

Production of Eggs and Home-Raised, Home-Butchered Broiler and Turkeys

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Home-raised, home processed poultry is becoming a popular alternative farm enterprise. The scale of operation may be small; only a dozen or twenty broilers raised in one's back-yard for home consumption, or up to several thousand broilers. Note: Kansas state law allows producers to home process up to 1,000 birds per year for direct marketing to the consumer. More than that must be processed with state or federally inspectors present. Call the Kansas Department of Agriculture meat and poultry inspection program at: (785) 296-3513 for specific information.

With the proper information, individuals may raise and process broilers using simple equipment, and achieve results with no more food safety risk than broilers purchased at the supermarket. However, each step in the process must be considered, and care taken to reduce risk, so that the final product is wholesome and safe. These steps are outlined below, with risk factors noted. The wise producer develops a written plan to address both prevention of diseases and infestation, as well as control measures to be used if necessary.

Some home-raised, home-processed birds are being raised according to certified organic standards, others are raised without the use of medicated feeds or antibiotics, but are not certified organic, and others are raised in varying conditions. Increased consumer demand, premium pricing, and personal preference are reasons for raising meat and eggs without antibiotics. Consult your organic certifier for specific details on guidelines that apply. Most certification standards require 100% certified organic feed and no use of antibiotics. Some allow vaccination; most allow mineral and vitamin additives. Diatomaceous earth and pro-biotics are allowed for parasite and disease control. Pro-biotics are fed to promote animal health by competing with pathogens or by improving digestion and nutrient absorption. Some poultry diseases are more difficult to control without the use of medicated feed or water, but it is possible to keep them at reduced levels. Good sanitation, protected (shaded) and clean pens, balanced rations, clean water, and starting with healthy chicks are good practices for all farms.

The food safety guidelines discussed in this chapter are designed to apply to both the certified organic farms and those that are not organic. The following areas will be covered:

Part 1: Facilities

Part 2: Source of Chicks

Part 3: Feed and Water

Part 4: Processing and Set-up Procedures

Part 5: Delivery and Storage

Part 6: Disposal of Waste

Part 7: Eggs

How to use these self-assessment tables:

Use the tables on the following pages to rate your risks. For each question, indicate your risk level in the right-hand column. If a practice does not apply to you, skip that item and continue. Although some choices may not correspond exactly to your situation, choose the response that best fits. Refer to the information preceding each table if you need explanation. After you complete the tables, transfer all the Medium-High and High risks to the Action Check list at the end of the chapter on Page 2-9.

Part 1—Facilities

(Note: it is assumed that chicks from day 1 to about 3 weeks of age are raised in an enclosed, heated area with fresh food and water. Most of the guidelines below apply to birds that are at least 4 weeks of age, and either being raised as broilers or laying hens).

Good Management practices for home-raised poultry:

- A clean, stress-free environment allows the birds to resist disease.
- Labor decreases when flocks are kept in low-density conditions (3-4 sq.ft/bird) because clean up is easier and the lower density stresses birds less.
- Anytime poultry are tightly confined, the area should be cleaned daily.

- Growing pens and equipment for the poultry operation should be dedicated for that use only.
- Rodents should not be allowed in growing areas, feed storage areas, or near the live birds; they are known carriers of disease.
- Provide adequate shelter; heat and cold stress will increase disease susceptibility.
- Mortalities should be removed upon discovery and the flock should be checked at least daily.



