

Indiana State Poultry Association

POULTRY INFORMATION BOOKLET

THIS BOOKLET CONTAINS:

- ☉ **Test Your Knowledge Poultry Quiz (inside Front Cover)**
- ☉ **Poultry Terms Quick Reference Guide (Pg. 1)**
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This Booklet is designed to be a quick resource for raising poultry. For additional information go to www.INpoultry.com

**INDIANA STATE POULTRY ASSOCIATION
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TEST YOUR KNOWLEDGE POULTRY QUIZ

THINK YOU KNOW POULTRY?

ANSWER THESE TEN QUESTIONS FOR A CHANCE TO WIN A PRIZE.

ALL ANSWERS CAN BE FOUND THROUGHOUT THIS BOOKLET.

1. If chicks move away from the heat source in their brooding area and appear to be drowsy, then the temperature is most likely too _____ .
2. What might be the cause of a misshapen egg?
 - a. Immature shell gland
 - b. Disease
 - c. Stress
 - d. Overcrowding
 - e. All of the above
3. Chicken breeds with _____ ear lobes lay white eggs while chicken breeds with _____ ear lobes lay brown eggs.
4. Anyone can get sick from farm animals, but what groups of people are more likely to have a serious illness?
 - a. Children younger than 5 years of age
 - b. Adults 65 years of age or older
 - c. Pregnant women
 - d. People with illnesses that weaken their immune system
 - e. All of the above
5. All poultry not purchased or hatched from a National Poultry Improvement Plan certified flock or hatchery within a year must be blood tested for _____ disease before exhibition.
6. At what temperature range should eggs be stored? _____ degrees Fahrenheit
7. As the egg ages, evaporation takes place and the air cell becomes larger. Therefore, the quality of the egg is _____ on the Egg Quality Index.
8. _____ is key to protecting your birds from disease.
9. TRUE or FALSE: It is okay for people with their own birds to come into contact with your flock.
10. Report sick birds to the _____ by calling 1-800-536-7593.

To check your answers visit the Indiana State Poultry Association's website at **www.INpoultry.com/poultryquiz!**

Complete the quiz online and enter your contact information for a chance to win a poultry themed prize pack!

No contact information will be shared with anyone.

We will not use your contact information to send you additional information, unless you request it from us.

POULTRY TERMS QUICK REFERENCE GUIDE

BIRDS ARE CLASSIFIED ACCORDING TO CLASS, BREED, VARIETY, SEX AND AGE.

GENERAL POULTRY TERMS:

BREED – Each breed has a distinct shape and temperament of its own

BROODING – The process of caring for newly hatched chicks

CLASS – This refers to the origin of the bird as part of the classification system. Example: American Class –

Rhode Island Reds, Plymouth Rocks, and New Hampshires

EXHIBITION BIRDS – Birds raised based on aesthetics, not on production capability

FINISH – Completion of growth, ideal weight, ideal size, and perfection of plumage

POULTRY – Any kind of domesticated bird

PRODUCTION BIRDS – Birds solely raised on production capability

SEX – Either female or male

SYMMETRY – Perfection of proportion of shape in all sections of the fowl

VARIETY – Feather pattern, feather color and comb determine the variety of a bird within a breed.

Example: White Leghorn and Brown Leghorn are separate varieties due to the difference in their feather pattern

STRUCTURE / BODY PARTS:

AXIAL FEATHERS (KEY FEATHER) - Short feather between primary and secondary feathers of the wing

COVERTS - Feathers that cover primary and secondary wing and tail feathers

FLUFF - Soft downy feathers located at the base of the shaft: Soft downy feathers on lower thighs and abdomen

HACKLE FEATHERS (CAPE FEATHERS) - Neck plumage: Males exhibit thin and pointed feathers;

Females exhibit thick and rounded feathers

HOCK – Joint between the thigh and shank

PARTI-COLORED – Fowl having feathers of 2 or more colors or shades of color. Example: Barred Plymouth Rock

PRIMARY FEATHERS - Longer wing feathers growing from the outer section (completely hidden when wing is folded under)

QUILL - Hollow shaft of where feather is attached to the body

SADDLE FEATHERS - Long and pointed back plumage of back at the base of tail feathers. Prominent on male fowl

SECONDARY FEATHERS - Longer wing feathers growing from middle section

(Exposed when the wing is folded under)

SHAFT - Extension of quill through the entire length of feather

SHANK – The portion of fowl's leg below the hock

SICKLE FEATHERS - Long tail feathers of male fowl

SPUR - Hard projectile on inner side of shanks

WATTLE - Thin growths of red colored flesh on the sides of the upper throat on fowl. More pronounced on mature males

CHICKEN TERMS:

BABY CHICK – Chick just hatched usually 1 to 7 days old

BROILER or FRYER – A young meat bird chicken of either sex butchered around 4-8 weeks of age

CAPON – A castrated male chicken with soft skin or tender flesh

COCK (OLD ROOSTER) – A mature male over 12 months of age

COCKEREL – A male chicken under 12 months of age

HEN – A mature female chicken over 12 months of age

PULLET – A female chicken under 12 months of age

ROASTER – A young chicken of either sex usually butchered after 8 weeks of age

WATERFOWL TERMS:

BEAN - A hardened bean-like bulge on the upper portion of the bill

DRAKE – A male duck

DUCK – A female duck

DUCKLING – A young duck

GANDER – A male goose

GOOSE – A female goose

GOSLING – A young goose

SCOOP BILL - Depression located at the top of the bill

TURKEY TERMS:

HEN – A female turkey

POULT – A young turkey before its sex can be determined

TOM – A male turkey

FOR MORE INFORMATION VISIT:

www.inpoultry.com/raising-your-birds

www.aphis.usda.gov/animalhealthdefendtheflock

GETTING STARTED WITH A HOME POULTRY FLOCK

Adapted from Purdue University Cooperative Extension Service Flyer AS-568-W

Introduction

The desire to begin raising poultry must be carefully considered before the first purchase. As the husbandry person, you will need to become acquainted with a variety of potential issues before the first purchase. First you should investigate and determine if there are any zone, community, or local restrictions limiting the size of flock or prohibiting you from having birds. In addition and while you are visiting the building commissioner, ask about restrictions and/or permits to construct a pen for these birds. Once this is done, you will need to decide on what type of birds you really prefer; e.g. birds for meat consumption, layer hens, 4-H showing hens, or a combination. Regardless of choice, the decision should be made up front, because purchasing the wrong type(s) of birds can be costly, and you will be obligated to care for something you didn't really intend to have.

Housing of Birds

Depending on what type of bird(s) you are interested in purchasing, you will need to prepare a shelter. In preparing a shelter, you should give consideration to the location on your property and potential threat of predators, i.e., raccoons, coyotes, cats, and dogs. It may require, depending on your location, that some of the fencing wire size is small enough to prevent other critters, i.e. minks, weasels, etc., along the outside edge to access the birds.

Lastly, you will want to give some consideration to proximity to the house before construction begins, because you may decide to run electricity and/or water to the facility, which will be nice when you need light, heat, and water. You will want to choose a location which drains well, because birds move a lot during the day following a rain whereupon they will make a tremendous mess.

