Backyard Poultry 101: Basic Husbandry & Management Tips to Share with your Backyard Poultry Clients

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Abstract: This report highlights important aspects of commonly encountered questions and concerns that clients may seek advice about from their veterinarian. Practitioners should have a basic understanding of poultry husbandry and management so they can inform clients on how best to establish and maintain a healthy backyard flock. General information will be shared on how clients should obtain, house, feed, and care for their birds.

Key Words: poultry, backyard, husbandry, physical examination

Basic Husbandry

First Encounters of the Backyard Nature:
Clients with interests in owning small or backyard type poultry are growing in numbers. Especially post-Covid, there was a huge shift to individuals wanting to produce their own food. As with any responsible animal owner, backyard poultry owners have a strong desire to do what is best for their animals. This includes seeking advice on how to best care for and treat them when problems occur.

Unfortunately, very few veterinarians are open to the idea of helping this population in their backyard poultry journey. Lack of exposure in veterinary schools is an underlying concern, however, through CE such as this, veterinarians can arm themselves with at least a general knowledge base about poultry. When a client reaches out for information on how to best establish their backyard flock, here are a few basic key things to share with them at this stage.

Obtaining Poultry for Backyard Facilities:
Where to obtain poultry depends on how many birds a client is interested in having. For those folks that want just a few birds, they could get them from a local feed or farm supply store that usually source their baby birds from larger hatcheries. Always suggest clients ask their local supplier where they get their birds from. If larger numbers of birds are desired, several of the large commercial type primary breeder hatcheries are willing to sell to backyard type poultry producers. Hy-Line and Centurion Poultry are two that are known to source > 600 birds at a time to backyard growers. I never recommend obtaining birds from anywhere other than a larger type hatchery because of vaccination capabilities offered at the larger hatcheries.

It is ideal to obtain birds only from those suppliers that source from large hatcheries that include day of age hatchery vaccination as part of the deal. All chickens for instance are highly susceptible to diseases such as Mareks, thus they must be vaccinated at the hatchery at day of age prior to introduction to a backyard facility. Other vaccines which are available to hatcheries are vectored vaccines such as those on a Mareks vector that also could include New Castle Disease, Infectious Laryngotracheitis, or Infectious Bursal Disease. There is also a vectored fowl pox vaccine available for Infectious Laryngotracheitis.

Other vaccines that can be offered from hatcheries include coccidiosis vaccines, bacterial vaccines such as E. coli, Salmonella, and live respiratory vaccines such as Infectious Bronchitis and New Castle Disease, and live fowl pox virus. Mareks protection in various forms are also available and completely necessary for instance to prevent chickens from succumbing to this disease later in life.

Another huge benefit to only getting birds that are sourced from large hatcheries is that they are strictly monitored for diseases such as Salmonella and Avian Influenza. This helps ensure that birds are healthy from the start and are armed with the proper vaccines required to keep them that way throughout their life. Warn clients that biosecurity is

also key to prevent the introduction of diseases into their flocks. Outside birds from poultry swaps, auctions, sales, or even family, friends or neighbors should be avoided at all costs. Stay tuned for the session on Biosecurity later.

Meeting Housing Needs:
Backyard poultry need the same thing that any outdoor pet may need: shelter, protection, fresh water, nutritionally balanced feed, protection from diseases, and proper veterinary care. Let's start with shelter and protection. Poultry are extremely vulnerable to predators, so it is very important to provide them with some sort of barrier that prevents access to the birds. This includes from above, as hawks, owls, and other predatory birds love to feast on poultry. Even if poultry are free range during the day, they need a protected area at least at night to sleep. Poultry also need shelter from the elements.

Certain breeds are very heat sensitive, so proper shade is required. Chickens especially like to be able to roost in a nest or up high on perches at night, so these should be considered. If clients intend to have birds that will be producing eggs, then they need nest boxes of some sort with clean bedding material in them. The size of the pen depends on the number of birds and type of poultry housed. Birds should be able to freely move in their enclosure and have enough room to perform their innate behaviours such as foraging, scratching, dust bathing, sunning, jumping, wing flapping, and mating. All of these take space and should be considered when setting up a proper backyard poultry coop. For older chickens for example, a maximum of 7-9 birds/m^2 of useable space is required. Feed space should be a minimum of 5cm/bird (with access on both sides); 10 cm/bird (with access on one side); 4 cm/bird with circular feeders. Water access should be a maximum of 10 birds per nipples/cups; circular drinkers: 1 cm/bird; linear drinker: 2.5 cm per bird. As far as perch space, they should plan for 10-15 cm/bird. Nests should allow for 5 birds per nest max.

Floor type can vary depending on the type of "coop" you are using. Some are stationary and can have shavings, while others are mobile, and make use of grass as a bedding source. Either way, floor surfaces need to be gentle enough on the birds' feet to not cause foot pad lesions. It is very common to see various set ups including, stationary coops, outside pasture areas with perimeter fencing, or summer porches or verandas which are enclosed with fencing and a roof. Nets make great overhead protective covers against flying predators. For those interested in raising free range poultry, they typically allow constant access to pasture/range areas, and utilize mobile housing for units with shelter, feed, and water, which are periodically moved to keep the pasture fresh. Electric perimeter fencing is great to keep birds in and varmints out.

