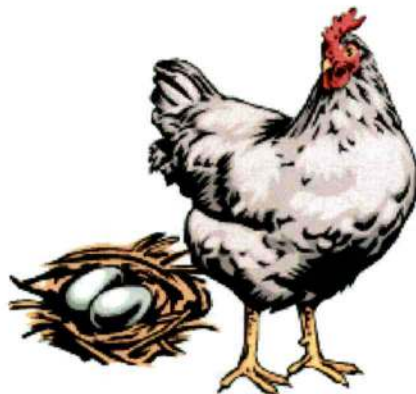
Before establishing a backyard chicken flock, check local laws and homeowners' association (HOA) covenants. Chickens are not allowed to be raised in many urban areas. The number of chickens, distance from property lines, and type of house may be defined in local regulations.

Poultry may carry bacteria such as *Salmonella* and *Campylobacter* that can cause illness to you and your family. Infected birds do not usually appear to be sick and baby chicks may be especially prone to shed these microorganisms. Even eggs with clean, uncracked shells may occasionally contain bacteria. While anyone can become ill from exposure to these microorganisms, the risk of infection is especially high for children, pregnant women, the elderly, and persons with weakened immune systems. If small children handle eggs, always supervise hand washing afterwards.

Steps to Ensure Safe, Home-produced Chicken Eggs

Caring for the Flock

- Maintaining the flock in an enclosed shed is often a local requirement and will help protect the flock from predators and make egg collecting easier.
- Eggs will stay cleaner if the shed area is kept clean and dry. Maintain floor litter in good condition. Thoroughly clean and disinfect the shed at least twice a year. Obtain an approved disinfectant from your feed store and apply according to directions.
- Allow one nest for every three to four chickens and make sure nests are large enough for your hens. To protect eggs, pad nests with straw or wood chips. Clean



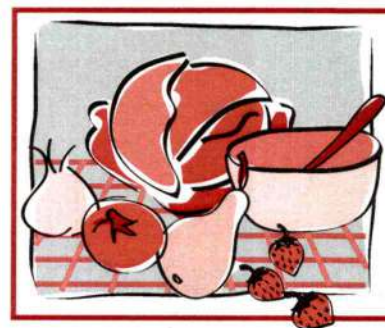
out nest boxes once a week to remove dirty litter and manure and replace with clean nesting material.

- Allow adequate nest space and plenty of clean nesting material to help to ensure clean eggs and limit egg breakage.
- Provide a perch above the floor over a dropping box away from the nests. Chickens will roost on the perch to sleep and defecate into the wire-mesh covered dropping box.

Caring for the Eggs

Collect the eggs often. Eggs that spend more time in the nest have an increased chance of becoming dirty, broken, or lower in quality. Collecting eggs at least twice daily is recommended, preferably before noon. Consider a third collection in late afternoon or early evening, especially in hot or cold weather. Coated wire baskets or plastic egg flats are good containers for collecting eggs. Discard eggs with broken or cracked shells.

Cleaning. Dirty eggs can be a health hazard. Eggs with dirt and debris can be cleaned with fine sandpaper, a brush, or emery cloth. If eggs need to be washed, the temperature of the water should be at least 20F warmer than the egg. This will prevent the egg contents from contracting and



Quick Facts

- Eggs from your own backyard chicken flock can be a convenient and nutritious source of protein, plus they offer the added reward of producing your own food.
- To ensure egg safety and quality, home producers should manage chickens and handle eggs properly.
- Following these practical tips can help you enjoy safe home-produced eggs.

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producing a vacuum. It will also prevent microscopic bacteria from being pulled by vacuum through the pores of the egg. A mild, non-foaming, unscented detergent approved for washing eggs can be used. A dishwashing liquid that is free of scents and dyes is acceptable. Eggs can be sanitized by dipping in a solution of 1 tablespoon household bleach to 1 gallon of water before storage. Dry eggs before storing because moisture may enter the shell pores as eggs cool on refrigeration.

Storage. Store eggs in the main section of the refrigerator at 35F to 40F; the shelves in the door tend to be warmer than interior shelves. If collected and stored properly, eggs can have a safe shelf life of greater than three weeks. Date the storage carton or container and use older eggs first. If you have more eggs than you can use, you can break them out of their shells and freeze them. Only freeze fresh eggs. Beat until just blended, pour into freezer containers, seal tightly, label with the number of eggs and the date. Add a small amount of salt, sugar, or corn syrup to prevent gelling and improve the keeping quality of the eggs. It's a good idea to note any additional ingredients on the freezer container. The whites and yolks may also be frozen separately.

