

Common Poultry Diseases and Their Prevention

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Outline

- Definition of “disease”
- How diseases occur: basic principles
- Agent factors
- Host factors
- Management and environmental factors
- Signs of disease
- Common poultry diseases
- Final thoughts



What is *disease*?

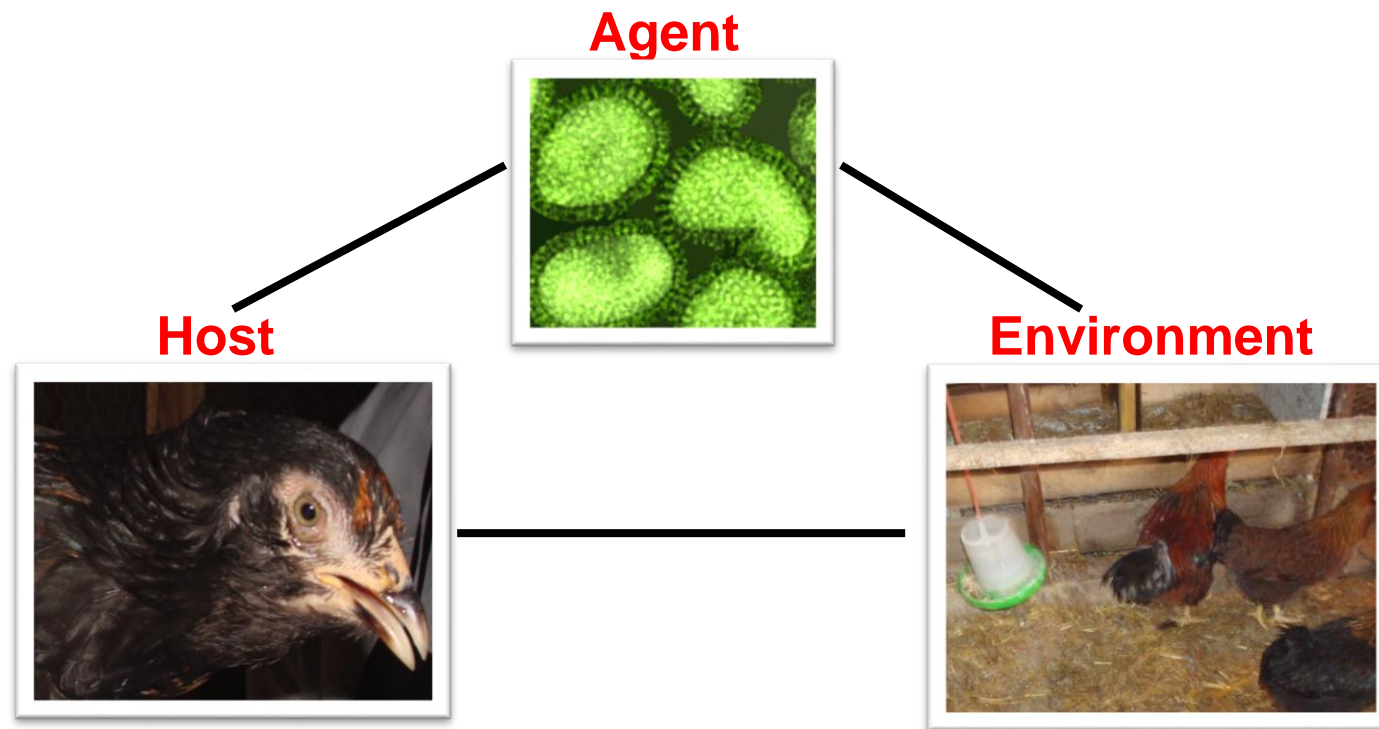
- Any condition that results in deviation from normal function





How do diseases occur?