As for bird space, home flocks are given space at approximately 3' by 3' per bird, so if you want 20 birds, you will need 180 square feet of floor space which is equal to a 10' x 18' pen. In general, flocks experience some level of death loss, and in the example above you might try over stocking by 10 to 15 percent, i.e., two to three more additional birds beyond the 20 because through death loss, you will achieve the desired ratio of birds to floor space.

As mentioned, you will have death losses, so you will need to give consideration on how you want to dispose of the bird(s). For a better understanding of bird disposal within the state of Indiana, visit the Indiana Board of Animal Health, <http://www.in.gov/boah>.

As for temperature, birds (four weeks of age or older) are best suited for 70°F, and like humans, they can endure a wide range of temperatures. In Indiana, there are two

very important times to really watch birds: extreme winter and extreme summer. During extreme conditions, i.e., below freezing, birds will begin to shunt blood away from extremities, especially the comb and toes. If this occurs, you will see those areas become blue/black and eventually fall off due to frost bite. Conversely, during extreme heat, above 90°F it becomes important to monitor available cooling areas (mist or shade). Drinking water should be less than 80°F. When the water temperature rises above 80°F, birds tend to refuse drinking water.

As mentioned, the location should be well drained. Depending on how you construct the pen, a good absorbent litter may be included. Some of the most common litter choices are pine shavings, rice hulls, or ground corn cobs. Another good choice for bedding materials during the wet season is sand, because it allows for excellent drainage. You should avoid using hardwood shavings, because they potentially provide a good environment for molds.

Placing the Birds

If you are placing newly hatched chicks, it will be important to have the brooding area ready when they arrive (Figure 1); that is, you will want the room temperature around 70 to 75 °F with the temperature at chicks' level to be 95°F during the first week. The area assigned to these chicks should have some flexibility such that they can move through a range of temperatures (95 to 75°F). During this period, it will be important to monitor the birds for signs of stress, for instance, if the chicks are scattered around the area and chirping loudly, chances are they are hot; conversely, if you notice the chicks all huddled together in one area, they are likely cold (Figure 2). At the end of Week 1, begin dropping the temperature by 5 degrees F per week until you reach 70°F, and then try to maintain that temperature.

Figure 1: Brooding area temperature is important.

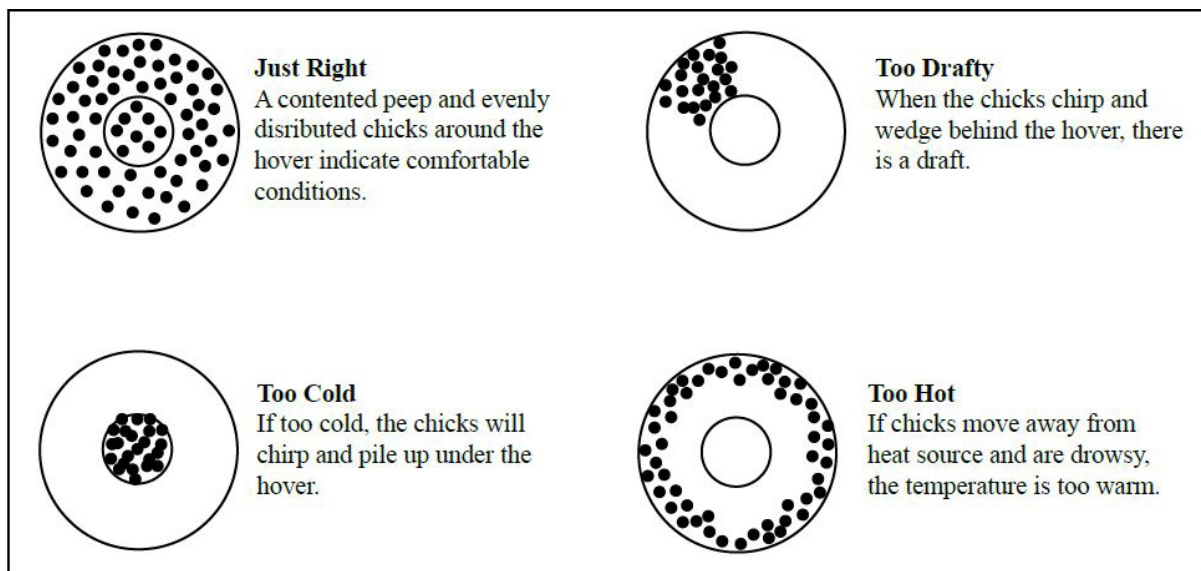
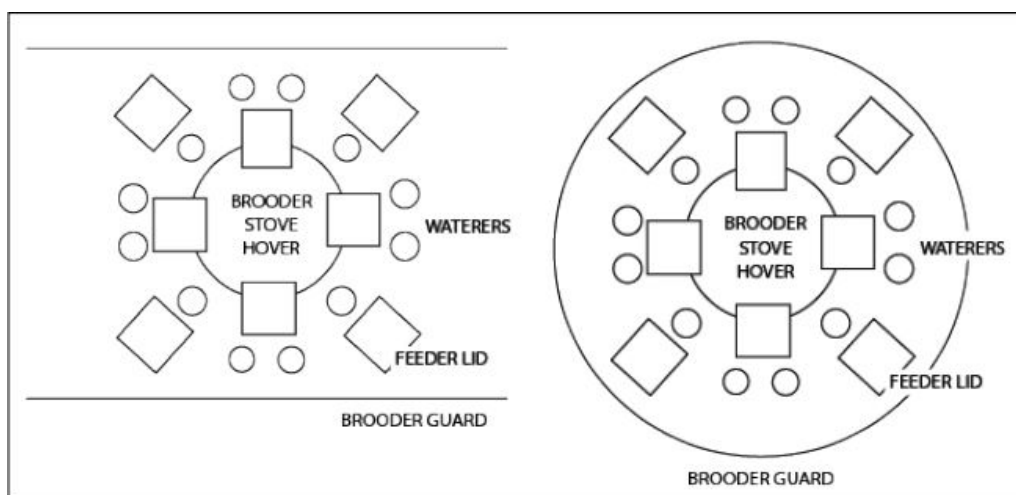


Figure 2: Monitor brooding area for signs of stress.



Water

The most neglected and overlooked nutrient is water. In many cases, humans walk by what appears to be a bowl of “clean water;” but in fact, it may contain millions of bacteria. In turn, the bacteria will stress the digestive system of the bird, such that it will not grow at the rate believed to be their potential. As a good practice, the water bowl or dispenser for birds should be cleaned and monitored on a routine basis. In addition, the actual bowl and other items should be cleaned routinely (weekly or sooner) with a product like chlorine to reduce the incidence of microbial formation. Fresh water needs to be supplied every day to ensure healthy birds. As mentioned in the Placing Birds section, there are critical times in which the care provider must monitor water, extreme cold, and extreme heat. Obviously, during the cold periods, the biggest concern will be freezing. Many farm supply stores sell heaters specifically designed to keep water from freezing, so this might be needed during an extremely cold period. Likewise, during the extreme heat, you will want to monitor water temperature and make sure there is an ample supply of “fresh cool” drinking water. As mentioned above, birds may refuse to drink when the water temperature is above 80 °F. In addition, during the periods of extreme heat, there is an increased risk of microbial growth.

