IDENTIFICATION, PREVENTION, AND TREATMENT OF COMMON DISEASES IN BACKYARD POULTRY

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Veterinary / health professional support

- Strongly recommend consultation with a veterinarian or other health professional in diagnosing or determining treatment for disease problems.

- The diagnostic laboratory is designed to support the local veterinary practitioners in the state and, where there is no such support, provide service directly to producers and raisers.
Definition

Biosecurity is a set of preventive measures designed to reduce the risk of introduction and transmission of infectious diseases, pests, and other organisms onto a farm and subsequent spread throughout the farm.

Common sense.
Biosecurity has three basic components:

- **Isolation**
  - Confinement
  - Control of movement
  - Introduction of new birds

- **Traffic control**
  - Onto the premises (shared labor/equipment)
  - Throughout the premises

- **Sanitation**
  - Cleanliness
  - Disinfection
  - Rodent and wild bird control
COMMON EXTERNAL PARASITES

- Common external parasites of chickens
  - Fleas
  - Lice
  - Mites
- Symptoms may include weight loss, visible parasites, nervousness, scratching.
FLEAS
LICE
LICE
MITES
SLIDE COURTESY OF H. JOHN BARNES, COLLEGE OF VETERINARY MEDICINE, NORTH CAROLINA STATE UNIVERSITY
EXTERNAL PARASITE TREATMENTS

Organophosphates
- Rabon® 50 WP (stirofos)
  - Mix 0.5 pounds in 6 gallons water – treats 600 birds
- Ravap® EC (stirofos + vapona)
  - Mix 1 gallon per 50 gallons water – treats 5000 birds

Permethrin
- Tengard® SFR (36.8% permethrin)
  - Mix 4 ounces in 3.75 gallons water – treats 375 birds
Applications

- One gallon finished spray per 100 birds
- Pressures of 75-125 psi (feather penetration)
- After birds treated, entire facility should be treated to point of run-off
- One gallon finished spray per 100 square feet
- Direct spray into cracks and crevices
- Birds and entire area treated twice, 14 days apart
COMMON INTERNAL PARASITES

• Common intestinal parasites of chickens
  – Roundworms
  – Tapeworms
  – Threadworms
  – Cecal worms
  – Coccidia

• Symptoms may include weight loss, diarrhea, visible worms or segments in feces
THREADWORMS
SLIDE COURTESY OF INTERVET SCHERING PLOUGH
CECAL WORMS

SLIDE COURTESY OF H. JOHN BARNES, COLLEGE OF VETERINARY MEDICINE, NORTH CAROLINA STATE UNIVERSITY
Piperazine (Wazine®-17)

- Treats adult ascarids (roundworms) only
- Treat every 4 weeks until 16 weeks of age
- Four to 6 weeks of age, for each 100 birds: Use 1 fluid oz of Wazine-17 in 1 U.S. gallon of drinking water
- Over 6 weeks of age, for each 100 birds: Use 2 fluid ozs of Wazine-17 in 2 U.S. gallons of drinking water
COCCIDIOSIS (EIMERIA ACERVULINA)
SLIDE COURTESY OF H. JOHN BARNES, COLLEGE OF VETERINARY MEDICINE, NORTH CAROLINA STATE UNIVERSITY
COCCIDIOSIS (*EIMERIA NECATRIX*)

Slide courtesy of H. John Barnes, College of Veterinary Medicine, North Carolina State University.
COCCIDIOSIS (EIMERIA TENELLA)

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Treatment in water (amprolium or sulfamethazine)
- Amprolium-P® / Amprol® 9.6% Oral Solution
- Give at 0.012% level (8 fl oz per 50 gallons) for 3-5 days
- Severe outbreaks give at 0.024% (16 fl oz per 50 gallons)
- Continue with 0.006% (4 fl oz per 50 gallons) for an additional 1-2 weeks
- Sulmet® 12.5% solution - 1 oz/gallon, make fresh daily
- Administer for 2 days followed by ½ dose for additional 4 days

Treatment in feed
- Amprolium (36.3-227.0 g/ton) (Amprol® or Corid®)
- Numerous other ionophores and chemicals (commercial applications)
FOWL POX

Cause – Fowl pox virus (DNA virus)
- Many species of birds have their own specific pox virus

Transmission
- Infection occurs through mechanical transmission of the virus to injured or lacerated skin. Biting insects (mosquitoes) serve as mechanical vectors often resulting in ocular infection. Virus can reach the laryngeal region via the lacrimal duct.