Assessment 1—Facilities

	LOW	LOW-MEDIUM	MED-HIGH	HIGH	Your Score
Area	Clean outdoor area or confined grazing pen with grass, moved daily (as with a “chicken tractor”), uncrowded conditions, or raised indoors with little or no crowding.	Confined to grazing pen, moved frequently but not daily. Confined to pens or cages in buildings with some exercise possible.	Confined to grazing pen, not moved frequently, wet or unsanitary conditions, or raised indoors at high density, little or no clean litter on floor.	Raised in closed, dirty building, little air circulation, <0.7 sq. ft./bird. Free-range birds have access to insecticides or other toxic chemicals.	<input type="radio"/> Low <input type="radio"/> Low-Med <input type="radio"/> Med-High <input type="radio"/> High
Previous use of production area	No previous poultry or other animal production.	Previously used for animal production, but area and equipment thoroughly cleaned.	Previously used for animal production; equipment partially cleaned.	Area previously used; not cleaned between restocking.	<input type="radio"/> Low <input type="radio"/> Low-Med <input type="radio"/> Med-High <input type="radio"/> High
Rodent control	Rodents are controlled when observed using mechanical means (traps).	Rodents controlled with traps and approved rodent bait, with precautions to prevent bird access to bait.	Rodents not well controlled. Poison is first line of defense. Bird access to bait somewhat limited or prevented.	Rodents not controlled, -or- poison used for control and is within reach of birds.	<input type="radio"/> Low <input type="radio"/> Low-Med <input type="radio"/> Med-High <input type="radio"/> High
Comfort	Shade and rain shelter provided if outdoors. Draft-free place at night, with off-ground roosts for older birds. If indoors, fresh air and sunlight available.	Only roofed shelter provided with off-ground roosts for older birds.		No shelter for outdoor birds. Indoor birds raised under crowded conditions with little fresh air, high ammonia concentration.	<input type="radio"/> Low <input type="radio"/> Low-Med <input type="radio"/> High
Flock mortality	Pens clear of vision obstructions, checked twice daily and mortalities removed.	Pens clear of vision obstructions, checked daily and mortalities removed.	Pens mostly clear of vision obstructions, checked every two days and mortalities removed.	Areas of pens not easily visible or mortalities become putrid before removal.	<input type="radio"/> Low <input type="radio"/> Low-Med <input type="radio"/> Med-High <input type="radio"/> High

Part 2—Source of Chicks

The general successful growth and good condition of the flock begins with the chicks. High quality, disease-free chicks are important for a healthy, high-producing flock. Purchase chicks from a reputable company. Look for those that participate in the **National Poultry Improvement Program (NPIP)**; they will have met national criteria. The company that produces the chicks should be able to provide information about immunization of their flock and the breed(s) they have. Request chicks that have been vaccinated against Marek's Disease. The lowest risk of disease is found in vaccinated flocks. The time and money spent preventing disease pays off in better growth and condition, not to mention avoiding the expense of treating a disease.

Inspect chicks for lice and mites before releasing them in your facility. If found, either refuse the chicks or isolate them and treat until control is established. In addition, be aware that wild birds are a

source of lice and mites and must be prohibited from nesting on or around the enclosure. Your local extension agent can assist you in identifying pests and determining appropriate control methods for your operation.

For most producers, buying chicks fits in with the limits of space and time they face. Breeding your own birds or allowing the hens to brood, is more time consuming than one might think, and requires separate space for breeding. Should you wish to produce your own chicks, be sure that your hens are healthy and that you know their genetics. To further prevent the spread of disease, clean the eggs to be incubated or brooded by the hen.

Choose a breed that is best suited for your specific requirements. For example, never choose a heavy weight breed for egg production.

Assessment 2—Source of Chicks

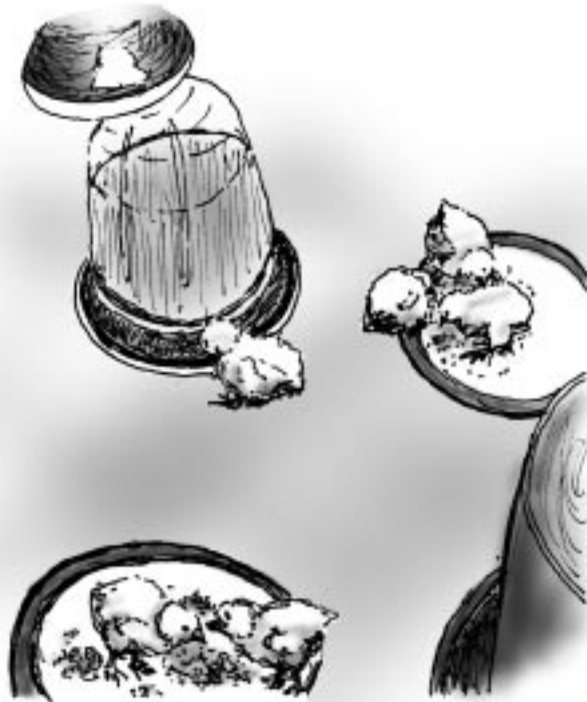
	LOW	LOW-MEDIUM	MED-HIGH	HIGH	YOUR SCORE
Commercial Flock	Reputable company with history of excellent flock health and genetics; stock vaccinated.	Reputable company with history of excellent flock health and genetics; stock unvaccinated.	Purchased from commercial flock with unknown record; stock unvaccinated.	Purchased from commercial flock with poor history of controlling health problems; stock unvaccinated.	<input type="radio"/> Low <input type="radio"/> Low-Med <input type="radio"/> Med-High <input type="radio"/> High
Local source	Purchased from local breeder with good flock health history; stock vaccinated.			Local breeder with questionable flock health history or known outbreaks of disease.	<input type="radio"/> Low <input type="radio"/> High
Self-raised	Eggs from healthy hens, known genetics, eggs clean during incubation or hatched by hen.			Dirty eggs from unhealthy hens with unknown or poor genetics.	<input type="radio"/> Low <input type="radio"/> High