Diseases occur due to the interaction between 3 main factors:



*NOTE: Not all poultry health and production problems are caused by infectious agents.
LOOK AT MANAGEMENT FACTORS FIRST BEFORE CONSIDERING INFECTIOUS DISEASE*

Agent Factors

- **Infectious Agents**

- Bacteria
- Viruses
- Parasites
- Fungi



- **Non-infectious agents**

- Chemical
- Physical
- Lack or excess of certain vitamins and minerals
- Toxins



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Host Factors

- Breed
- Age
- Sex
- Immune status



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Management and Environmental Factors

- Feed quality
- Lighting program
- Air quality and ventilation
- Water quality
- Space (floor or cage, feeder, drinker)
- Sanitation
- Weather
- Season
- Geographic location



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General Signs of Disease

- Poor appetite
- Huddling
- Depression
- Runting/stunting; poor uniformity
- Ruffled feathers
- Coughing, sneezing, oculo-nasal discharge, difficult breathing
- Bloody or wet litter
- Increased mortality





Specific Signs of Disease

- Respiratory

(gasping, coughing, snicking, swollen eyes, nasal discharge)



- Possible Diseases/Conditions:

- Avian Influenza
- Newcastle Disease
- Infectious Laryngotracheitis
- Infectious Bronchitis
- Mycoplasmosis
- Colibacillosis
- Fowl Cholera
- Ammonia



Specific Signs of Disease

- Nervous

(trembling, paralysis,
recumbency, circling)



- Possible

- Diseases/Conditions:

- Marek's Disease
- Newcastle Disease
- Fowl Cholera
- Encephalomyelitis
- Encephalomalacia (Vit. E/selenium deficiency)
- Aspergillosis
- Botulism
- Bacterial encephalitis

Specific Signs of Disease

- Locomotor

(crooked toes, swollen hocks, hyper-extended or rubbery legs)



- Possible

Diseases/Conditions:

- Rickets (Ca/P/Vit. D3 deficiency or imbalance)
- Riboflavin deficiency
- Biotin deficiency
- Synovitis
- Injury



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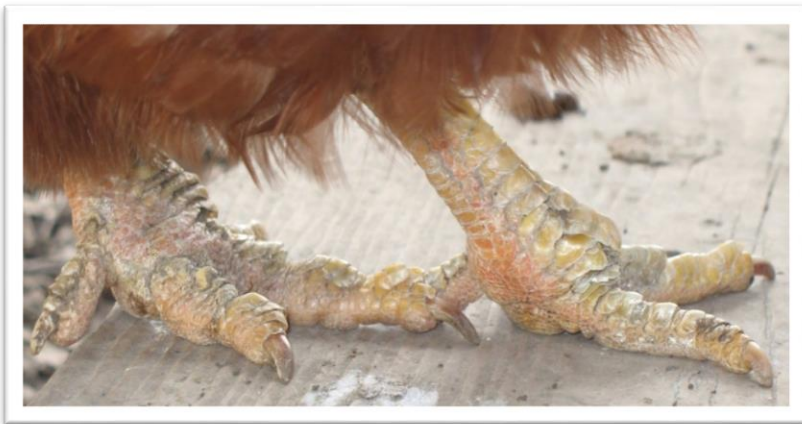
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Specific Signs of Disease

- External Signs

(skin/eye/leg/foot lesions)



- Possible Disease/Conditions:

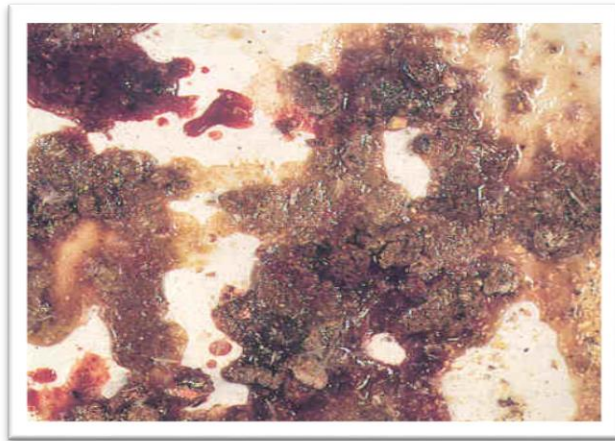
- Lice
- Mites
- Biotin deficiency
- Pantothenic acid deficiency
- Riboflavin deficiency
- Gangrenous dermatitis
(*Clostridium sp*; *Staph. aureus*)



Specific Signs of Disease

- Digestive

(bloody or watery feces)



- Possible Disease/Conditions:

- Coccidiosis
- Necrotic enteritis
- Coronaviral enteritis
- Infectious Bursal Disease
- Ulcerative enteritis
- Paratyphoid (*Salmonella spp.*)
- Worms
- Salt poisoning

