Common diseases in laying hens

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Categories: Vets

Date: October 27, 2008

This article will provide a brief overview of the most common diseases in backyard laying hens, and an outline of how to treat them.

And, if your clinical examination yields nothing, and the owner declines diagnostic procedures, just remember you can’t go wrong with a course of enrofloxacin and soluble multivitamins, with a shot of dex for good measure (but please don’t quote me on that).

Amyloidosis

This is a coronavirus that causes high morbidity and up to 25 per cent mortality. Clinical signs include muscular tremors and sudden death. Treatment is via sodium salicylate (1gm/litre) where allowed, and antibiotics for secondary infections, such as enrofloxacin or tetracyclines.

Aspergillosis

This is a fungal infection likely to arise where there is over-crowding and/or poor ventilation. Signs include tachypnoea, dyspnoea, polydipsia and anorexia. Environmental spraying with antifungal antiseptic can reduce challenge, and treatment with nystatin can be rewarding.

Avian encephalomyelitis

This is either egg drop (a small drop in egg production lasting up to two weeks) or a virus causing tremors, depression, nervous signs and crouching on to the hocks. There is no treatment for the condition, but a vaccine is available for breeders.

Avian influenza

This is a notifiable viral disease that causes coughing, depression, anorexia, egg drop, cyanosis of the combs and wattles, diarrhoea, ocular and nasal discharge, and death. Slaughter affected animals to control spread.
Avian rhinotracheitis

This is a viral infection that causes swelling of the head, ocular and nasal discharge, coughing, depression and anorexia, dyspnoea, and sinusitis. Antibiotics are not very effective, but chlorination of the drinking water and multivitamins can provide some help.

Biting lice

Several lice species plague chickens. Lice are large enough to be seen on the feathers, and their eggs tend to be laid around the vent. Treatment includes malathion powder and pyrethroid sprays, where these techniques are permitted.

Botulism

Caused by Clostridium botulinum, the bacterial toxin may be picked up by chickens in pond mud, carcases and maggots. Bacteria in the caecum may also produce the toxin. As in mammals, botulism causes nervous signs, weakness, progressive flaccid paralysis and sudden death. Antibiotics may help if used early.

Candidiasis

A fungal yeast that infects the alimentary tract, the organism is often present in healthy animals, with disease occurring secondary to stress and poor hygiene. It causes thickening and white plaques on the alimentary mucosa – plaques may be seen in the mouth. Treatment includes nystatin and copper sulphate.

Capillariasis

This is a nematode worm that causes diarrhoea, wasting, poor growth and depression. Fenbendazole is an effective treatment.

Chicken anaemia

This is a viral disease caused by chicken anaemia virus. Affected birds are pale and fail to thrive. Good hygiene and control of other diseases may be beneficial. Live vaccines are available.

Chlamydiosis

This is caused by Chlamydia psittaci, a bacterium of highly variable pathogenicity. It is a scheduled disease and rarely diagnosed in the UK. Morbidity is high, causing respiratory signs, diarrhoea,
depression, weakness, inappetence, weight loss, nasal discharge and conjunctivitis. Slaughter is advisable as it is a zoonotic condition.

**Chondrodystrophy**

This is caused by a deficiency of manganese, choline or zinc, either singly or in combination. Signs include short legs, lameness, distortion of the hock and slipping of the Achilles tendon – hence the importance of feeding a good-quality layers’ diet, and not relying on garden grub only.

**Coccidiosis**

Caused by *Eimeria* species, this has high morbidity and mortality rates. Signs include depression, closed eyes, diarrhoea (with or without blood) and anorexia. Treatment is undertaken via sulphonamides. Commercial poultry farmers tend to use coccidiostats in feed to prevent this potentially common disease.

**Colibacillosis and colisepticaemia**

This is caused by *Escherichia coli*, and is the most common infectious disease involved in farmed poultry, but it is unlikely to be seen in backyard hens (where hygiene is usually very good). It is often seen following upper respiratory tract disease or mycoplasmosis; or it can be associated with immunosuppressive diseases. Indicators include respiratory signs, depression, inappetence, poor growth and omphalitis. Treatment is via amoxycillin, tetracyclines, neomycin, gentamycin, pot sulphonamide or flouroquinolones.

**Cropworm**

This is another nematode that causes anaemia and emaciation. Levamisole and coumaphos are effective treatment methods.

