

# Backyard Poultry are Coming in for an Appointment! Overview of General Care and Husbandry

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Backyard poultry are very popular and they are presenting to veterinarians for basic as well as advanced care. People own chickens for a variety of reasons, either for companionship, to have fresh eggs for their own consumption, or small scale meat and egg production, and the level of care requested varies considerably. Some owners may only want to know what dose of dewormer they should use in their egg laying hen (none are supposed to be used in an egg laying hen by the way), whereas some owners will OK a referral for an MRI (yes, we had a seizing pet turkey that got an MRI). The old adage of “always offer the best care possible” is also true when offering care to owners of backyard poultry, with the understanding that the owner will be quick to let you know how much they are willing to spend. As veterinarians we can also provide educational information to the public at various venues including co-ops, feed stores, chicken shows, etc., and inform owners about salmonellosis risks, the laws and regulations governing a food animal, the importance of vaccinating against Marek’s disease, how to provide proper care, and what signs to look for that may indicate disease. We can also field questions that the public has about avian influenza. The diseases and care of backyard flocks is different than that of commercial broilers, breeders or layers and the following is an overview of how to provide the best care possible to backyard poultry.

## Where to get information?

First and foremost backyard chickens are birds and all of our knowledge of avian medicine can be used in their care including general husbandry and care, handling, approach to medicine and surgery, and anatomy and physiology. Consult an avian textbook for general information on birds. Most information will concentrate on the chicken, although the term backyard poultry also includes turkeys, pheasants, ducks, geese, swans, quail, and other species. There are several websites and books available on the care of backyard poultry.

Examples of websites and books with information on backyard or production poultry

1. Backyardpoultrymag.com
2. Backyardchickens.com
3. CDC’s information sheet on Salmonella, <http://www.cdc.gov/features/salmonellapoultry/>
4. Information on drugs and dosages from FARAD, <http://www.farad.org/vetgram/search.asp>
5. University of Florida Extension, <http://edis.ifas.ufl.edu/an239>
6. University of Minnesota Extension, <http://www1.extension.umn.edu/food/small-farms/livestock/poultry/backyard-chicken-basics/>
7. University of Connecticut Extension, <http://web.uconn.edu/poultry/poultrypages/diseasefactsheet.html>
8. Cooperative extension system, <http://www.extension.org/poultry>
9. Purdue Extension, <http://ag.ansc.purdue.edu/poultry/extension.htm>
10. North Carolina State University Extension, [http://www.ces.ncsu.edu/depts/poulsci/tech\\_manuals/small\\_flock\\_resources.html](http://www.ces.ncsu.edu/depts/poulsci/tech_manuals/small_flock_resources.html)

## Chick and chicken care

### Diet

A chick that is destined to become a laying chicken should be fed the following as they age: 0-6 weeks of age feed chick starter (18-20% protein); 6-14 weeks of age feed chick grower (16-18% protein); 14-20 weeks of age feed developer (14-16% protein); 20-24 weeks of age start layer ration (16-18% protein). Some advocate adding some scratch (dried cut up corn) to the diet so that they do not grow too fast and develop valgus limb or wing deformities. Scratch and fresh greens provide enrichment as well. Always provide clean, fresh drinking water in waterers that are constructed such that the birds cannot roost on them to defecate in the water. Use chick starters rations containing a coccidiostat. Always purchase the best feed you can afford. Perosis, or slipped gastrocnemius tendon is caused by a deficiency of choline, manganese or biotin. Valgus limb deformities can be caused by a manganese deficiency or improper substrate.

### Medications used in chickens

Any questions regarding use of a drug in a chicken or egg laying hen can be answered by viewing the FARAD website and/or contacting them. In general terms, there are drugs that are prohibited, drugs that are considered off-label, and then drugs that are approved for use in some specific instances (certain drug at certain concentration, at certain dose, given to certain poultry at a certain age for a certain duration and frequency), all of which makes it near impossible to develop a formulary for backyard poultry.

## **Space**

Adult chickens need a minimum of about 2-3.5 square feet per chicken. Chicks up to 2 weeks of age need at least 10 square inches per chick. By 4-8 weeks of age they need at least 1 square foot. Crowding or flocks of 4-6 birds can cause stress and lead to cannibalism. Red lights sometimes decrease cannibalism in chicks since apparently it makes the red color of blood or hyperemic tissue less enticing to peck.

## **Temperature**

Chicks initially need 95°F, then decrease by 5°F weekly (usually done by raising heat lamp 3 inches weekly) until reach room temperature. An excellent method to determine if the chicks are at the proper temperature is to observe their behavior. If they are all huddled under the lamp then their environment is too cold. If they are all hanging out at the periphery of the enclosure away from a central heat lamp then their environment is too warm, and if they are scattered about an enclosure with a central heat lamp then the temperature is just right.

An adult chicken is most comfortable and efficient at producing eggs when at 70-75°F. Hot chickens eat less. Chickens may die of heat stress at temperatures over 95°F. Adequate ventilation is absolutely necessary.