Other Signs of Disease or Health Problems

- Stress

(overcrowding, vaccination reaction, extreme temperatures, lack of feed or water)





What to do if your birds look sick:

- Isolate sick bird(s) immediately
- Dispose of dead birds promptly and properly
- Observe the rest of the flock for signs of disease
- Call your veterinarian, animal health technician, or Extension agent for advice and assistance
- Do not move birds or eggs off your farm
- Do not add new birds to flock
- Do not visit other farms



Not all poultry health problems are caused by infectious agents

Always consider non-infectious conditions (management factors or FLAWSS) first:

- **F**eed quality
- **L**ighting
- **A**ir quality and ventilation
- **W**ater quality
- **S**pace (feeders and drinkers)
- **S**anitation



Use medications judiciously and only when necessary

- Management problems can only be fixed by proper management changes and/or corrections
- Viral infections cannot be treated with antibiotics
- Bacterial infections can only be treated with the proper antibiotic
- Always consult a veterinarian before initiating any treatment*
- If antibiotics or other drugs are prescribed, follow recommended dose, route, duration of therapy, and withdrawal time





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COMMON POULTRY DISEASES



Infectious Laryngotracheitis



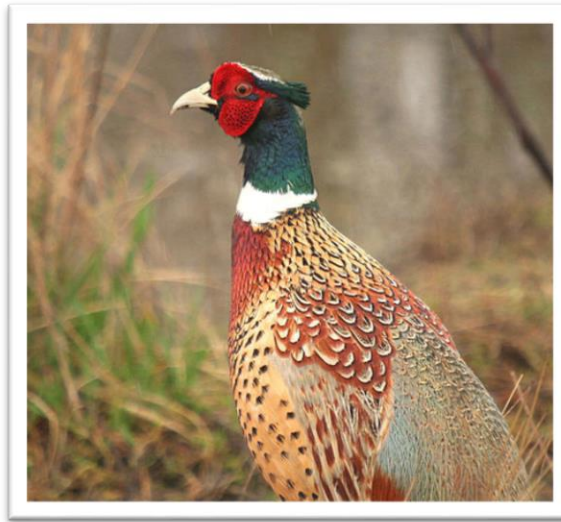
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Species Affected

- Chickens, pheasants, peafowl



scienceblogs.com



fishandgame.idaho.gov



nathistoc.bio.uci.edu



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Cause

- Herpes virus
- Spread through infected birds and improperly administered live vaccines
 - Airborne transmission or through contaminated equipment, shoes, and clothing



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Signs and Lesions

- Respiratory distress, coughing, sneezing, expectoration of bloody mucus
- Conjunctivitis and facial swelling



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Prevention and Control

- Vaccination
 - Do not vaccinate if the disease is not present or has not been observed in your area
 - If vaccination is deemed necessary, MDA allows only Tissue Culture Origin (TCO) ILT vaccine in non-commercial poultry
- Biosecurity
 - Do not allow visitors to your farm nor visit other farms
 - Do not share equipment and vehicles
 - Clean and disinfect poultry house, coops, and equipment regularly and between flocks



Mycoplasmosis

(Chronic Respiratory Disease)



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Species Affected

- Chickens and turkeys



nrm.wikipedia.org



en.wikipedia.org



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Cause

- *Mycoplasma gallisepticum*
 - Secondary *E. coli* infection is common
- Transmitted through the egg, airborne droplets, or from bird to bird



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Signs and Lesions

- Coughing, sneezing, facial swelling, nasal discharge, cloudy air sacs
- Deformed eggs, drop in egg production
- Pericarditis and perihepatitis (with secondary *E. coli* infection)



Prevention and Control

- Purchase chicks only from MG-negative sources (National Poultry Improvement Plan or NPIP participant)
- Provide medicated feed (containing Tylan[®] or Gallimycin[®])
- Don't mix birds of different species and age