Preparation. Never eat eggs raw. Undercooked egg whites and yolks have been associated with outbreaks of *Salmonella enteritidis* infections. To prevent illness from bacteria, cook eggs until yolks are firm and cook foods containing eggs thoroughly to 160F. Use a food thermometer to be sure. Do not keep cooked or raw eggs at room temperature for more than two hours.

Caring for Manure

- Compost chicken manure to proper temperatures to kill harmful bacteria before being used to fertilize garden plots that are used for growing fruits and vegetables. Improperly applied manure can be a source of bacterial contamination for produce grown in the garden. A better option is to use chicken manure in flower gardens, shrub borders, and other nonfood gardens however chicken manure can be high in nitrates and may damage plants if applied directly.

Caring for Yourself

- Always wash your hands with soap and water after handling eggs, chickens, or anything in their environment.
- Do not wash feed and water dishes from the chicken shed in the kitchen sink.
- In Colorado, there are no laws that prevent the sale of eggs by the producer from a home laying flock. Small egg producers are exempt from licensing requirements as long as the eggs are sold directly to the final consumer of the eggs. If the eggs are sold to restaurants, stores, commercial establishments or another egg distributor, then an Egg Producer/Dealer License is required.
- If you choose to share eggs from your flock with friends and neighbors it is important to follow the safety recommendations outlined in this fact sheet. Use generic egg cartons that do not display a store or brand name and provide the date eggs were collected. Plastic egg holders sold for camping or plastic egg trays available from farm supply stores are good options for distributing eggs because they can be washed and reused.

When sharing eggs from your flock with friends and neighbors, it is important to follow the food safety recommendations in this fact sheet and use generic egg containers that show the collection date.

Home Chicken Flock Management Resources

Mississippi State University Extension Service. The Home Flock, www.poultry.msstate.edu/extension/pdf/home_flocks.pdf.

North Carolina Cooperative Extension Service. Small Flock Management, www.ces.ncsu.edu/depts/poulsci/tech_manuals/small_flock_resources.html#eggs.

Sustainable Agriculture Research and Education. Profitable Poultry: Raising Birds on Pasture, www.sare.org/publications/poultry.htm.

References

- American Egg Board Eggyclopedia, www.aeb.org/.
- CDC Health Risks Associated with Raising Chickens, www.cdc.gov/.
- Colorado Department of Agriculture. Guidelines for egg washing for small flock owners, www.colorado.gov/.
- Colorado Department of Agriculture. Eggs, www.colorado.gov/cs/Satellite/Agriculture-Main/CDAG/1167928229830.
- Davis, J.G. and C.R. Wilson. 2005. Choosing a Soil Amendment. Colorado State University Extension Fact Sheet 7.235, www.ext.colostate.edu/pubs/garden/07235.html.
- Moreng, R. and J. Avens. 1991. Poultry Science and Production. Waveland Press, Inc. Prospect Heights, IL.
- University of New Hampshire Cooperative Extension. Producing Your Own Eggs, http://extension.unh.edu/resources/representation/Resource000472_Rep494.pdf.
- USDA Food Safety and Inspection Service. Shell Eggs from Farm to Table, www.fsis.usda.gov/Factsheets/Focus_On_Shell_Eggs/index.asp.
- Virginia Cooperative Extension. Proper Handling of Eggs: From Hen to Consumption by PJ Clauser, <http://pubs.ext.vt.edu/2902/2902-1091/2902-1091.pdf>.



2013 Poultry Resource List

CSU Extension

CSU Extension County Office Directory

<http://www.ext.colostate.edu/cedirectory/countylist.cfm>

Home Produced Chicken Eggs

www.ext.colostate.edu/pubs/foodnut/09377.html

CSU Veterinary Extension

<http://veterinaryextension.colostate.edu/menu2/avian.shtml>

Blueprints for Poultry Equipment and Housing Plans

www.ext.colostate.edu/pubs/blueprints/poultry.html

Farmers Market Price Reports

<http://www.coopext.colostate.edu/abm/marketreports.htm>

Colorado Department of Agriculture

Egg Program

http://www.colorado.gov/cs/Satellite/ag_ICS/CBON/1251622245009

Organic Certification

<http://www.colorado.gov/cs/Satellite?c=Page&cid=1167928162828&pagename=Agriculture-Main%2FCDAGLayout>

Colorado Market Maker

<http://co.marketmaker.uiuc.edu/>

Environmental Protection Agency (EPA)

Livestock and Poultry Environmental Stewardship (LPES) curriculum

<http://www.extension.org/pages/8963/livestock-and-poultry-environmental-stewardship-curriculum>