Part 3—Feed and Water

Once healthy chicks are obtained for your flock, you want to keep them that way. Young animals of any sort are more sensitive when exposed to poor quality food and water. Therefore, providing safe food and water is the basis for maintaining a healthy flock until time for harvest.

Feed should be a balanced mixture compounded from freshly processed grains. Fresh means you have had the feed for no more than 3 months. If mold or a rancid odor is noticed, the feed is unsuitable for your flock, and should be discarded. Be sure to check feed labels for added medications and if present, use the food in accordance with the labeled directions. Withdrawal times must be observed if the poultry (or any other product) is to be free from the medication. When needed, it is recommended that adding medications to the water is a better choice than using medicated feed. Withdrawal of medicated water is far easier than attempting to remove scattered feed. Under no conditions should medicated poultry feed be given to another species. For more information about nutritional requirements (including vitamins and minerals), see *Poultry Nutrition for Small Flocks*, (which you can print from the K-State Research and Extension publication Web site: <http://www.oznet.ksu.edu/library/lvstk2/welcome.htm#poultry>).

Water can introduce disease into the flock. The water source is safest if supplied by a public or municipal water supply. If a farm well is used, it



should be properly constructed so that it is not subject to contamination, and it should be tested quarterly for both nitrate and coliform bacteria. If coliform bacteria are found, the well should be sanitized and re-tested. Failure to obtain coliform-free water, indicates the need to evaluate construction of the well and water distribution, and may eventually require the use of a disinfection unit. More information is available about well construction, sanitizing, and testing in Chapter 4, Safe Water Management. Observe these cautions about providing water:

- Never use water that is cloudy or rusty in color.
- Keep equipment clean; sanitize before each new batch of chicks (see Chapter 7, Packaging and Transportation, Page 7-2 for use of sanitizing solutions).
- Provide fresh water each day; check later for refill—especially in hot weather.
- Modern “nipple” type drinkers reduce labor and decrease the risk of spreading disease.

Assessment 3—Feed and Water

	LOW RISK	LOW-MED	MED-HIGH	HIGH	YOUR RISK
Feed source¹	Feed includes a balanced mixed ration from fresh or stored grain in good condition.	Feed includes fresh or stored grain in good condition.	Feed includes any available grain, without regard to balancing the ration or grain quality.	Moldy or other out-of-condition grains fed, inadequate diet for healthy birds.	<input type="radio"/> Low <input type="radio"/> Low-Med <input type="radio"/> Med-High <input type="radio"/> High
Feed storage	Feed stored in mouse/rat-proof containers, kept clean and relatively insect-free. Used within 1 month.	Feed has been stored on farm 1-3 months before use.	Feed has been stored on farm more than 3 months before use.	Feed may be several years old, stored in the open; rodent droppings evident.	<input type="radio"/> Low <input type="radio"/> Low-Med <input type="radio"/> Med-High <input type="radio"/> High
Water source	Water is from municipal water supply.	Water is from a properly constructed & recently tested farm well with no coliform bacteria found.	Water from properly constructed, but untested farm well.	Water from farm well with known pollutants, or from surface water without treatment.	<input type="radio"/> Low <input type="radio"/> Low-Med <input type="radio"/> Med-High <input type="radio"/> High
Water presentation	Water containers sanitized between batches of chicks, and cleaned periodically. Fresh water supplied daily.	Containers cleaned between batches of chicks. Fresh water every 1 or 2 days.	Containers may be rinsed but not cleaned between batches. Fresh water only when they run out - may be 3 days or more.	Containers not clean. Water not fresh.	<input type="radio"/> Low <input type="radio"/> Low-Med <input type="radio"/> Med-High <input type="radio"/> High
Medications	No medications used or only medications recommended by veterinarian used when needed; withdrawal periods followed closely.	Medications or medicated feed used routinely, withdrawal periods followed closely.	Feed is medicated. Sometimes remember to follow withdrawal period.	Not sure if feed is medicated. Not aware if there is a withdrawal period, or have never taken birds off medicated feed prior to slaughter.	<input type="radio"/> Low <input type="radio"/> Low-Med <input type="radio"/> Med-High <input type="radio"/> High