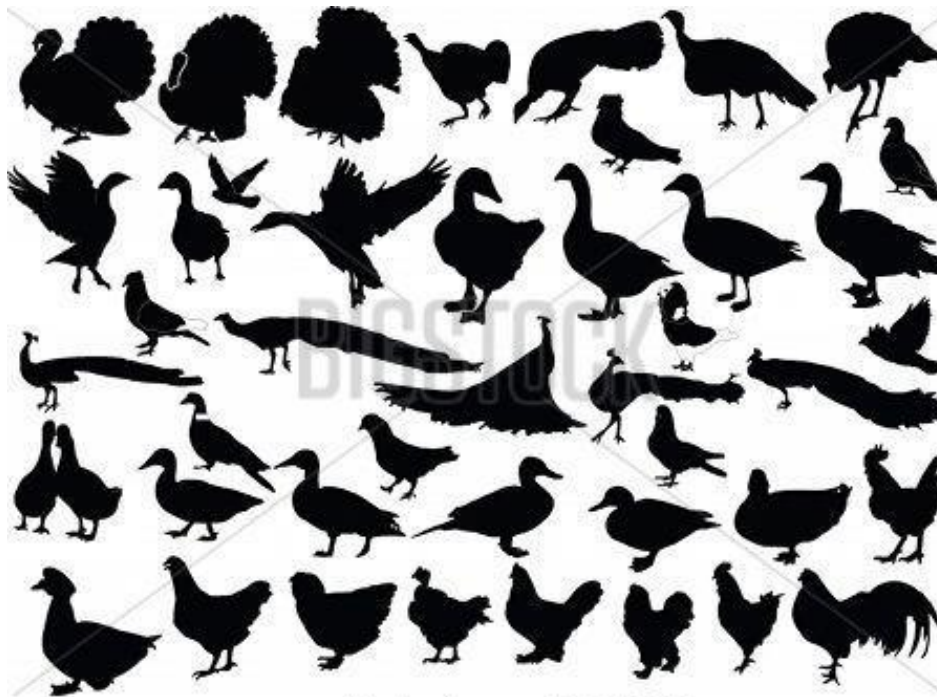
Internal Parasites



www.backyardchickens.com

Species Affected

- All birds



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Cause

- Roundworms (Ascarids)
- Hairworms (Capillaria)
- Cecal worms (Heterakis)
- Tapeworms (Cestodes)

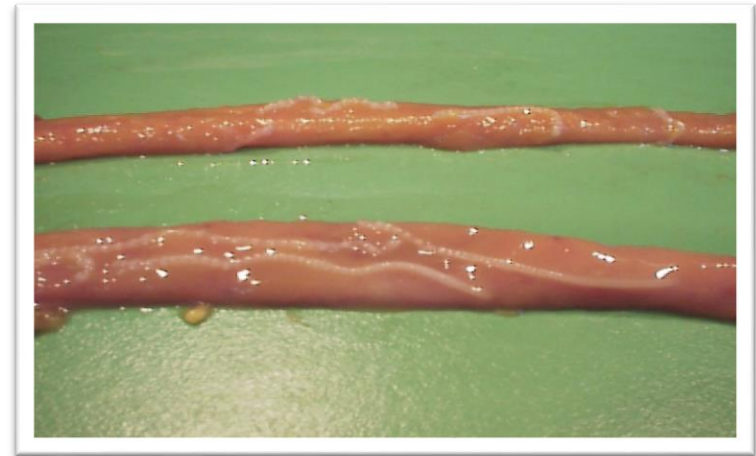


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Signs and Lesions

- Unthriftiness, stunted growth, emaciation
- Enteritis
- Anemia
- Decreased egg production