Feed

For the average homeowner or individual showing birds or rearing layers for egg production, there is a wide range of high quality feeds available from many different sources. There are some general factors an individual should keep in mind when selecting a feed: A) make sure it is the correct feed for the application; for instance, don’t choose a meat type ration when you are wanting layers to lay eggs. B) Be sure to look over the ingredients, so that it meets your requirements; that is, if you want a ration free of meat and bone meal, then just look at the ingredient list across brands. Perhaps the biggest challenge an individual will face is “deciding on which brand” to purchase.

*Written by Dr. Mickey A. Latour and Dr. Todd J. Applegate,
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COMMON EGG SHELL QUALITY PROBLEMS



BLOOD STAINED EGGS

Smears of blood are more common on eggs from pullets in early lay. These eggs become contaminated by blood from a prolapsed cloaco, cannibalism or vent pecking.

CAUSES:

- Pullets are overweight or coming into lay
- Poor gut health
- Poor hygiene in cage



BROKEN & MENDED EGGS

In this case, a diagonal break occurs during formation and is mended again before lay.

CAUSES:

- Stress during calcification



CALCIUM DEPOSITS

White color, irregular shaped spots deposited on the external surface of the shell.

CAUSES:

- Defective shell gland
- Disturbances during calcification
- Poor nutrition, e.g. excess calcium



CORRUGATED EGGS

These eggs are characterized by a very rough surface. Produced when there is an inability to control plumping.

CAUSES:

- Inherited
- Excessive use of antibiotics
- Excess calcium consumption
- copper deficiency

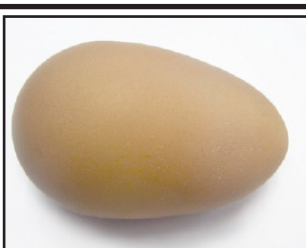


DIRTY EGGS

All or part of the egg shell is stained by feces. Feed ingredients which can cause wet and sticky droppings should be avoided.

CAUSES:

- Wet-droppings
- High indigestible compound
- Poor gut health
- Electrolyte imbalance/saline water



MISSHAPEN EGGS

Differs from the normal shape and size is too small or large.

CAUSES:

- Immature shell gland
- Stress
- Over-crowding



SOFT-SHELLED EGGS

Eggs that are laid with an incomplete shell. A thin layer of calcium is deposited on shell membrane.

CAUSES:

- Excess phosphorus consumption
- Heat stress
- Bird age: higher incidence in older hens
- saline water
- Mycotoxins



WHITE BANDED EGGS

The result of two eggs coming into contact with each other in the shell gland pouch. Normal calcification is interrupted and the first egg in the pouch will have an extra layer of calcium, seen as the white band marking.

CAUSES:

- Stress
- Change in lighting
- Disease

www.inpoultry.com/eggshellqualityproblems

for more common egg shell quality problems



Information adapted from a poster created by Alltech.

Visit www.alltech.com/animal-nutrition/poultry/articles for more information.

CHOOSING A CHICKEN BREED: EGGS, MEAT, OR EXHIBITION

Adapted from Purdue University Cooperative Extension Service Flyer AS-518-W

There are many reasons for raising chickens. People raise chickens for eggs, meat, exhibition, and rare breed preservation, as well as for the enjoyment of raising, caring for, and watching their interesting behavior. Some people raise them to hear a rooster crow to symbolize past days on the farm. There is a wide array of chicken breeds. Choosing the right type of chicken can be difficult. The purpose of this publication is to help beginners determine which types of chickens are most suited to their needs.

EGG PRODUCTION. White Leghorns (pronounced leggers) are prolific layers of white eggs. Golden Comets and Red Sex Links are excellent layers of brown eggs. In general, chicken breeds with white ear lobes lay white eggs, whereas chickens with red ear lobes lay brown eggs.

EGGS AND MEAT. Dual purpose breeds include several American and English breeds such as Plymouth Rocks, Sussex, and Wyandottes. These breeds lay reasonably well and are large enough for meat production.

MEAT. For meat production only, nothing compares with the fast growth of Cornish Cross (White Cornish x White Plymouth Rock). They reach 4-5 lbs in 6 weeks and 6-10 lbs in 8-12 weeks.

EXHIBITION. Exhibition poultry shows are popular in Indiana and the Midwest. The American Poultry Association (APA) publishes, *The American Standard of Perfection*. This illustrated book gives a complete description of all recognized breeds and varieties of domestic poultry. Chickens are judged according to those descriptions of ideal breed type, color, weight, and other characteristics for the particular breed and variety. Bantams, in most cases, outnumber large fowl at poultry shows. Bantams are 1/4 or less the size of large fowl. They are easier for young 4-H members to handle, eat less feed and take up less space than large fowl. Although smaller, their eggs are just as good to eat as large chicken eggs.

Some of the most popular exhibition bantam breeds are Old English Game, Co-chins, Plymouth Rocks, and Wyandottes. Some of the most popular large fowl breeds in the showroom are Rhode Island Reds, Plymouth Rocks, Black Australorps, and Leghorns. A tremendous variety of other breeds is also available. They vary in type, size, color, shape, comb type and other attributes. Exhibition large fowl breeds are divided into classes generally based on their origin.

American breeds were developed for dual purpose use on farms. These include the Plymouth Rock, Rhode Island Red, New Hampshire, Wyandotte, and others. Asiatic breeds are characterized by their massive size and feathered feet. They include the

Brahma, Cochin, and Langshan. English breeds are characterized by their dual purpose use and white skin. They include Orpington, Sussex, Australorp, and Cornish. Continental breeds are characterized by their European origins, active flighty dispositions, and ornamental characteristics. These include the crested Polish, colorful Hamburgs, and bearded Faverolles. Mediterranean breeds are characterized by their active flighty dispositions, laying of white eggs, nonbroodiness, and flying expertise. Examples are Leghorn, Ancona, and Minorca. The remainders of breeds are included in the Any Other Standard Breed (AOSB) class. These include the long-tailed Sumatra and Phoenix, as well as the blue egg layers, the Araucana and Ameraucana.

Backyard chicken raising can be a satisfying hobby, whether raising birds for eggs, meat or exhibition. By knowing which types of chickens to raise for particular needs, you can save time, money, and increase your enjoyment of raising poultry.