¹ Note: Certified organic broilers and laying hens must be fed 100% certified organic grains in addition to the management practices listed in this question. The feed ration may also not contain any animal by-products or manures, or medications. Some ethnic groups do not allow feed rations to include animal by-products, e.g. "Halal" meat. If selling to these markets, please be aware of dietary restrictions. The questions in this guide deal primarily with food safety issues related to short-term transfer of pathogenic organisms from food animal to human. Long-term issues such as antibiotic resistance are not dealt with here.

Part 4—Processing Set-up and Procedures

Cleanliness and food safety can be improved before processing begins. Begin with cleaned and sanitized utensils and work surfaces. Easily cleanable, non-corrodible surfaces like stainless steel are

best. Plan ahead to keep the processing area clean during use.

Birds raised in clean surroundings carry less dirt into the processing area; therefore, the effort to clean pens daily carries over to processing.

Withdrawal of feed the evening before processing is very important. This allows digestion to be completed so that no feed matter remains in the bird's digestive system. Be sure to remove anything edible from the pen (including old litter) so that the birds do not ingest other things when the feed is withdrawn. The goal is for the birds' digestive systems to be as empty as possible.

Divide the work area into four areas: killing, picking and eviscerating, final rinse, and chilling. The first two steps should be separated from the last two to avoid carryover of contaminants, or cross-contamination. Each step should be progressively cleaner, so that the birds being chilled are the cleanest. See K-State Research and Extension bulletin EP-71, *Processing Farm-raised Poultry*, for complete instructions.

Assessment 4—Processing Set-up and Procedures

	LOW	LOW-MED	MED-HIGH	HIGH	YOUR SCORE
Work area	All surfaces are washed and sanitized prior to use. Are kept clean throughout process. Stainless steel or clean/new plastic surface.	Surfaces washed with soap and water but not sanitized (with household bleach, for example).	Wood or other hard to clean surface used. Area rinsed with fresh water.	Work area subject to dust or other contaminants, not cleaned or sanitized before use.	<input type="radio"/> Low <input type="radio"/> Low-Med <input type="radio"/> Med-High <input type="radio"/> High
Utensils	Knives and other utensils are sanitized and sharpened frequently.			Soiled knives and other utensils used.	<input type="radio"/> Low <input type="radio"/> High
Scalding	Water is from safe drinking water supply, is heated to at least 140°F, and is changed frequently.	Water is from untested water supply, is heated to boiling before use, and is changed frequently.	Water is from untested water supply, is heated to at least 180°F, and is changed frequently.	Water is not from safe drinking water supply, is not maintained at 140°F, and is never changed.	<input type="radio"/> Low <input type="radio"/> Low-Med <input type="radio"/> Med-High <input type="radio"/> High
Worker training and technique	Workers use safe procedures ¹ , hands are washed with soap & disposable gloves are used; no cloth towels used.	Workers use safe procedures ¹ , hands are washed with soap; no cloth towels used.		Workers hands are not washed, cloth towels in use; intestinal material contaminates outside of carcass.	<input type="radio"/> Low <input type="radio"/> Low-Med <input type="radio"/> High
Chilling tank water source and temperature	Water & ice is from public drinking water; is 33° F (icy slush) for chilling cleaned broilers.	Water & ice is from public drinking water source; is ≤40° F & a layer of floating ice for chilling cleaned broilers.	Water & ice is from tested home well; is ≥40° F & includes some ice for chilling cleaned broilers.	Water is not from safe drinking water supply; no ice present in chill bath.	<input type="radio"/> Low <input type="radio"/> Low-Med <input type="radio"/> Med-High <input type="radio"/> High
Holding time & temperature	Chilled broilers held between 33–40° F for >4 hours or until delivery	Chilled broilers held between 33–40° F for 2–4 hours or until delivery.	Chilled broilers held between 40–45° F for 2–4 hours or until delivery.	Chilled broilers held above 45° F until delivery.	<input type="radio"/> Low <input type="radio"/> Low-Med <input type="radio"/> Med-High <input type="radio"/> High