Disease
- Mild to severe depending on infection rate.
- Secondary infections, blindness, respiratory distress.
FOWL POX

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FOWL POX

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Treatment/Prevention

- Vaccination in the face of an outbreak or as preventative.
  - Pigeon pox virus vaccine (wing-web).
  - Fowl pox virus vaccine (wing-web or thigh-stick [turkeys]).
- Stab inoculation site should develop a small bump or scab (“vaccine take”) in about 7-10 days and should resolve in about 14 days.
- Vaccination is usually done in 4-6-week-old birds, but if early exposure occurs, vaccination of younger birds can be done by wing-web with one needle applicator. A booster dose is recommended at 6 weeks of age.
Fowl pox vaccine can be ordered over the Internet at various web sites under the search engine entry “Fowl pox vaccine.”

Poxine® Fowl pox vaccine
Fort Dodge/Pfizer

Pigeon pox vaccine
Maine Biologics
MYCOPLASMOSIS

Cause – *Mycoplasma gallisepticum*, *M. synoviae*
- “Bacteria” with no cell wall (prokaryote)

Disease
- Respiratory rales, coughing, nasal discharge, conjunctivitis, sinusitis
- Secondary bacterial infections (colibacillosis)
MYCOPLASMOSES (M. GALLISEPTICUM)

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MYCOPLASMOSIS (M. GALLISEPTICUM)

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MYCOPLASMOSIS TREATMENT

Tylan® Soluble 100 gram (tylan base) package
- Mix 100 grams in 50 gallons water -> 2 grams/gallon for 3-5 days (approved for poultry)
- Withdrawal time is 1 day in chickens and 5 days in turkeys.

Lincomycin – spectinomycin (water)
- LS-50® packet 75 grams (approved for chickens)
- Packet 16.7 g lincomycin, 33.3 g spectinomycin
- 1 packet / 25 gallons drinking water
- Administer 5-7 days.
- Withdrawal time is zero.
MAREK’S DISEASE

Cause – Marek’s Disease virus (Herpes [DNA] virus)
- Virus that induces inflammation and neoplasia (cancer).
- Three serotypes
  - Serotype 1 (Virulent)
    - Mild, virulent, very virulent, very virulent plus
  - Serotype 2 (naturally avirulent)
  - Serotype 3 (avirulent turkey herpesvirus [HVT])

Transmission
- Infectious virus is produced in feather follicle epithelium and is shed in chicken dander, thus contaminating the environment. Virus remains infectious for several months at room temperature and for years at refrigerator temperatures. Inhalation of infectious virus is the main route of transmission leading to viremia.
MAREK’S DISEASE

Disease

- Almost any organ system can be affected resulting in clinical disease that varies widely.
- Depends on virus strain, bird genetics, exposure rate, environmental factors.
- Paralysis, depression, respiratory distress, blindness, “poor-doers.”
- Once infected (and recovered), birds shed indefinitely.
MAREK’S DISEASE
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MAREK’S DISEASE

Prevention

- Vaccination at 1 day of age in the hatchery or *in ovo* at 18 days of incubation.
- Large-scale poultry producers regularly vaccinate all commercial poultry at 1 day of age or *in ovo*. 
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Vaccines (lyophilized or liquid nitrogen frozen)
  - HVT (turkey herpesvirus).
  - Serotype 2 (SB-1) which is naturally avirulent.
  - Serotype 1 (Rispin’s strain [CVI988]) which is a modified virulent strain.

Monovalent and combination vaccines
  - HVT only (liquid nitrogen or lyophilized)
  - Bivalent (HVT + SB-1) (liquid nitrogen)
  - CVI988 only (liquid nitrogen)
  - CVI988 + HVT (liquid nitrogen)
  - CVI988 + HVT + SB-1 (liquid nitrogen)
CONTACT INFORMATION

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