Written by Doug Akers, Pete Akers, and Dr. Mickey A. Latour

AMERICAN CLASS		
Breeds: Varieties	Egg Color	Characteristics and Uses
Dominique	Brown	First American breed; not common
Plymouth Rock: barred, white, buff, silver penciled, partridge, Columbian, blue	Brown	Typically docile; fairly good dual-purpose breed; whites and barred are popular exhibition varieties at shows
Wyandotte: silver-laced, golden-laced, white, black, buff, partridge, silver penciled, Columbian, blue	Brown	Typically docile; whites and silver-laced are most common exhibition varieties; popular at shows; good dual-purpose breed
Rhode Island Red: single-comb, rose-comb	Brown	Also popular in exhibition; production-bred strains lay very well
Jersey Giant: black, white, blue	Brown	Massive body; largest breed of chicken; can be used for meat
New Hampshire	Brown	Developed from Rhode Island Reds; bred for quick maturing and proficient laying

ASIATIC CLASS		
Breeds: Varieties	Egg Color	Characteristics and Uses
Brahma: light, dark, buff	Brown	Large-bodied bird; feathered legs; docile; slow-maturing; can be used for meat
Cochin: buff, partridge, white, black, silver-laced, golden-laced, blue, brown, barred	Brown	Large body; feathered legs; very profuse, soft feathering; docile; round body shape
Langshan: black, white, blue	Brown, often dark	Very tall stance; long legs and tail with characteristic Ushaped backline

ENGLISH CLASS

Breeds: Varieties	Egg Color	Characteristics and Uses
Dorking: white, silver-gray, colored, red	White	Very ancient breed; 5 toes; short legs give a "dumpy" appearance
Cornish: dark, white, white-laced red, buff	Brown	Very broad, meaty body; crossed with White Rocks to make hybrid meat birds
Orpington: buff, black, white, blue	Brown	Big-bodied; decent egg-layer; somewhat common in exhibition
Sussex: speckled, red, light	Brown	Old breed; good dual-purpose breed; speckled is most common variety
Australorp: black	Brown	Derived from Black Orpington; bred for egg-laying; very proficient layer

MEDITERRANEAN CLASS

Breeds: Varieties	Egg Color	Characteristics and Uses
Leghorn: SC dark brown, light brown, white, buff, black, silver, red, black-tailed red, Columbian, golden duckwing, RC dark brown, light brown, white, buff, black, silver	White	Very good layer of white eggs; production strains for commercial egg industry; popular for exhibition; whites and light browns are most common; typically flighty
Minorca: SC black, white, buff, RC black, white	White	Largest Mediterranean breed; good layers
Andalusian: blue	White	Original blue-colored fowl; good layers
Ancona: single-comb, rose-comb	White	Plumage is black with white tips; good layers;

CONTINENTAL CLASS

Breeds: Varieties	Egg Color	Characteristics and Uses
Hamburg: golden-spangled, silver-spangled, golden-penciled, silver-penciled, white, black	White	Old breed; somewhat active and flighty; silver-spangled and blacks are bred to high state of perfection; originated in Holland
Welsummer	Very dark brown	Primary use is a layer of chocolate brown eggs; becoming more common; Dutch breed
Lakenvelder	White or tinted	Breed has white body and contrasting black head, neck and tail
Polish: non-bearded white-crested black, golden, silver, white, buff-laced, white-crested blue, black-crested white; Bearded golden, silver, white, buff-laced	White	Ancient breed; primary use is exhibition; large crest at top of the head; varieties have muffs and a beard; many unique colors, most prevalent being white-crested blacks and buff-laced
Houdan: mottled, white	White	Old breed originating in France; 5 toes and crest with muffs and a beard; rare
Faverolle: salmon, white	White or tinted	Typically bred for exhibition, but also dual-purpose; 5 toes; French

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WWW.INPOULTRY.COM/CLASSROOMBTS

VISIT THE ABOVE WEBSITE FOR MORE INFO



Stay Healthy When Working with Farm Animals:

Follow these simple tips to help prevent illness when working with farm animals

Working with farm animals can be a rewarding and meaningful experience for children. Caring for and showing these animals are great ways for children to learn about agricultural sciences and personal responsibility. However many farm animals, including cattle, goats, sheep, swine, and poultry, can carry germs such as *Salmonella* or *E. coli* that can make people sick. Luckily, there are simple steps that you can take to help prevent illness.

How do people get sick from farm animals?

Animals can carry germs even when they appear healthy and clean. The germs are shed in animals' feces (poop) and can easily contaminate their bodies (fur or feathers) and anything in areas where these animals live and roam. People can become ill by touching farm animals or the areas where the animals live and roam.

Who is at most risk?

Anyone can get sick from farm animals, but some people are more likely to have a serious illness:

- Children younger than 5 years of age
- Adults 65 years of age or older
- Pregnant women
- People with some illnesses (like cancer) that weaken immune systems



Follow these simple tips to help prevent illness:

- Wash your hands thoroughly with soap and water right after touching farm animals or anything in the areas where they live and roam. Washing hands with soap and water is the best way to reduce the number of germs on them.
 - If soap and water are not available, use an alcohol-based hand sanitizer that contains at least 60% alcohol.
- Supervise children younger than 5 years of age if they handle or touch farm animals or animal areas and equipment. Young kids should avoid certain animals that are more likely to spread germs, including poultry, pre-weaned calves, young goats and sheep, and any ill animals.
- Keep your food and drinks away from farm animals and out of animal areas.
- Keep animals away from areas where food or drink is prepared, stored, or consumed, including kitchens and outdoor patios.
- Have a set of dedicated shoes or boots, gloves, coveralls, or other work clothes that you use just for working in animal areas. Remove them as soon as possible after leaving animal areas.
- Clean gloves and work clothes regularly.
- Clean and disinfect work shoes, boots, and equipment regularly.

To learn more, visit <http://www.cdc.gov/Features/AnimalExhibits/>



United States
Department of
Agriculture



EXHIBITION POULTRY

Exhibiting poultry is a year-round commitment. Here are some helpful suggestions for raising healthy and competitive exhibition birds while practicing proper biosecurity.

Maintaining an Exhibition Flock

Exhibition poultry are judged based on breed aesthetic standards. This is not to be confused with commercial poultry that are judged based on meat and/or egg production capability.

Exhibition birds may be raised in enclosed coops or individual cages. The pen should remain clean and free of parasites. Frequently check birds for lice or mites. Ridding birds of these parasites is less difficult if they are caught early. If you do encounter parasites, immediately separate the infected bird(s). Treat all birds multiple times to ensure that they are parasite-free. **NEVER transport an infected bird to a poultry show or swap meet.** Monitor the food intake of your flock. Decreased appetite can be a signal for birds being overheated or in general compromised health. Going through excessive amounts of food may be a sign of rodent or wild bird infestation.

Selecting from the Flock

Select birds for exhibition about one month before the show. When selecting exhibition birds for show, reference the standard for that breed. The Standard of Perfection is produced by the American Poultry Association and contains descriptions about the characteristics of each breed of chicken, waterfowl and turkey. Exclude any bird that possesses disqualifications as described by the standard. During judging, a uniform scale of points is used to rank birds. This scale is based upon bird's symmetry, condition, body size, and other qualities such as comb, beak, legs and toes. Select birds that exhibit the best combination of these characteristics.



Washing Birds

Wash all birds at least 3 days before the show and separate from the rest of the flock. To prepare the baths, fill buckets with warm water. Use flea and tick shampoo in the first bucket to rid birds of any parasites that may have not been killed by the dust baths and to remove dirt from feathers and skin. Harsh chemicals such as Malathion are not recommended because over-exposure may cause illness for birds and be potentially hazardous to the person washing the bird. A second bucket is often used to rid the bird of any suds that have not been rinsed. Feather conditioner or glycerin in the third bucket will add shine to the feathers. When washing, gently lower the bird into the water and allow the feathers to soak in each bucket for at least a minute. Always keep the bird's head above water. Pat birds dry with a clean towel and allow the birds to dry in a clean pen.