¹Safe procedures: Remove entrails without puncture, keep entrails separate from carcass, or only remove leg and breast meat without removing entrails. Examine organs (intestine, heart, liver) for deformities, lesions, off-color and discard un-healthy birds.

When cutting up the carcass, sharp utensils, used with care, make the job much easier and faster. After the carcass has been eviscerated and washed, it must be chilled as rapidly as possible. **The target temperature for the carcass is 40°F or less within one hour.** Measure temperature with a probe type, dial thermometer inserted in the thigh. These thermometers are usually less than \$10.00, and are found in the cooking supply section in most discount or hardware stores.



When the carcass temperature has dropped to below 40°F, it is a good practice to hold the broilers for a period of time at temperatures as close to 33°F as possible. This allows for rigor mortis to occur and produces tender meat. A good way to safely achieve this is to layer the carcasses with ice in an insulated cooler for the holding time.

Ice water slush is a very good way to rapid chill, and keeping the slush bath in an insulated container (like a large cooler) helps to hold the cold temperature longer. Putting warm carcasses into the slush bath will melt the ice, so it is necessary to keep additional ice on hand that can be added to keep ice in the bath. In addition, there should be enough slush so that each carcass can move freely in the bath. Avoid crowding the slush bath. If larger numbers of birds are being processed, plan to have several slush baths to accomplish a rapid chill.

This holding time should be 2–4 hours minimum, with 6 hours being preferable.

A simple way to monitor the carcass temperature is to insert the probe thermometer in the thigh of the last bird placed in the slush bath. Leave it there. Check the temperature frequently, adding ice to the slush bath as needed so that ice is always present in the water. If there are more than 10 birds being chilled, plan to use a sanitized utensil to “stir” the water to help keep the temperature uniformly cold. All carcasses should reach 40°F within one hour after killing.

The food contact surfaces like utensils, table tops, cutting boards, etc. should be smooth and impervious. After cleaning to remove visible soil and debris, sanitizing these surfaces is important to control bacterial growth. A simple, effective sanitizing solution is one tablespoon of household bleach to a gallon of clean tepid water. Because the solution loses strength, it should be made up fresh every hour during use. This solution can be used as the final rinse in utensil washing, and also for final wipe-down of large surfaces. Allow sanitized surfaces to air dry.

Plan to kill and process birds in small batches if you are working alone, or with a small labor force. Only kill the number of birds that you can scald, pluck and eviscerate within 15 to 30 minutes. An eviscerated (guttled) carcass will cool more quickly and thoroughly than a carcass that has not been eviscerated.

Part 5—Delivery and Storage

It is a good practice to individually bag each broiler. Not only does this keep the food from contamination, but it allows the birds to freeze faster and also to thaw more evenly for use. In any event, storage temperature of processed birds must never exceed 40°F.