Typically, for pasture free range poultry, stocking density is based on pasture type, local regulations, and diet. For example, a 2.5-acre pasture can usually sustain around 2000-2500 chickens if well drained. Pastures should be well drained to avoid puddle formation, as you would not want birds drinking from dirty standing water. Chickens should have around 2.5 ft^2 per bird of pasture space on average. Pasture areas can be used for around 6-8 weeks before they need to be rotated, so proper planning is required. It is very helpful to provide small shelters scattered throughout the pasture, not only to provide shade and protection from rain and wind, but also to make birds feel safer. Trees, shrubs, and homemade structures make great cover and shade sources. Additional shelters other than the primary one will also encourage birds to migrate further away from the primary shelter thus helping to prevent over trampling of vegetation around the main shelter.

Lastly, it is always a good idea to screen the area where birds will be housed for any plants that may be toxic to poultry or those that may lead to off tastes or odors of eggs such as wild onions. A few toxic plants species to look out for are hemlock, monkshood, privet, yew, nightshade, azaleas, beans, bulb variety plants, bracken ferns, foxglove, holly, lobelia, lupine, nightshades, oak trees & acorns, periwinkle, rhubarb, and horseradish.

Starting Baby Poultry
It is critical to inform clients that baby birds cannot regulate their body temperature. Because of this, it is important that they are brooded for the first few weeks of life in a controlled environment. Brooding set up should start prior to the arrival of baby birds. Around 24-72 hours prior to receiving babies, clients should pre-heat a brooding area to around 91-96°F. This can be a closed area of really any sort, a brooder container of some fashion, or a wall-enclosed pen. Heat lamps are commonly used for supplemental heat during brood. Pre-warming may require 24 hours in normal or warm climates, 48 hours in cool climates and 72 hours in cold climates. The facility should be at proper brooding temperature and humidity (95-97°F and 60% humidity measured at bird level) for several hours before the arrival of the birds. Floor temperature should be close to 90°F at the time of chick placement. All drafts should be

eliminated from the brooding area. The heat source should remain for the first few days, but birds should be allowed to move freely in or out of direct heat depending on their temperature needs. Feed and water should be placed out from under direct heat. After the first week, the temperature can be reduced 4-6°F weekly until it reaches around 70°F.

Bright lights (3–5 foot candles) should be provided during 0–7 days to help chicks quickly find feed and water and adapt to their new environment. Use cool lights (3000–5000 K) in the rearing facility to ensure sufficient blue-green light spectrum. Do not use 24 hours of continuous light. Birds need a dark period each day to grow properly. They should receive around 20 hours of light and 4 hours of darkness from 0-7 days. After the first week, birds will likely be at the mercy of natural light, but if clients are interested, they could do a step-down program to best allow for proper photo stimulation in preparation for lay later in life. From 8-14 days, lights should be reduced to 2.5 foot candles for 19 hours a day; from 15-21 days reduced to 17.5 hours; 22-28 days reduced to 16 hours; 29-35 days reduced again to 1-1.5 foot candles for 14.5 hours; then 36-42 days reduced to 13 hours of light a day. When natural daylight is shorter than the desired lighting periods, supplemental lighting on timers should be used. It is critical that shelter lights are always on when birds are returning from pasture because they will not want to return to a dark facility.

The first few weeks of a baby bird's life are critical to ensuring proper development of the digestive and immune systems. Clean drinkers at least weekly to avoid building-up of organic matter that could encourage bacterial growth. Use a ratio of 80 birds/circular drinker (25 cm diameter), or a ratio of one nipple/cup per 12 birds for the first few weeks. Birds should not need to move more than 1 m to find feed or water during this time. Clean fresh water should be provided and placed at the correct height for easy bird access. The water temp should be between 68-77°F. Cold water should not be given to baby birds. Only when birds are fully feathered should they be exposed to pasture or free-ranging conditions.

Older Poultry Considerations:
If control is possible, lighting should continue stepping down to 12 hours of light a day by 6 weeks of age, then to 10 hours a day from 7-17 weeks. Light intensity can remain around 0.5-1.5 foot candles from 4-14 weeks of age but should be increased to 2-2.5 foot candles from 14-16 weeks of age. Starting at 17 weeks of age, switch from cool type lights to warm lights (2700–3500 K) to ensure sufficient red spectrum and increase intensity to 3 foot candles in addition to increasing daily light 30-60 minutes a week until 25 weeks when you should reach a goal of 16 hours of light a day. This photo period of 16 hours of light a day at 3 foot candle intensity should be held throughout the lay period to keep birds in production. Birds will start to go out of production if they sense decreasing day length and will eventually go into a molt situation where they may go completely out of production until day length begins to increase again.