Colorado Department of Revenue

Colorado Department of Revenue publication DR 1002: Colorado Sales and Use Tax Rates

<http://www.colorado.gov/cms/forms/dor-tax/dr1002.pdf>

Poultry Emergency Disease Plan

<http://www.colorado.gov/cs/Satellite?blobcol=urldata&blobheader=application%2Fpdf&blobkey=id&blobtable=MungoBlobs&blobwhere=1251749391479&ssbinary=true>

Colorado Well*A*Syst

Livestock Management

<http://www.colorado.gov/cs/Satellite?blobcol=urldata&blobheader=application%2Fpdf&blobheadername1=Content-Disposition&blobheadername2=MDT-Type&blobheadervalue1=inline%3B+filename%3D1019%2F548%2Flivestock+mgmt.pdf&blobheadervalue2=abinary%3B+charset%3DUTF-8&blobkey=id&blobtable=MungoBlobs&blobwhere=1167363905971&ssbinary=true>

USDA: Agricultural Marketing Service (AMS)

Poultry Program

<http://www.ams.usda.gov/AMSV1.0/poultry>

Quality Grading, Certification, Verification (Eggs and Poultry Meat)

<http://www.ams.usda.gov/AMSV1.0/ams.fetchTemplateData.do?template=TemplateN&navID=CommodityAreas&leftNav=CommodityAreas&page=PYQualityStandards>

USDA: Economic Research Service (ERS)

USDA Briefing Room

<http://www.ers.usda.gov/Briefing/Poultry/>

Outlook Report

<http://www.ers.usda.gov/publications/ldp/>

USDA: Food Safety and Inspection Service (FSIS)

A Guide to Federal Food Labeling Requirements for Meat and Poultry Products

http://www.fsis.usda.gov/PDF/Labeling_Requirements_Guide.pdf

Western Sustainable Agriculture Research and Education Program (SARE)

Profitable Poultry: Raising Birds on Pasture

<http://www.westernsare.org/Learning-Center/Bulletins/Profitable-Poultry>

NCAT Sustainable Agriculture Project (ATTRA)

Poultry Feeding

<https://attra.ncat.org/attra-pub/poultry/feeding.html>

Poultry Processing

<https://attra.ncat.org/attra-pub/poultry/processing.html>

Poultry Production Systems

<https://attra.ncat.org/attra-pub/poultry/production.html>

Poultry Management

https://attra.ncat.org/intern_handbook/poultry.html

Other Resources

Proper Disposal of Dead Poultry – North Carolina Cooperative Extension

http://www.ces.ncsu.edu/depts/poulsci/tech_manuals/disposal_dead_poultry.html

United Egg Producers: Animal Husbandry Guidelines

http://www.unitedegg.org/information/pdf/UEP_2010_Animal_Welfare_Guidelines.pdf

Colorado Egg Producers: Code of Conduct - A Commitment to the Best Possible Care of Chickens Laying Eggs for Consumers

<http://www.coloradoeggproducers.com/about-cep>

National Chicken Council Animal Welfare

<http://www.nationalchickencouncil.org/industry-issues/animal-welfare-for-broiler-chickens/>

Mississippi State University – Poultry

<http://msucares.com/searchmsucares.html?cx=002558586324194522968%3Awyxmhw8tyy&cof=FORID%3A11&ie=UTF-8&q=The+Home+Flock&sa=Search&siteurl=msucares.com%2Fpoultry%2Fconsumer%2Findex.html&ref=&ss=&siteurl=msucares.com%2Fpoultry%2Fconsumer%2Findex.html>
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Purdue University – Poultry

<http://ag.ansc.purdue.edu/poultry/extensio.htm>

Virginia Cooperative Extension – Poultry

<http://pubs.ext.vt.edu/category/poultry.html>

Colorado USDA Certified Poultry Slaughter & Processing Facilities

Mountain States Poultry & Meat

9102 Pieper Road
Wellington, CO
(970) 221-3120

Troyer Poultry

3336 5725 Road
Olathe, CO
(970) 901-3680

For an updated list or more information, contact USDA Denver District office at (303) 236-9793 or visit the Food Safety and Inspection Service (FSIS) at www.fsis.usda.gov

For a list of all custom slaughter and processing facilities in the state of Colorado under Inspection and Consumer Services, Meat – Custom Processing visit:

http://www.colorado.gov/cs/Satellite?c=Document_C&childpagename=Agriculture-Main%2FDocument_C%2FCDAGAddLink&cid=1188376826755&pagename=CDAGWrapper