## **Bedding and flooring**

Many people use pine shavings or for chicks, then pine shavings, straw, or well-drained soil when older. The flooring of coops can have dirt, wooden slats, concrete, or wire. A variety of products are available. A “chicken tractor” is simply an enclosure that can be moved around a yard over a new substrate (usually grass). These can be very simple structures or very elaborate. A nest for a Leghorn –type chicken can be constructed of wood at 12” wide, 14” high, by 12” deep, with a perch just in front of the entrance. Construct fences and coops strong enough to keep predators, such as raccoons, from getting to the chickens. One of the most common presentations of chickens in private practice is attack by a predator whether it be a dog, raccoon, etc. Sometimes the trauma is from other chickens (cannibalism). When dogs attack chickens there is usually loss of feathers and scratches and/or bite wounds over the dorsum and sides. The chickens usually present in shock. Treatment consists of treating the shock with fluids (usually SC is sufficient), antibiotics to prevent/treat infection, and repair of damaged tissues including debridement of necrotic tissue. Chickens seem to recover well and heal quite severe wounds, so do give them the benefit of the doubt and treat, but do control their pain with either NSAIDs or butorphanol. Various techniques used in other species for wound management can be used in chickens.

## **Pododermatitis**

Ulcerative pododermatitis tends to occur if the chicken is overweight, on a roughened surface, or if one leg and foot bears more of the body weight than the other, or a combination of all these factors. There are varying grades of ulcerative pododermatitis from mild with hyperemia of the skin, to severe with osteomyelitis of underlying bone. A radiograph is the best method to determine if there is underlying osteomyelitis, a condition that requires long term antibiotic therapy and probably debridement of necrotic tissue. Most cases of ulcerative pododermatitis are somewhere in between mild and severe and consist of a thickened area of skin on the plantar surface of the foot usually over the metatarsal pad, but can also be seen on the phalangeal pads. There are differing opinions as to how aggressive to be with debriding the tissue or not – usually if there is necrosis, then debridement is necessary. Soaking the foot will greatly soften the tissue and ease surgery. Surgery should be performed under general anesthesia with administration of a pain reliever such as butorphanol since this is inherently a painful procedure. An aspirate or tissue sample is often needed to culture the area and prescribe the appropriate antibiotics. The substrate should be made as soft as possible and kept clean. Underlying lameness should be corrected. Pain relief should be addressed.

## **Salmonellosis**

There are several organisms responsible for salmonellosis in poultry and people including *S. pullorum* = Pullorum dz, *S. gallinarium* = Fowl Typhoid, *S. typhimurium* = Paratyphoid infection, *S. arizona* = Arizoanosis (turkeys only). In poultry salmonellosis causes lethargy, diarrhea, pasty vent. Salmonella can be normal GI flora in poultry providing a source of infection for humans, but it is significant (and indicate disease) if a salmonella is cultured from anywhere other than intestines in poultry. Salmonellosis is almost eliminated in US commercial flocks. Treatment = antibiotics. See the USDA and CDC handouts on the zoonotic implications of salmonellosis. Veterinarians should educate owners on the risk of salmonellosis in humans from handling poultry. The elderly, those under 5 years of age, and immunosuppressed individuals are most at risk for a fatal infection. There have been deaths recently in young children after handling chicks and ducklings.

## **Coccidiosis**

Coccidiosis is caused by coccidia, protozoan organism. There are many species (9 in chickens, 7 in turkeys at least 4 in quail) and they are host specific and not zoonotic. In other words a chicken cannot infect a turkey and visa versa. A flock may develop resistance to one species only to be infected with another species. Cecal coccidiosis is worse in that it typical causes bloody droppings and is associated with higher mortality, whereas intestinal coccidiosis is typically more chronic in nature and is associated with a lower mortality. The clinical signs of coccidiosis are severe in young (4-16 weeks of age) chickens by having bloody diarrhea, pale combs, lethargy, tendency to huddle, partial anorexia, weight loss, dehydration, and death. The typical clinical signs are diarrhea, unthriftiness, and variable levels of mortality. As chickens get older they become more resistant and show little to no clinical signs, but can act as carriers to later expose young chicks. Transmission is through direct or indirect contact with droppings from infected

birds (fomites, free-flying birds, insects and rodents). The oocysts shed in feces are not immediately infective, they have to first go through a maturation phase (sporulation) which can take as little as 1-3 days in warm, damp litter. The disease is most common in the springtime. Diagnosis is based on a fecal float. There are many species of coccidian with varying areas of the intestine affected and various clinical signs. *Eimeria tenella*, the cecal coccidian, is one of the most common species and is associated with bloody droppings, and shows a typical hemorrhage of the ceca on histopathology. The other species (*E. acervulina* and *E. necatrix*) affect the intestine and are less severe. The key is prevention. Wet litter, poor sanitation, poor nutrition, and concurrent immunosuppressive diseases are the most common triggers of a coccidiosis outbreak. Treatment is with a coccidiostat such as amprolium or sulfamethazine. The best recommendation is to prevent the disease by feeding medicated feed between the ages of 0 and 16 weeks. Commercial broilers don't typically live long enough for this disease to be enough of a problem. There is a coccidia vaccine available for use in 1-3 days old chicks, but it is only useful in certain poultry operations, since it uses live organisms and re-ingestion at 4-25 days is necessary as a booster.

#### **References**

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