Testing Requirements

All poultry not purchased or hatched from a National Poultry Improvement Plan (NPIP) certified flock or hatchery within a year must be blood tested for Pullorum-Typhoid (PT) Disease before exhibition. Documentation of this test is required before birds are checked-in. The

documentation may be provided through a VS 9-2 form or a County Exhibition Form, signed by a certified NPIP blood-tester.

All Indiana counties are encouraged to have at least one PT certified blood tester. Please call or e-mail ISPA for the name and contact information of the nearest certified blood tester. If you are interested in becoming a certified PT blood tester, ISPA offers two blood testing schools during April in addition to an online re-certification course. For more information about Blood Testing School please visit the link: www.inpoultry.com/classroombts

Transporting to the Show

To prevent impairment of conditioning, exhibitors must be careful that feathers, combs, and waddles are not damaged during transportation. Using proper cages will reduce the risk of broken feathers. To avoid the potential spread of disease, do not borrow cages from other poultry owners. Metal cages can be disinfected more thoroughly and are suggested over wood cages. Birds feel more comfortable on a solid floor, so try to avoid cages with wire floors. This will also prevent damage to toes. Always provide fresh bedding during transport. Since birds cannot be washed once they reach the show, it is important to keep them clean during transportation.



During the Show

In most poultry shows, it is the exhibitor's responsibility to care for his or her birds. Ensure that the birds are kept in clean and comfortable conditions. Poultry shows will often allow exhibitors to provide their own cage if a bird is clearly too cramped for its assigned cage. Clean pens are the responsibility of every poultry exhibitor. Replace bedding daily for all birds. Waterfowl may demand extra clean-up than chickens. They also require enough water to be able to clean their bills.

Monitor the weather conditions during the show. Excess heat is often a problem during 4-H poultry shows. Frozen water bottles may provide relief for overheated birds. Birds will not drink warm or dirty water; therefore it is crucial to provide fresh water daily for the birds. If birds appear to be in distress during the show because of excess heat or stress, it may be best to take them home.



After the Show

In order to practice good biosecurity, it is vital to keep the returning birds separate from the remaining flock. Physically separating the birds will ensure that the rest of the flock will not be infected if the exhibition birds have contracted a disease. Allow these birds 3-4 weeks before re-introducing them into the flock. When caring for the separate flocks, visit the original birds before caring for the returning birds to prevent potential diseases or parasites to be spread via clothing or supplies.

PROPER HANDLING OF EGGS: FROM HEN TO CONSUMPTION

Adapted from Virginia Cooperative Extension Service Flyer 2902-1091

To insure egg quality in small flocks, egg producers must learn to properly handle the eggs they produce. This article will discuss how you can insure that your eggs will be of the highest quality and safe for consumption.

Layer House Management

The condition of the egg that you collect is directly related to how well the flock is managed. Feeding a well-balanced ration, supplementing calcium with oyster shell, water, flock age and health all can affect egg quality. However, since these factors are covered in other publications, this fact sheet will place emphasis on egg quality and handling after it is laid.

Coop and Nest Management

Keep the laying flock in a fenced area so they cannot hide their eggs or nest anywhere they choose. If hens are allowed to nest wherever they choose, you will not know how old eggs are or with what they have been in contact, if you can find them at all.

Keeping the layers environment clean and dry will help keep your eggs clean. A muddy outside run, dirty or damp litter and dirty nesting material will result in dirty, stained eggs. Clean-out the nest boxes and add deep clean litter at least every two weeks. Clean-out wet litter in coop and make sure the outside run area has good drainage and is not over grazed.

Supply a minimum of four nesting boxes for flocks containing 15 hens or less. For larger flocks provide one (1) nest for every 4 to 5 hens in the flock. This will help limit egg breakage from normal traffic and daily egg laying. Make sure nests have a deep clean layer of litter to prevent breakage and help absorb waste or broken-egg material.

Collect Eggs Early and Often

Most flocks will lay a majority of their eggs by 10:00 am. It is best to collect the eggs as soon as possible after they are laid. The longer the egg is allowed to stay in the nest, the more likely the egg will get dirty, broken or will lose interior quality.

Collecting eggs at least twice daily is advisable, especially during extreme weather temperatures.

Other Considerations for Layer House Management

Rotate range areas often or allow enough area for birds in outside runs to prevent large dirt and mud areas from forming by over grazing.

Prevent eggs from being broken in order to minimize a hen learning to eat an egg and developing egg eating habits.

Free choice oyster shells will help strengthen the eggshells.

Keep rats, predators and snakes away from the hen house. They often will eat eggs and contaminate the nesting boxes and other eggs.

Proper Egg Cleaning and Handling

Collect eggs in an easy to clean container like coated wire baskets or plastic egg flats. This will prevent stains from rusted metal and contamination from other materials which

are difficult to clean and disinfect.

Do not stack eggs too high. If collecting in baskets do not stack eggs more than 5 layers deep. If using plastic flats do not stack more than 6 flats. If you stack eggs too deep you will increase breakage.

Never cool eggs rapidly before they are cleaned. The eggshell will contract and pull any dirt or bacteria on the surface deep into the pores when cooled. Try to keep the temperature relatively constant until they are washed.

Wash eggs as soon as you collect them. This helps limit the opportunity of contamination and loss of interior quality.

Wash eggs with water 10 degrees warmer than the egg. This will make the egg contents swell and push the dirt away from the pores of the egg. If you have extremely dirty eggs, a mild detergent approved for washing eggs can be used. Never let eggs sit in water. Once the temperature equalizes the egg can absorb contaminants out of the water.

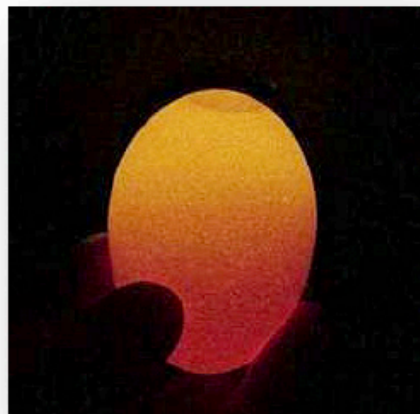
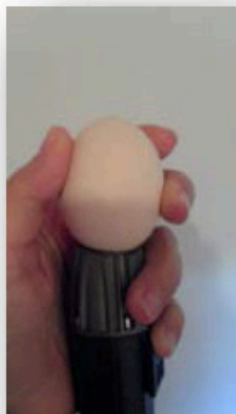
Cool and dry eggs quickly after washing. Store eggs, large end up, at 50-55°F and at 75%relative humidity. If eggs sit at room temperature (75°F) they can drop as much as one grade per day. If fertile eggs are kept at a temperature above 85°F for more than a few hours the germinal disc (embryo) can start to develop. If fertile eggs are kept above 85°F over two days the blood vessels of the embryo may become visible. If eggs are stored properly in their own carton or other stable environment they should hold a quality of Grade A for at least four weeks.

Sorting and Grading Eggs

It is best that you sort the eggs before you store, sell, or consume them. The easiest way to sort eggs is to candle them with a bright light. This process can help you eliminate cracked eggs or eggs with foreign matter inside like blood spots.