Assessment 5—Delivery and Storage

	LOW RISK	LOW-MED	MED-HIGH	HIGH	YOUR SCORE
Containers	New plastic bags are used for each broiler; labeling complete.	Broilers are placed into clean, sterilized ice chests; labeling complete.	Broilers are placed into clean but not sterilized ice chests; labeling complete.	Broilers are placed into bags or ice chests that may not be clean; labeling absent.	<input type="radio"/> Low <input type="radio"/> Low-Med <input type="radio"/> Med-High <input type="radio"/> High
Storage	Broilers are chilled (below 40° F) and delivered or picked up or frozen immediately.	Broilers are chilled and picked up or frozen within 24 hours.	Broilers are chilled and are picked up or delivered more than 24 hours after processing.	Broilers are not chilled immediately or kept chilled until pick-up or delivery.	<input type="radio"/> Low <input type="radio"/> Low-Med <input type="radio"/> Med-High <input type="radio"/> High

Part 6—Disposal of Waste

Processing poultry produces a large amount of wastewater and a lesser amount of solid waste. The amount of waste increases in direct proportion to the increased number of birds being processed. It is a good idea to consider options for handling the waste in the future if you anticipate a larger production.

The best disposal is to a municipal collection system. Wastewater cannot be legally discharged to ponds, streams, or the ground surface. The wastewater from poultry processing will be high in organic matter as well as bacteria, and its discharge to anything other than a treatment system is environ-

mentally irresponsible. Wastewater from smaller production runs may be put into a residential septic system, but be aware that the system was not designed for this type of use and may prematurely fail. Residential waste stabilization ponds (lagoons) may have capacity to treat the wastewater if the pond level is usually at least three feet from the top of the dikes. The use of a holding tank may be an option.

Solid wastes (feathers, heads, feet, and viscera) may be composted successfully if the amount is small and recommended guidelines are followed. Check the resource list at the end of this chapter for extension bulletins covering composting.

Assessment 6—Disposal of Waste

	LOW RISK	LOW-MED	MED-HIGH	HIGH	YOUR SCORE
Waste water	Wastewater disposed of through municipal sewer system or home septic system without surfacing.		Wastewater goes to septic system, but may ooze to surface; local animals have access to the water.	Wastewater discharges to ground surface or into pond or stream.	<input type="radio"/> Low <input type="radio"/> Med-High <input type="radio"/> High
Heads, feet, feathers, and viscera	Waste products incinerated or rendered -or- buried more than 12 inches deep, (only where local water table is deep)- OR- is properly composted. No animal access.	Waste products buried in shallow pit or composted; animal access is prevented	Waste products buried in shallow pit or composted, but animals have access and may dig them up.	Waste products left in pile to decompose. Odor and animal access a problem. Waste products enter a local water body or stream.	<input type="radio"/> Low <input type="radio"/> Low-Med <input type="radio"/> Med-High <input type="radio"/> High

Part 7—Eggs

Egg quality is best at the moment the egg is laid. Quality deteriorates with time, but the rate of decline can be slowed by some simple safety practices. Eggs should be collected at least daily and cleaned with warm soapy water, then immediately placed under refrigeration at 40°F. Hands should be washed before handling eggs and clean containers should be used to collect eggs.

Nesting boxes should be kept clean, especially from fecal matter. Fecal matter is the usual source of Salmonella contamination, not the egg itself. Any eggs left under a broody hen should be dated with a pencil to ensure that these eggs are not consumed. The lowest risk packing container is one that has not been used before. If egg cartons are reused, they must be clean with no egg debris or soil, and relabeled in accordance with Kansas law. Labeling must obliterate the grade, the company name, the USDA seal, and the "K" number (a Kansas permit number). The label must say, "Keep Refrigerated" or

something similar. If you want to sell the eggs as graded, you must be in full compliance with Kansas law, and you should contact the Kansas Department of Agriculture at (785) 862-6574. In order to sell to commercial establishments such as a restaurant or grocery store, eggs must be graded. Eggs sold directly to the consumer do not have to be graded.



