Backyard Poultry Management for the Veterinary Practitioner

Jessica Walters, DVM, PhD, DACVP
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Outline
- Basics of Poultry Production and Management
- Common Backyard Breeds
- Health and Handling of Backyard Birds
- Biosecurity

Basics of Poultry Production and Management

What’s involved in backyard poultry production?

Managing the environment
Mitigating disease risk
Nutrition
Genetics/Breed

Managing the Environment

Housing
- Varies tremendously!
- Small coops → free range/pasture raised
- Birds prefer some sort of shelter or height to roost

Lights
- Most backyard hens have natural light
- Affects molting/laying times
- Seasonal changes

Protection from predators/weather
- Most often by enclosed coops/runs
- Free-range birds most at risk
- Most common predators: dogs/coyotes, raccoons, snakes, opossums, foxes, birds of prey
- Increase in the use of Livestock Guardian Dogs for poultry protection
Managing the Environment

Manure/Waste
- High in nitrogenous waste
- Ammonia levels in enclosed houses can contribute to respiratory disease by paralysis of the muco-ciliary apparatus.
- Concentrated in coops if enclosed with little air flow—maintenance of good ventilation is necessary.
- Suggested top-dressing with clean shavings in coops weekly.

Mitigating Disease Risk

Vaccination
- Little vaccination done in a backyard setting.
- Marek's vaccine from hatchery highly recommended.

Monitoring
- Regular testing via serum/blood/PCR.
- National Poultry Improvement Plan.

Biosecurity
- "Bio" "Security"—"The series of management steps taken to prevent the introduction of infectious agents into a herd or flock."—Penn State Extension.

Mitigating Disease Risk

Quarantine!
- ALL new birds—Especially different age groups.
- Suggest 21–30 days.
- Ensure proper biosecurity during quarantine.
- Big concern with backyard poultry swaps.
- Common issue with Mycoplasmosis.

Nutrition

Feed
- Commercial complete feed is best—nutritionally balanced.
- Medicated feed often contains a coccidiostat.
- Most often ground or hanging feeders.
- Feed storage in open containers/humid areas can lead to mold/bacterial growth.
- Differing feed for life stages.
- Higher calcium/protein levels for layers.

Additives
- Grit/Calcium.
- B-vitamins.

Water
- Fresh water source.
- Still/open water can be a source of contamination/bacterial growth.
- Vinegar is commonly added as preventative.
- Potential route of medication for a flock basis.
Genetics & Breed

Male ZZ, Female ZW

As in mammals, genetics control phenotypic traits
- Multiple genes responsible
- Recessive and dominant traits

Examples: Comb type, feather color, skin/shank/foot color

Breeding

Chickens
- Able to breed naturally, cloacal kiss

Turkeys
- Some are able to breed naturally, artificial insemination heavily utilized commercially
- Heritage breeds MUST be able to breed naturally

Ducks
- Breed naturally through externalized phallus

Breeding

Chickens: 21 days
Turkeys: 28 days
Ducks: 28-35 days (breed dependent)

Common Backyard Breeds

Egg-Laying Breeds
- Primary purpose: egg production
- Smaller framed, able to lay large quantities of eggs
- White Leghorn - commercial egg production

Meat Breeds
- Primary purpose: meat production
- Bred/Selected for intense breast meat yield, tend to be shorter lived
- Cornish Rock (top), Broiler (Cornish Cross) (bottom)
Dual Purpose Breeds

- Breeds that are good layers, but have a bigger build- making them also ideal as table- meat birds

Australorp
Orpington
Barred Rock
Rhode Island Red
Wyandotte

Specialty Breeds

- Numerous!
- Classified by unique colors, feather patterns
- Often used for showing

Silkie
Bantam
Polish
Silkies

Turkeys

- Variety of Heritage breeds available
  - White Holland
  - Blue Slate
  - Bourbon Red
  - Royal Palm
- Risky to keep with chickens
  - Risk of Blackhead (protozoal disease)

Ducks

- Meat variety: Muscovy
- Dual purpose: Pekin
- Show varieties are numerous
- Generally happy with a water source- very messy!

Health and Handling of Backyard Birds

Handling Poultry

- Stressed out easily
- Likely will be in box or small carrier
- Remove both from box and wings held folded against the body
- Support abdomen
- Make sure if on an exam table that they have a towel to stand on for traction
  - May need to use a towel to restrain smaller species
Anatomical and Physiological Differences

**Integument**
- Feathers, Scales, Beak

**Respiratory**
- Complete tracheal rings, air sacs, non-expansive lungs, no diaphragm

**Gastrointestinal**
- No teeth, crop, gizzard (grinding stomach), cloaca (common outflow), cecal tonsils

**Circulatory**
- Two portal systems (hepatic, renal)

**Hematological**
- nRBCs, no liquefactive enzymes

**Renal**
- Uric acid, no bladder

**Immunological**
- Bursa, no lymph nodes

Reproductive
- Only left side develops, internal system, different parts develop the egg

Musculoskeletal
- Bones adapted for flight, many fused, airsacs extend into some bones

CNS/Special Senses
- Few gyri and sulci, bone in eye, large optic lobes

Common Signs of Illness in Poultry

**Respiratory**
- Sneezing
- "Snick"
- Oculo-nasal discharge
- Swollen sinuses
- Open-mouth breathing
- Harsh sounds
- Head shaking
- "Vulture" stance

**Gastro-Intestinal**
- Loose stools
- "Pasty" vents (white)
- Bloody diarrhea
- Weight loss
- "Vulture" stance

**Neurologic**
- Lameness
- Abnormal head position
- Falling over
- Abnormal gait
- Inability to stand

**Cardiovascular**
- Sudden death
- "Water-belly"

**Reproductive**
- Egg production loss
- Abnormal shape/texture
- Straining

**Mycoplasmosis, Infectious Coryza, Colibacillosis**

**Coccidiosis, Helminths, Salmonellosis, Viral Enteritis**

**Egg-bound, Internal layer, Hypocalcemia**

**Marek’s Disease, Adenocarcinoma**

Most Common Diseases of Backyard Poultry
Most Common Treatments

**Respiratory disease - Antibiotics**
- Most often: Tylan, Oxytet injectable

**Worms - Antihelminthics**
- Only three approved in poultry!
  - Fenbendazole
  - Piperazine
  - Hygromycin B
- None currently approved for laying hens - ~14 day egg withdrawal off label

**Coccidia - Anticoccidials**
- Numerous!
  - Some are toxic to turkeys
  - Narasin (Monsanto)
  - Salinomycin (Browns/Saxen)

**Your Role:**
- Prescription water medication
- Veterinary Feed Directive
- Any in-feed medication

Biosecurity

**How are diseases introduced?**

- People
- Poultry
- Facilities and Equipment
- Vectors
  - Animal and inanimate objects
- Vaccines

Prevention of Disease

**Biosecurity**
- Keep clothing (coveralls, shoes) that are specific to working with your birds, change afterwards.
- Wash your hands after handling birds or bird material
- Quarantine new birds/flocks
- Use appropriate disinfectants when transferring supplies or yourself between birds (i.e. footbaths)
- Buy from reputable dealers/suppliers
- Monitor your flock for signs of illness
- Keep age groups separate - different disease risks
- Ideal to enclose birds to prevent access to wild birds

Questions??

Jessica.walters@vdacs.Virginia.gov

Virginia Dept of Ag and Consumer Services
Harrisonburg, VA

540-209-9130