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Prevention and Control

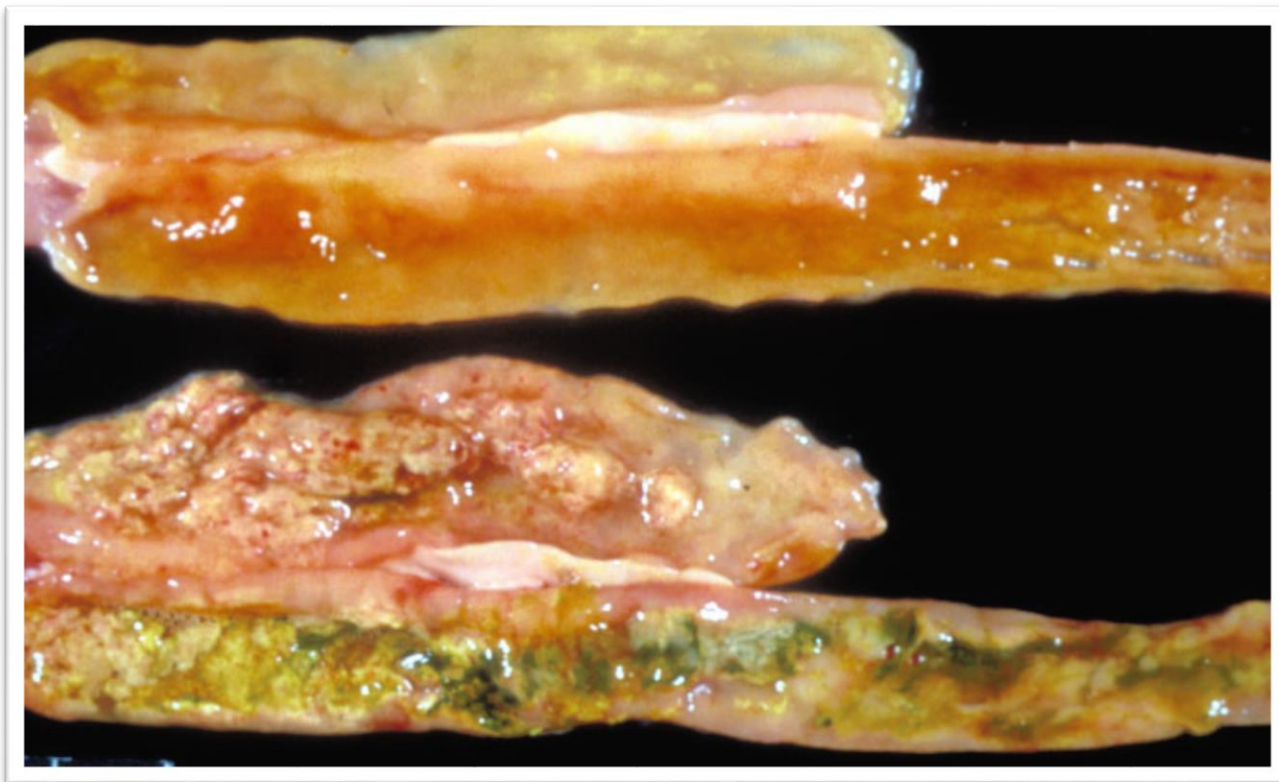
- Rotate birds in yards or pens
- Deworm flocks regularly, particularly those raised on the ground or in floor pens
- Provide medicated feed (containing broad-spectrum dewormer)
- Treat infected birds with the proper dewormer
 - *Piperazine* (Wazine™) is the only dewormer approved for use in poultry by the FDA but is effective only against roundworms and cecal worms



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Coccidiosis



Species Affected

- Chickens and turkeys



tinyfarmblog.com



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Cause

- *Eimeria sp.*
- 9 species in chickens
- 7 species in turkeys
- Transmitted through infected droppings (containing oocysts)