**Cryptosporidiosis**

Signs involved with this condition include snick, cough, swollen sinuses, low weight gain and diarrhoea. There is no effective treatment available.

**Depluming and scaly leg mites**

External parasites (*Knemidocoptes* species) cause irritation and the bird pulls at its feathers. Mange lesions are seen on the legs and unfeathered parts. Dipping the affected parts in a solution of acaricide may be beneficial; application of mineral or vegetable oil can deter the mites, too.
Egg drop syndrome

A sudden drop in egg production, and the production of rough, thin or soft-shelled eggs and shell-less eggs can be associated with adenovirus, environmental stresses, nutritional deficiencies, such as vitamin E, B12, and D, as well as calcium, phosphorous and selenium. Many infectious diseases will cause a secondary reduction and/or cessation of egg production.

Endocarditis

Several bacterial infections may be involved with this condition, such as *Staphylococcus*, *Streptococcus*, *Erysipelothrix* etc. Chickens can present with an ascites and congested peripheral vessels. Antibiotics are only of help if used in the early stages.

Erysipelas

This is an acute onset bacterial disease causing anorexia, depression, swollen snood, possibly diarrhoea and respiratory signs, perineal congestion, and scabby skin. It can also cause sudden death. As a treatment, penicillin is effective.

Fowl cholera

A serious and highly contagious disease, this is caused by *Pasteurella multocida*. The disease can range from acute septicaemia to chronic and localised infections, and the morbidity and mortality may be up to 100 per cent. Long-term treatment with sulphonamides, tetracyclines, erythromycin, streptomycin or penicillin is necessary. Vaccines are available.

Fowl pox

This is a viral disease that causes skin lesions and/or plaques on combs and wattles, caseous deposits in the mouth and depression. There are no treatments, but vaccines are available.

Gangrenous dermatitis

A bacterial wound infection, this causes clinical disease, and sometimes sudden death, in immunosuppressed birds. Penicillin is effective if used early.

Gape

This is a nematode infection that causes gaping, dysnpoea, head shaking and anorexia. Flubendazole is effective for treatment and prevention.
Gizzard worms

Several types of nematode are implicated with gizzard worms, causing depression, weight loss and poor thrift. Levamisole and flubendazole are effective.

Haemorrhagic disease

This is a complex condition associated with drug toxicities, mycotoxins and viral infections. Usually follows a course of about three weeks. Signs include depression, anorexia, poor growth, pallor or blood in the faeces. Treatment includes vitamin K, the removal of sulphonamides and adding liver solubles to feed.

Histamonosis (blackhead)

A protozoan parasite that mainly affects turkeys, this can, however, be significant in breeding chickens and free-range layers. Earthworms host the larvae, and the disease causes cyanosis of the head, bloody droppings, depression and anorexia. Chickens are a major source of infection for turkeys, so the two species should not be kept together.

Impaction and foreign bodies of the gizzard

The normal function of the gizzard is to aid in the physical grinding of food materials to reduce their particle size to aid digestion. The gizzard or crop may become impacted with litter, grass, string etc, causing anorexia and poor thrift. Palpation of the gizzard will reveal a mass firmer than normal, and the magic combination of a heroic vet and a devoted owner will often result in general anaesthesia, a hefty bill, and sometimes even a live chicken at the end of it.

Inclusion body hepatitis

A disease characterised by acute mortality, often with severe anaemia, this is caused by an adenovirus. There are several different serotypes involved, but they may also be isolated from healthy chickens. Signs include depression, inappetence, pallor and ruffled feathers. There is no treatment, but soluble multivitamins may help recovery.

Infectious bronchitis

This is probably the most common respiratory disease of commercially farmed chickens, but less common in backyard hens, where poor ventilation and high density are not an issue.

Morbidity is very high and signs include depression, huddling, coughing, gasping and dyspnoea,
diarrhoea, and polyuria. Antigenic variations of the virus can cause egg drop, soft or rough-shelled eggs, and loss of egg quality. Treatment is via sodium salicylate at 1gm/litre where permitted, and antibiotics to control secondary infection. Vaccines are available.

**Infectious bursal disease**

This is a viral disease that targets the bursal component of the immune system of chickens, making the chickens more susceptible to concurrent diseases. There are non-specific signs, including depression, anorexia, unsteadiness, huddling and diarrhoea with urates in mucus. There is no specific treatment.