Nutritional Needs
As far as what to provide poultry nutritionally, it is a pretty short list. Clean, fresh water is just as important for backyard poultry as it is for any other animal in their care. Water sources should be changed out and containers cleaned frequently enough to prevent contamination from bacteria and other pathogens from occurring. This could mean daily changes in some circumstances. As far as what to feed backyard poultry, the best advice you can give is the same that you would give for their dog or cat. It is best to feed a commercially available balanced diet specially formulated for the age and type of bird. Just like for their furry friends, treats should only be used at a minimum, so that their commercial feed provides their primary diet. Baby poultry need a "starter" diet that is formulated for their needs during rearing. As birds age, they will need different ration types to help prepare and maintain them for sexual maturity and egg laying.

Starter feed is best in the form of a crumble with minimal levels of fine material (particles less than 1 mm) to support feed intake. These feeds are formulated to be highly palatable and digestible for the baby birds. Grower diets are typically given when birds are growing their fastest between 6 and 12 weeks of age. Sufficient levels of protein, essential amino acids, and minerals are required for muscle growth and skeletal development during this period.

Around 12 weeks of age feed known as developer can be introduced. This diet can be fed up to the pre-lay period. These are usually less dense to encourage feed intake and increase absorption of nutrients. For instance, fiber levels are often higher than the grower diet.

Next is the pre-lay diet. It contains higher levels of calcium and phosphorus to increase medullary bone reserves in birds preparing for egg production. Birds use medullary bone to source minerals for eggshell formation. This diet is typically fed when birds start to show signs of sexual maturity (reddening of combs) for a max of 10-14 days before the onset of lay. This is also the diet to start introducing large particle calcium sources, such as limestone or oyster shell, to help familiarize birds with large particles. Target at least 50% of the limestone to be coarse. Pre-lay diet should be discontinued with the onset of egg production.

Once birds begin to lay eggs, they should be switched to a layer ration. This diet has the correct balance of nutrients required for hens to properly lay eggs. That is, apart from large particle calcium sources. This should be supplemented during the production period to provide layers with a slow, sustained availability of calcium for eggshell formation. Coarse limestone or oyster shell make good supplemental calcium sources.

Considering Eggs for Human Consumption

Many clients start rearing backyard poultry with the intention of being able to consume eggs produced by their birds. It is helpful to warn clients that if they are doing this as a cost-saving method, they will be sadly disappointed. The high cost of feed will more than offset the benefits of "free" eggs. Clients should know the reality of this before they dive in to the backyard egg producing hobby. Having said this, there are a few tips you can offer clients on how to make the most of their eggs. Eggs should be collected daily and stored at ambient room temperature or refrigerated. Eggs should not be washed unless clients have a commercial grade egg washing machine. Wet eggs are a big no no, as adding moisture or allowing them to sweat significantly increases the chance for contamination. Egg shells consist of tiny pores which act as ventilation holes for the embryo during development. These pores allow wicking of moisture and any bacteria that is on the surface of that eggshell to enter the interior components of the egg.

Under proper handling conditions, eggs can last for a while although the albumin tends to get watery with age. Unwashed eggs will last at least two weeks unrefrigerated and three months or more in the refrigerator. Always refrigerate washed eggs, however, because the washing process removes the protective barrier that fresh eggs are laid with. Eggs will maintain a higher quality when stored in the refrigerator – washed or not. However, unwashed fresh eggs will keep the best. Once refrigerated, keep cold eggs in the fridge to avoid sweating.

Poultry Basic Exam & Handling

When a client comes into the clinic with a backyard bird, don't be afraid to say yes. Treat them like you would any other animal. As with any potentially sick animal, treat any bird that comes into the clinic as highly contagious to other feathered friends that may be in the clinic. Biosecurity is essential to prevent the spread of potentially zoonotic and transmissible diseases. Stay tuned for the next session on biosecurity for more tips.

When a bird is brought into your clinic, start with a good physical examination. Start from the beak, comb and wattles and work your way down, carefully feeling and looking as you progress along the body. Note general body condition, keeping in mind the type of bird on the table. For instance, meat type birds tend to carry more body weight than an egg layer breed. Note feather cover and overall thriftiness of the bird. Are they depressed? How is their breathing? Is there any discharge from the face? Is there pasting around the vent area? Exam the skin closely for external parasites closely examining the vent area for fowl mites and under the wings for lice and nits. Look for any wounds or scratches on the skin. Examine the feet for foot pad lesions. For more in-depth discussion around specific diseases to look for and how best to address them, attend subsequent sessions at this meeting.

Treat any wounds like you would any other species. Gas anaesthesia works well for procedures that require more invasive intervention. Keep in mind that there is a very short list of approved drugs for use in food animal species, regardless of whether they are considered as pets. There are also withdrawal times for meat and egg consumption, so treat responsibly. The list of approved products is ever changing, so suggest you consult the Green Book put out by FDA (Animal Drugs @ FDA) for an updated complete list of approved drugs.

General References for Additional Information

1. Approved Animal Drug Products (Green Book) | FDA. https://www.fda.gov/animal-veterinary/products/approved-animal-drug-products-green-book.
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