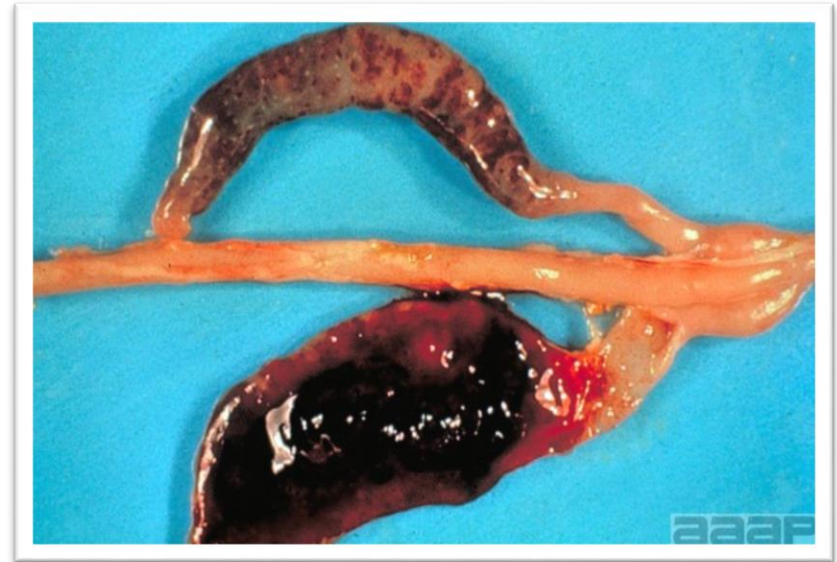
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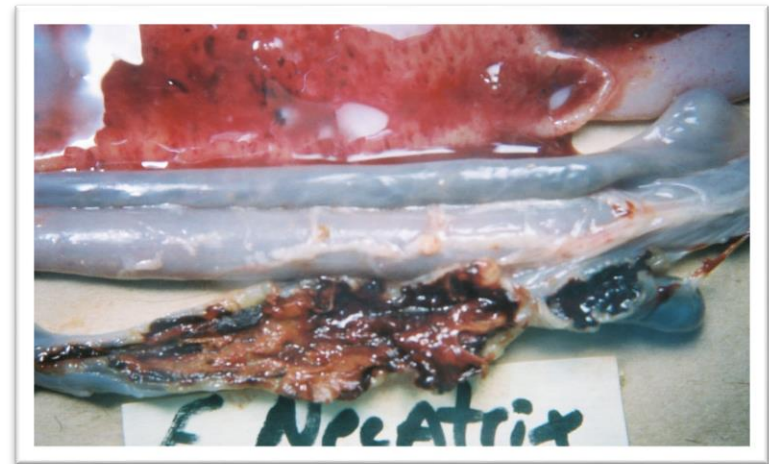
Clinical Signs and Lesions

- Cecal coccidiosis
(caused mainly by *E. tenella* in chickens)
 - High mortality
 - Bloody feces
 - Pale combs
 - Ruffled feathers
 - Lack of appetite
 - Coagulated blood in ceca



Clinical Signs and Lesions

- Intestinal coccidiosis
(caused by *E. acervulina*, *E. brunetti*, *E. maxima*, and *E. necatrix*)
 - Loss of weight
 - Shriveled combs
 - Drop in egg production
 - Pale shanks



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Prevention and Control

- Good management
- Provide medicated feed (with coccidiostats such as amprolium or Amprol™)
- Treat infected flocks promptly



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External Parasites

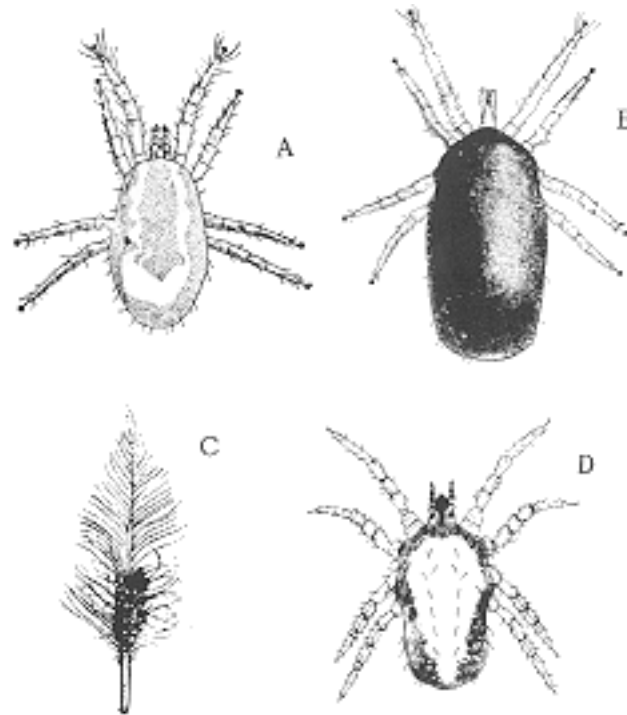


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Mites



Northern fowl mite. A, Female before feeding. B, Engorged female. C, Egg mass on feather. D, Nymph.

keep-hens-raise-chickens.com



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Species Affected

- All birds



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Cause

- Scaly leg mite (*Knemidocoptes mutans*)
- Chicken mite (*Dermanyssus gallinae*)
- Northern fowl mite (*Ornithonyssus sylviarum*)



www.chickenvet.co.uk



www.ca.uky.edu



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Signs and Lesions

- **Scaly leg mite:**
 - scales and crusts in legs, combs, and wattles
- **Northern fowl mite:**
 - blackened feathers, scabby skin around vent