How to Candle Eggs

Candling lights are commercially available, but candling can be done with less specialized equipment. A high intensity flashlight can be used with practice (a modern LED flashlight may be a good choice, since light output can be adequate and the light produces little heat). Working in a darkened room for optimal results, hold the egg up to the candling light in a slanting position. You will see the air cell, the yolk and the white; the air cell is almost always in the large end of the egg. Put the large end next to the candling light. Hold the egg between your thumb and first two fingers. By turning your wrist quickly, you can cause the inside of the egg to whirl. This will tell you a great deal about the yolk and white. When you are learning to candle, you will find it helpful to break and observe any eggs you are in doubt about.



Identifying Cracks

Cracked eggs will appear to have a white line somewhere on the shell. These cracks will open if you apply slight pressure to the shell. Remove cracked eggs and consume them as soon as possible or discard.

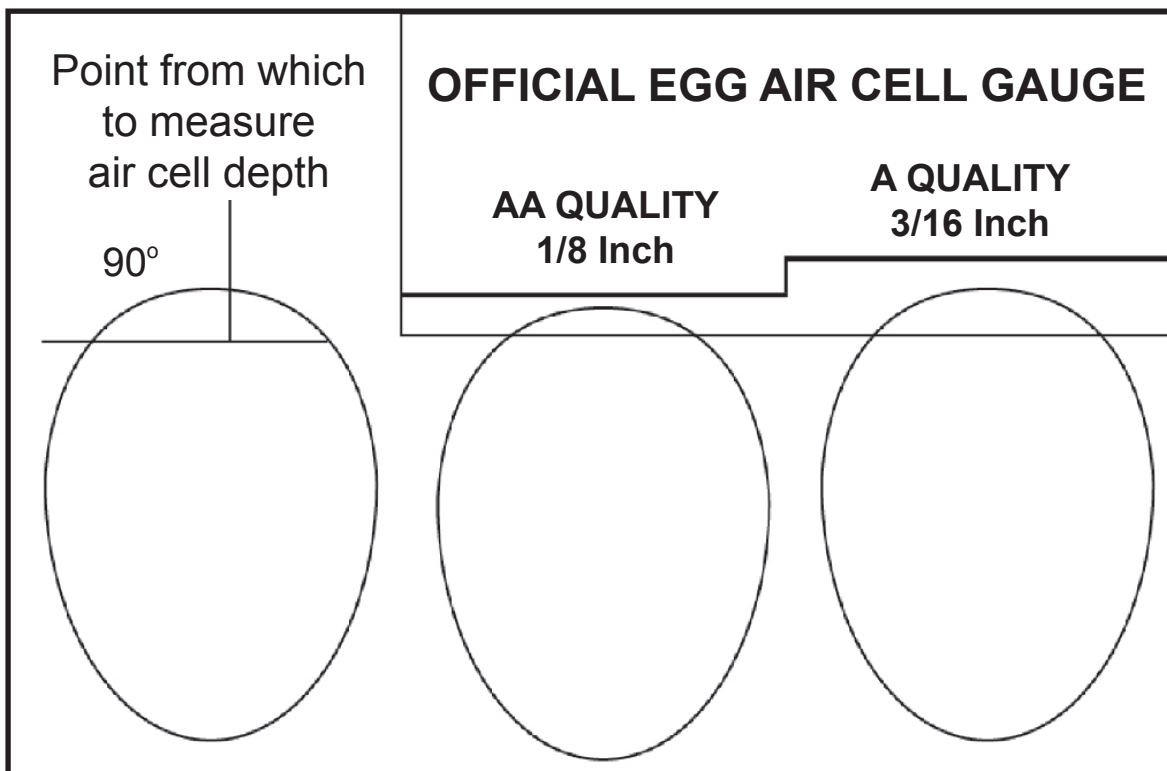
USDA Grade Standard

Use the specifications given in the table below to determine the grade of an egg by candling. Consider air cell depth, yolk outline, and albumen quality.

QUALITY FACTOR	AA QUALITY	A QUALITY	B QUALITY	INEDIBLE
Air Cell	1/8 inch or less in depth	3/16 inch or less in depth	More than 3/16 inch	Doesn't apply
White	Clear, Firm	Clean, May be reasonably firm	Clean, May be weak and watery	Doesn't apply
Yolk	Outline slightly defined	Outline may be fairly well-defined	Outline clearly visible	Doesn't apply
Spots (blood or meat)	None	None	Blood or meat spots aggregating not more than 1/8" in diameter	Blood or meat spots aggregating more than 1/8" in diameter

Air Cell Depth

The depth of the air cell is the distance from its top to its bottom when the egg is held with the air cell up (see diagram below). In a fresh egg, the air cell is small, not more than 1/8 inch deep. As the egg ages, evaporation takes place and the air cell becomes larger and the egg is downgraded.



Yolk

The yolk of a fresh, high quality egg will be surrounded by a rather dense layer of albumen or white. Therefore, it moves only slightly away from the center of the egg when it is twirled before the candler. Because of this, yolk outline is only slightly defined in the highest quality eggs. As the albumen thins, the yolk tends to move more freely and closer to the shell. A more visible yolk when candled indicates a lower quality egg.

White or Albumen

The character and condition of the white or albumen is indicated largely by the behavior of the yolk of the egg when the egg is candled. If the yolk retains its position in the center when the egg is twirled, the white is usually firm and thick.

Eggs with blood or meat spots more than 1/8-inch in diameter are classified as inedible. Eggs with small spots collectively less than 1/8 inch in diameter should be classified as Grade B. The chalaza is distinguished from a meat spot by a bright area of refracted light that accompanies its darker shadow. Blood spot eggs can be consumed without harm, however, most people find the appearance undesirable.

Also remove any eggs with unusual shell shapes, textures, ridges or thin spots on the shell if you plan to sell the eggs. These eggs are edible but break easily and are undesirable to most consumers due to appearance.

Storage of Eggs

Store eggs small end down in an egg carton to keep the air cell stable. Date carton so you can use or sell the oldest eggs first and rotate your extra eggs. Try to use or sell all eggs before they are three weeks old. Store eggs in a refrigerator with an ambient temperature of $\leq 45^{\circ}\text{F}$ and 70-85% humidity. Place a thermometer in the refrigerator to track the temperature of your fridge. Never hold eggs at or above room temperature or at low humidity longer than necessary. Leaving eggs in a warm, dry environment will cause quality to drop quickly. Never store eggs with materials that have an odor. Eggs will pick up the odors of apples, fish, onions, potatoes and other food or chemicals with distinct odors.

Package (carton) labels

If the eggs are packaged to be sold at a food establishment, they must meet food labeling laws and regulations. To be in compliance, your eggs should be labeled with the following information in English, using at least a 1/4-inch font size:

1. Packer identification (the person or entity placing the eggs in the retail container), must be clearly stated using one of the following identifiers:

- a. Name and address of packer.
- b. Indiana state egg license number, for example, IN-000.
- c. United States Department of Agriculture plant number, for example, P-000.
- d. Egg license number from another state, provided the number is on file in writing at the state egg board office.
- e. United States Department of Agriculture Shell Egg Surveillance number, including state code and handler code, for example, 18-0000. Note: The Shell Egg Surveillance registrant number contains a state code, county code, and handler code. Do not include the county code, only state and handler number.