**Infectious coryza**

A highly infectious disease, this is characterised by catarrhal inflammation of the upper respiratory tract. There is facial swelling, purulent ocular and nasal discharge, swollen wattles, sneezing, dyspnoea, loss of condition, egg drop and inappetence. Treatment with streptomycin, sulphonamides, tylosin or erythromycin can be beneficial.

**Infectious laryngotracheitis**

This is a herpesvirus with high morbidity and up to 70 per cent mortality. Dyspnoea, gasping, coughing of mucus and blood, egg drop, ocular discharge, sinusitis and nasal discharge are all signs. There is no treatment, other than antibiotics, to control secondary infection.

**Lymphoid leukocis**

With this condition, affected birds become weaker and emaciated. There is regression of the comb. The abdomen becomes enlarged, and greenish diarrhoea develops in the terminal stages. There are no treatments available.

**Marek’s disease**

This is a herpesvirus infection with various manifestations – neurological and visceral (tumours in the heart, ovary, testes, muscles and/or lungs, and cutaneous (tumours of feather follicles). Morbidity is 10 to 50 per cent and mortality is up to 100 per cent. There is no treatment, but vaccines are available.

**Mycoplasma gallisepticum**

This is a chronic respiratory disease that causes coughing, nasal and ocular discharge, poor
productivity, slow growth, leg problems, stunting and inappetence. Treatment is with tilmicosin, tylosin, spiramycin, tetracyclines or fluoroquinolones, and vaccines are available.

**Mycoplasma synoviae**

With this condition, infection is via the conjunctiva or upper respiratory tract. Signs include depression, lameness, swelling of the hocks, shanks and feet and inappetence. Treatment is via antibiotics, as for *M gallisepticum*.

**Mycotoxicosis**

This is caused by toxins produced by moulds. Chickens are very resistant to the effects, but may suffer from diarrhoea, paralysis or ataxia, poor food conversion efficiency and pallor. Antifungal feed preservatives in food are a helpful preventive technique.

**Necrotic enteritis**

An acute or chronic enterotoxaemia caused by *Clostridium pefringens*. Causes diarrhoea, closed eyes, immobility and inappetence. Treatment with penicillins can help.

**Newcastle disease**

Otherwise known as paramyxovirus one, this is a highly contagious and notifiable viral disease. Signs are typically of a disease of the nervous, respiratory or reproductive systems. There are no treatments available.

**Red mite and northern fowl mite**

The red mite feeds by sucking blood, and can be seen on the birds at night. The northern fowl mite is grey, but still large enough to be seen with the naked eye. Affected birds are pruritic, restless and may have anaemia (pale wattles and combs). Pyrethroids, organophosphates, carbamates, vegetable oil or mineral oil have been used to control red mites. For northern fowl mites, it is essential to apply approved insecticides to the birds.

**Respiratory adenovirus infection**

This condition exhibits mild snick and cough without mortality. No treatment is required.

**Respiratory disease complex**
A number of respiratory viruses and bacteria may be involved with this condition. Signs include snick, sneezing, head swelling, conjunctivitis, nasal exudates and rattling noises. Antibiotics may provide some help.

**Salmonella gallinarum (fowl typhoid)**

This condition causes dejection, ruffled feathers, inappetence, thirst, yellow diarrhoea and reluctance to move.

Treatment is with amoxycillin, potentiated sulphonamides, tetracyclines or fluoroquinolones.

**Staphylococcal arthritis or bumble foot**

This infection is usually obtained by the respiratory route, but wounds may present another mode of entry. Lameness, depression and occasional mortality may be seen. Antibiotics can help.

**Ticks**

Ticks are rarely a problem in the UK. They can cause anaemia and weakness, and insecticide sprays in the birds’ housing is more likely to be effective than treatment of the birds themselves.

**Trichomoniasis**

This is a protozoan parasite, and signs include open mouths, drooling and repeated swallowing movements, loss of condition, and (sometimes) watery eyes and nervous signs. Treatment includes dimetridazole, nithiazide and enheptin.

**Ulcerative enteritis**

This is an acute, highly contagious disease caused by *Clostridium colinum* and characterised by ulcers of the intestines and caeca, causing diarrhoea, anaemia and depression. Treatment with antibiotics and multivitamins helps.

- The author states some drugs mentioned in this article are not licensed for avian use in the UK.

**References**

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