Prevention and Control

- **Scaly leg mite**
 - Cull or isolate affected birds
 - Apply an oil-based product such as petroleum jelly, a 50:50 kerosene and cooking oil mix, or Blue Ribbon™ (a commercial mixture of plant oils, canola, and camphor) to affected areas
- **Northern fowl mite**
 - Monitor all birds and facilities for infestation; check egg flats and cases for mites
 - Treat birds with approved insecticide (such as carbaryl or Sevin™)
 - Use dry powder to dust birds
 - Use liquid spray or wettable powder for walls and floors to penetrate cracks and crevices
 - Wash plastic flats and racks with hot water and detergent



Bumblefoot

(Pododermatitis)



www.backyardchickens.com

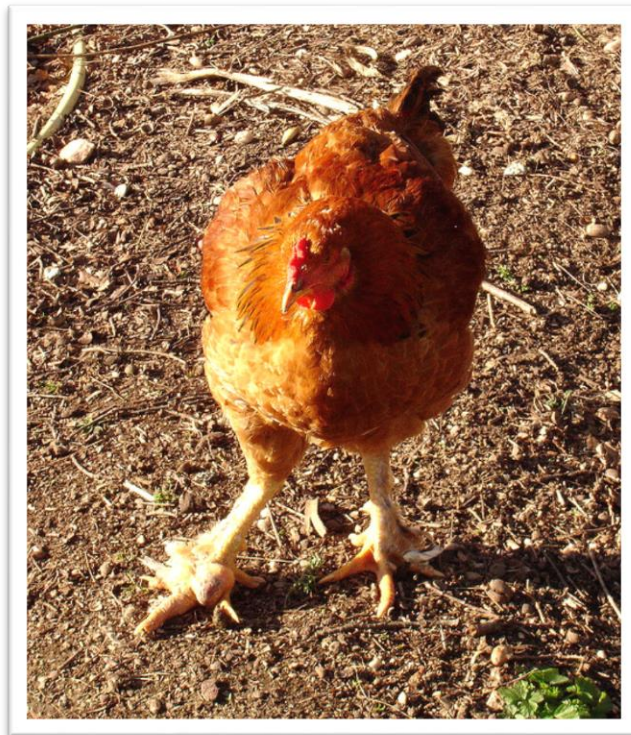


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Species Affected

- Chickens (mostly males and heavy birds)



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Cause

- Injury to the lower surface of the foot and subsequent infection with *Staphylococcus* bacteria
- Common causes of injury:
 - Rough perches
 - Splinters
 - Wire floors
 - Poor litter or bedding quality



www.avianweb.com



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Signs and Lesions

- Lameness
- Swelling of the foot pad
- Hard, pus-filled abscess on foot pad



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Prevention and Control

- Provide good quality litter or bedding. Keep bedding clean, dry, and deep.
- Keep perches less than 18 inches from the floor to prevent foot damage due to impact from jumping.
- Remove potential sources of injury such as sharp objects and/or surfaces.



Treatment

- Soak foot in warm water and Epsom salts.
- Clean affected area with soap and warm water, then disinfect with alcohol.
- If skin is open, drain pus from abscess (If there is no break in the skin to allow drainage of abscess, use a sterile scalpel or sharp end of a disinfected blade to cut a small opening).
- Flush the abscess cavity with hydrogen peroxide to clean out pus and debris.
- Pack the cavity with antibiotic ointment and wrap the foot with gauze and elastic bandage. Repeat daily until foot heals.





FINAL THOUGHTS

- Be vigilant – continuous flock health monitoring is a **MUST**
- Use all available senses (sight, touch, smell, hearing) as well as **COMMON SENSE**
- Look for all possible causes and/or predisposing factors, i.e. do not “leave any stoned unturned”
- Initiate corrective or preventive measures promptly
- When in doubt, seek expert advice
- While practicing strict biosecurity, provide adequate feed, water, ventilation, heat, etc. (a.k.a. bird comfort or TLC)

Questions?



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