2. Grade and size (Grades include AA, A or B; Size includes Jumbo, Extra Large, Large, Medium, Small, or Pee Wee)

3. Date the eggs were packaged. May be listed as month and day or consecutive day of the year, As an example: Feb 01 or 032

4. Expiration date, which is 15 days from the date of pack for Grade AA and 45 days from the date of pack for Grade A, preceded by the letters EXP or one of the following: Sell BY, Best BY, or Use BY. (Example: EXP March 3 or EXP 3-3)

5. The following label must appear on each carton. The words “**safe handling instructions**” must appear in bold capital letters and the statement must be set off in a box with borders.

SAFE HANDLING INSTRUCTIONS: To prevent illness from bacteria: keep eggs refrigerated, cook eggs until yolks are firm and cook foods containing eggs thoroughly.

Sale of Eggs

There are no laws which prevent the sale of eggs from a home laying flock. However, you should take some basic steps to ensure that the eggs you sale have uniform quality. Be sure to follow the suggestions about collection, washing, storage, and sorting above. For marketing it is best to size the eggs. Egg sizes are expressed in ounces per dozen. Egg scales can be purchased at many farm supply stores.

Small - 18oz • Medium - 21oz • Large - 24oz • X-Large - 27oz • Jumbo - 30oz

Never sell eggs in cartons with another egg producer or store name on the carton. It is illegal to do so. Only sell eggs in generic cartons.

Most small flock producers base their prices on the current store prices in the area they live. However, many producers niche market their eggs as a specialty item and receive premium prices. If you have your birds in a fenced outside run and have one male for every 10-15 hens in your flock, you can sell eggs at a premium as fertile, free range eggs. Brown eggs often will bring higher prices as well.

Remember, prices will also be driven by supply and demand. If you do not have a lot of competition and have a good demand you usually can get a higher price for the eggs you sell. It is critical that you pay attention to quality and keep a constant year round supply for your customers. Be prepared to replace any eggs that are not satisfactory to a customer. Learn about and correct the dissatisfaction.

What Is the Proper Way to Cook and Handle Eggs Foods?

Consumers should always keep eggs refrigerated until the eggs are used. Eggs should not be eaten raw. Pasteurized eggs should be used in recipes that call for raw eggs which are not going to be cooked (i.e. eggnog, ice cream, etc.) Eggs should not be combined and left to stand at room temperature before cooking for more than 20 minutes. Eggs should be individually cracked and immediately cooked. The USDA recommends that hot food be kept above 140°F and cold foods be kept below 40°F.

*Written by Phillip J. Clauer & reviewed by Audrey McElroy
(Virginia Tech-Animal & Poultry Sciences)*

*Indiana egg carton labeling guidelines provided by the Indiana Egg Board:
<https://ag.purdue.edu/ansc/iseb/>*

USING GOOD BIOSECURITY AGAINST THE THREAT OF AVIAN INFLUENZA

Adapted from U.S. Dept of Agriculture APHIS Flyer: APHIS 91-55-099

As part of its safeguarding mission, the U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS) protects the health of our Nation's livestock and poultry. They respond to major animal disease events, helping to keep dangerous diseases from spreading.

Avian influenza is a viral disease that can infect wild birds (such as ducks, gulls, and shorebirds) and domestic poultry (such as chickens, turkeys, ducks, and geese). There is a flu for birds just as there is for people and some forms of the flu are worse than others. Highly pathogenic avian influenza (HPAI) can spread fast and quickly kill chickens and turkeys. Wild birds, however, can carry HPAI viruses without appearing sick.

The United States experienced a significant outbreak of HPAI in 2014–2015, affecting 21 States and leading to the destruction of almost 50 million birds. We must all do everything we can to prevent future outbreaks.

BIOSECURITY IS KEY, anyone who owns or works with poultry - whether on a commercial farm, in the wild, or at a hobby/backyard farm—should take proper steps to keep HPAI from entering their flocks. The best way to protect your birds is to follow good biosecurity. Even if you are already familiar with biosecurity, it is always good to double-check your practices.

Backyard poultry owners can follow six simple steps for biosecurity. Make them part of your routine to lower the risk that disease will enter your flock and spread via soil, droppings, and debris.

1.) KEEP YOUR DISTANCE

Restrict access to your property and your birds. Consider fencing off the area where your birds are to form a barrier between “clean” and “dirty” areas. The clean area is the immediate area completely surrounding your birds. The dirty (or “buffer”) area is the immediate adjacent area—consider this area to be infected with bacteria and viruses, even if your birds appear healthy and disease-free.

Create distance and use barriers to prevent contact between your birds and wild birds. Wild birds, especially ducks and geese, should not have contact with your flock because they can carry disease causing viruses and bacteria. If your birds are outdoors, try to keep them in a screened coop. Also, protect your birds' food and water from wild birds or any other wild animals that could bring disease to them.

Allow only people who take care of your birds to come into contact with them. If visitors want to see your birds, be sure they wash up first and clean their shoes. Better yet, keep clean boots or shoe covers for them to wear. If your visitors have birds of their own, do not let them enter your bird area or have access to your birds at all.

2.) KEEP IT CLEAN

Bacteria and viruses can be picked up on shoes and clothing and moved from one place to another. Since this can make your birds sick, you need to protect their home by keeping it clean. To keep your birds “disease-free,” have a pair of shoes and a set of clothes to wear only around your birds. Clean and disinfect your shoes and launder your clothes before you check on or work with your birds. Scrubbing your shoes with a long-handled scrub brush and disinfectant will remove droppings, mud, or debris. Wash your clothes with laundry detergent. Wash your hands thoroughly with soap and water before entering your bird area.

Keep cages clean and change food and water daily. Clean and disinfect equipment that comes in contact with your birds or their droppings. All manure must be removed before disinfectant can work, so clean surfaces with soap and water first.

3.) DO NOT HAUL DISEASE HOME

Car and truck tires, poultry cages, and equipment can all harbor organisms that cause disease. If you travel to a place where other birds are present be sure to clean and disinfect these items before you return to your property.

Taking some of your birds to a fair or exhibition? Keep those birds separated from the rest of your flock and watch them for at least 3 weeks after the event to make sure they did not pick up a disease. New birds should be kept separate from your flock for at least 30 days before putting them with the rest of your birds. To prevent disease, it is best not to mix young and old birds or birds from different species or different sources.

4.) DO NOT BORROW DISEASE FROM YOUR NEIGHBOR

Do not share birds, lawn and garden equipment, tools, or poultry supplies with your neighbors or other bird owners. If you do bring equipment or other items home, clean and disinfect them before they reach your property. Also, remember to clean and disinfect borrowed items before returning them.