Assessment 7—Eggs

	LOW RISK	LOW-MEDIUM RISK	MEDIUM-HIGH RISK	HIGH RISK	YOUR SCORE
Gathering Eggs	Eggs are gathered once or twice a day. Hands are clean and nests are clean.	Eggs are gathered once daily. Nests are generally clean.	Eggs gathered daily most of the time but not always. Nests are not clean.	Eggs are not gathered daily. Nests not clean. Eggs found in clusters around farm without knowing when they were laid.	<input type="radio"/> Low <input type="radio"/> Low-Med <input type="radio"/> Med-High <input type="radio"/> High
Initial container	Baskets or cartons are clean.			Baskets or cartons have dust, manure, or other soil on them.	<input type="radio"/> Low <input type="radio"/> High
Cleaning eggs	Eggs are clean to start with or are brushed clean, hands washed.	Eggs washed with warm soapy water if not clean, hands washed.	Eggs are cleaned by wiping with damp cloth, hands washed.	Eggs not washed even if soiled or hands not washed before handling eggs.	<input type="radio"/> Low <input type="radio"/> Low-Med <input type="radio"/> Med-High <input type="radio"/> High
Final container	Containers are new with complete labeling.	Containers are recycled, but are clean and properly labeled.	Containers recycled, and may have been stored in barn or garage.	Containers not clean; labels absent or inaccurate.	<input type="radio"/> Low <input type="radio"/> Low-Med <input type="radio"/> Med-High <input type="radio"/> High
Storage & sale	Eggs stored in refrigerator at 40°F once gathered, and sold within one week.	Eggs refrigerated at 45°F, but not sold within one week.	Eggs not refrigerated continuously. Date of sale not noted.	Eggs not refrigerated.	<input type="radio"/> Low <input type="radio"/> Low-Med <input type="radio"/> Med-High <input type="radio"/> High

ACTION CHECKLIST

When you finish the assessment tables, go back over the questions to ensure that every high and medium-high risk you identified is recorded in the checklist below. For each risk, write down the improvements you plan to make. Use recommendations from this chapter and from resources elsewhere. Pick a target date that will keep you on schedule for making the changes. You do not have to do everything at once, but try to eliminate the most serious risks as soon as you can. Often it helps to start with inexpensive actions.

Action Checklist: Production of Eggs and Home-Raised, Home-Butchered Broilers and Turkeys

Write all high and medium-high risks below.	What can you do to reduce the risk?	Set a target date for action.
<i>Sample:</i> Water containers are slimy.	Scrub containers until clean; plan to clean and sanitize thoroughly each Monday.	Begin today.

K-State Research and Extension bulletins available from your county Extension office:

Packing Eggs on the Farm for Direct Sales, MF2307.

Processing Farm-Raised Poultry, EP-71.

Resource Guide for Owners of Small Poultry Flocks, MF2306.

Poultry Nutrition for Small Flocks, (electronic only).

Management of the Small Flock of Chickens, MF2390.

Preventing Hens from Eating Eggs, EEP69.

Cannibalism in the Small Poultry Flock, MF2336.

Eliminating Mites in Poultry Flocks, MF2387.

Prevention and Control of Poultry Diseases, L754.

Controlling House Mice, MF1123.

Controlling Rats, AF-43 Revised (this publication may be out of print).

Organic Certification, MF-2344.

Websites:

<http://www.ext.vt.edu/pubs/poultry/442-037/442-037.html> *Composting Dead Poultry* is an extension bulletin covering composting of poultry.

<http://muextension.missouri.edu/xplor/agguides/poultry/index.htm> is a listing of various poultry related publications from University of Missouri; several discuss composting.

<http://www.agnr.umd.edu/CES/PUBS/html/fs723/fs723.html> *Composting Catastrophic Event: Poultry Mortalities* is an extension bulletin covering composting of poultry.

Organization websites:

Kansas State University Poultry

http://www.oznet.ksu.edu/pr_poultry

American Egg Board <http://www.aeg.org>

Kansas Poultry Association

<http://www.kansaseggs.org>

U.S. Poultry & Egg Association

<http://www.poultryegg.org/>

National Chicken Council

<http://www.eatchicken.com>

USDA Foodborne Illness Education Information Center

<http://warp.nal.usda.gov/fnic/foodborne/statemen.html>

Other Resources:

Kansas Department of Agriculture regulates production of poultry and eggs. Call the Meat and Poultry Inspection program (785) 296-5313, and for egg information call (785) 862-6574.

Food*A*Syst Helps Ensure Your Safety

This *Food*A*Syst* handbook covers a variety of topics to help you examine and address your most important food safety and environmental concerns. For more information about topics covered in *Food*A*Syst*, or for information about laws and regulations specific to your area, contact your local environmental health department or county K-State Research and Extension office.

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