5.) KNOW THE WARNING SIGNS OF INFECTIOUS BIRD DISEASES

Early detection is very important to prevent the spread of disease. Here's what to look for:

- Sudden death without any signs
- Lack of energy and appetite
- Decreased egg production
- Soft-shelled or misshapen eggs
- Swelling of the eyelids, comb, wattles, and shanks
- Purple discoloration of the wattles, comb, and legs
- Gasping for air (difficulty breathing)
- Nasal discharge (runny nose)
- Coughing, sneezing
- Twisting of the head and neck (torticollis)
- Stumbling or falling down
- Diarrhea

6.) REPORT SICK BIRDS! CALL USDA TOLL FREE AT 1-866-536-7593

Don't wait. If your birds are sick or dying, contact your local cooperative extension office/agent, your veterinarian, the State veterinarian, or your State animal/poultry diagnostic laboratory. There is no charge for a disease investigation, if one is needed. Early reporting is important to protect the health of your birds.

BACKYARD BIOSECURITY SELF EVALUATION

A poultry flock owner should be able to check off every item on this list!

KEEP YOUR DISTANCE

- ☐ I restrict visitor access to my property and my birds.
- ☐ My bird area is fenced in or has a barrier to keep visitors out.
- ☐ I prevent other bird owners from coming into contact with my birds.
- ☐ My birds are protected from contact with wild game birds and migratory fowl.

KEEP IT CLEAN

- ☐ I properly clean and disinfect equipment that comes into contact with my birds.
- ☐ I change into clean clothes and shoes and wash my hands before entering my birds areas.
- ☐ I clean the cages and change my birds food and water daily.

DO NOT HAUL DISEASE HOME

- ☐ After contact with other birds/bird owners, before returning home, I disinfect my vehicle tires, poultry cages and equipment.
- ☐ Birds that I took to the fair/exhibition are separated from the rest of the flock for at least two weeks after the event.
- ☐ New birds are isolated from my current flock for at least 30 days.

DO NOT BORROW DISEASE FROM YOUR NEIGHBOR

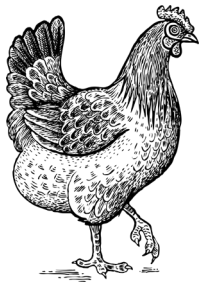
- ☐ I do not share lawn and garden equipment, tools, or poultry supplies with my neighbors. When I borrow equipment from my neighbors, before I bring it onto my property I make sure to properly clean and disinfect the equipment.

KNOW THE WARNING SIGNS OF INFECTIOUS BIRD DISEASE

- ☐ I can identify the warning signs of infectious bird diseases (such as Avian Influenza and Virulent Newcastle Disease). Symptoms can be:
 - Sudden increase in bird deaths in my flock
 - Sneezing, gasping for air, coughing, and nasal discharge
 - Watery and green diarrhea
 - Lack of energy and poor appetite
 - Drop in egg production
 - Swelling around the eyes, neck and head.
 - Purple discoloration of the wattles, combs, and legs (AI)
 - Tremors, dropping wings, circling, twisting of the head and neck, or lack of movement (vND)

REPORT SICK BIRDS BY CALLING 1-866-536-7593

If you suspect that your birds might be showing symptoms of infectious bird disease, please call the above number or reach out to the Indiana State Poultry Association at **1-765-494-8517** or ispa@purdue.edu



INDIANA TEST-TWELVE (T-12) PROGRAM POULTRY FLOCK EVALUATION

One of the primary goals of a flock owner
is to keep their poultry healthy.

The Indiana T-12 Program, created by the Indiana State Poultry Association (ISPA) and its partners, helps to monitor your poultry's health through the submission of a dozen eggs.

And the best part is, this program is
FREE for all Hoosier flock owners.

The ISPA is providing an opportunity for a FREE flock evaluation. The voluntary testing program, referred to as Indiana's T-12 Program, monitors Avian Influenza and other health factors through a simple antibody test from your hens' eggs. The T-12 Test is specifically designed for testing chicken eggs, other poultry species, e.g. duck, may not produce accurate results. Please note, results may aid in assessing the health status of the birds, but should not be used as a diagnostic test. If your birds are sick, consult a veterinarian.

To participate, complete and return the bottom portion of this form or request a FREE Egg Mailing Kit online. Upon receiving the Egg Mailing Kit, collect 12 eggs and return them in the postage paid package. The results of the T-12 Test will be emailed and/or mailed to you! Each T-12 Egg Mailing Kit contains information on common avian diseases, biosecurity flyers and other poultry related materials.

NOTE: As this is a monitoring test only, the results are for the poultry owner's benefit and cannot be used to certify egg quality or as a replacement for poultry health papers. Due to the nature of the T-12 test, the ISPA cannot predict a specific date for the results.

For More Information contact the ISPA by phone: (765) 494-8517
or by email: ispa@purdue.edu.

**To request a postage paid
T-12 Mailer visit:**

**www.INpoultry.com/t12mailer
or send an email to ispa@purdue.edu**

T-12 PROGRAM
MADE POSSIBLE FOR
HOOSIERS BY:



Whether these family-owned farms are large or small scale operations, food safety and animal care are the top priorities of our farmers.

They care about the quality and safety of the products that feed their own families, their local communities, and communities across the country.

Hoosier eggs and poultry products are safe, economical, and wholesome sources of protein.



Today's Turkey - Serve up Something Unexpected!

www.YOURINDIANATURKEYFARMERS.COM

Visit our website for recipe inspiration for every season; learn about turkey farming in Indiana; and so much more.

WANT TO KNOW MORE?

VISIT THESE GREAT RESOURCES FOR MORE INFORMATION:

Purdue University Cooperative Extension Service - www.extension.purdue.edu



Purdue Extension is a service tailored to meet the needs of Indiana. They provide the link between Land Grant Research and Hoosiers. They strive to provide practical solutions to local issues. Purdue Extension offers programs in: Agriculture and Natural Resources; Health and Human Sciences; Economic and Community Development; and 4-H Youth Development.

Defend The Flock Program

www.aphis.usda.gov/animalhealth/defendtheflock



The Defend the Flock education program offers free tools and resources to help everyone who works with or handles poultry follow proper biosecurity practices. They encourage and prepare all poultry owners – including future and aspiring growers – to implement diligent biosecurity practices. Follow them on Facebook for the latest biosecurity information and flock management tips:

www.facebook.com/defendtheflock/

Indiana Animal Disease Diagnostic Laboratory (ADDL) - www.vet.purdue.edu/addl/index.php

The Indiana ADDL provides a wide range of testing

services on all kinds of species. The Avian Section of the ADDL accepts specimens from all species of birds, including poultry, game birds, caged birds, wild birds, and zoo birds. If you need help, contact the ADDL Avian Section 765-494-7454. In southern Indiana, call Heeke ADDL at 812-678-3401.

Indiana State Egg Board

<https://ag.purdue.edu/ansc/iseb/>

The Indiana State Egg Board is charged with regulating the sale and commerce of shell eggs in Indiana. Their staff consists of field personnel that conduct inspections at retail and wholesale locations across the state.

Indiana State Board of Animal Health (BOAH)

<https://www.in.gov/boah/>



BOAH's mission is to enhance Indiana's economy by protecting Hoosiers' investment in animal agriculture, wildlife, horses and companion animals. They protect public health by preventing and controlling the spread of animal diseases, such as rabies, which pose a threat to people. They are a vital link in our safe food supply through state meat, poultry and dairy inspection programs. They help people and their animals who are victims of large scale disasters such as floods and tornadoes.