

Aivlosin® is highly effective

- Quickly reduces all the classical signs of “bulgy eye”
- Conjunctivitis – Watery eyes – Nasal exudates – Sinus swelling – Depression

Treated birds have increased weight gain and improved feed efficiency over un-medicated birds

The benefits of using Aivlosin®

- Highly palatable – no reduction in intake of medicated water during treatment period
- Convenient pack sizes – simple dose calculations for 3 day treatment programmes
- Short 2 day meat and offal withdrawal period – allows peace of mind

The excellent solubility of Aivlosin, especially in cold water, and short 3 day treatment period makes it simple to administer and ideal for use under field conditions

Simple to Administer

Hints for mixing

- Use cold water for the mixing of Aivlosin, it surprisingly dissolves even better in cold water!
- Always stir the water vigorously whilst slowly adding the correct weight of Aivlosin granules
- When making a stock solution never make a more concentrated solution than 40g Aivlosin in 1.5L water.

Aivlosin® 625mg/g Granules for Pheasants

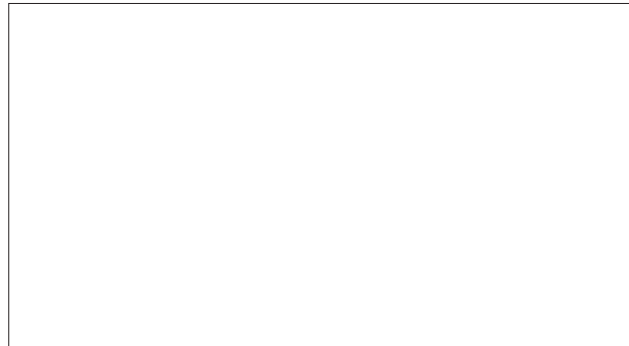
The only licensed product for the treatment of Bulgy-eye in pheasants

available in two convenient pack sizes

16g Sachet - sufficient to treat 1000 - 6 week old Poults for 1 day

40g Sachet - sufficient to treat 1000kg bodyweight of birds for 1 day

Veterinary Surgeon



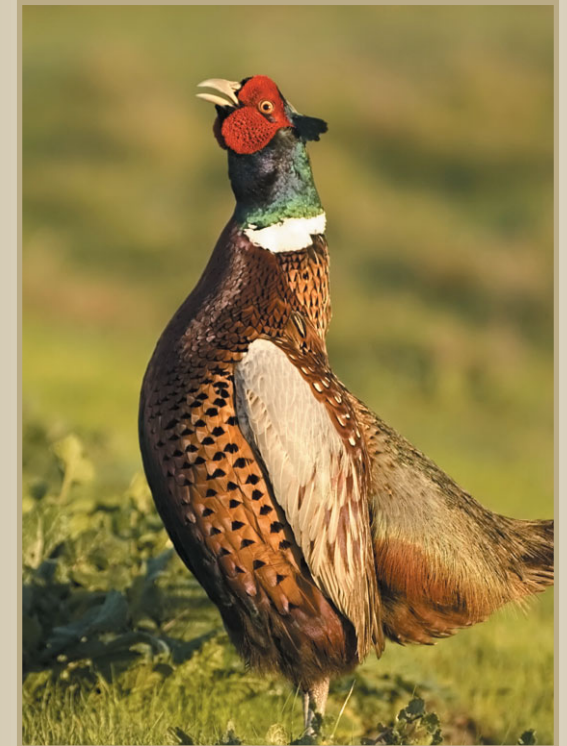
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Marketing authorisation number EU/2/04/044/011 – 16 g and EU/2/04/044/012 – 40 g. For further information contact Eco Animal Health on 020 8447 8899 or write to ECO Animal Health, PO Box 47542, London, N14 6WS. Always consult a veterinarian before use. Aivlosin® copy right ECO Animal Health 2010. Aivlosin is a registered trademark of ECO Animal Health.

The Only Licensed Antibiotic for ‘Bulgy Eye’ in Pheasants

due to Mycoplasma gallisepticum



Aivlosin® 625mg/g Granules for Pheasants



The Challenge

Mycoplasma infections are one of the most economically important diseases of game birds in the UK. The disease affects birds of all ages and its presence can predispose and increase the severity of other diseases.

Mycoplasmosis can be spread both via the egg and through direct contact with infected birds (commercial or wild). It can have a serious effect on egg production and it is essential that action is taken as early as possible to control it.

If the infection levels in the breeding birds are reduced at the start of the season it will help minimise the levels of infection transmitted via the eggs and through direct contact.

The breeding and rearing seasons are also one of the most stressful times of the year for the birds and as a consequence it is at these times that the birds are most vulnerable. The most obvious sign of a clinical infection is swelling of the facial sinuses, conjunctivitis, nasal and eye discharges, sneezing, snicking, breathing problems and a reluctance to move due to swollen joints.

Reduction of stress through sound management practices can help reduce the levels of Mycoplasma infection.

The introduction of Aivlosin following a specific development programme aimed at its use in pheasants provides breeders and rearers with the first fully licensed and proven product for the control of Mycoplasma infection.



Aivlosin Action and Efficacy

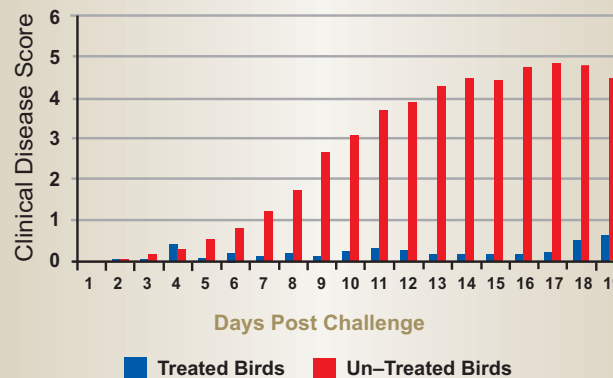
Aivlosin is rapidly absorbed after oral administration and achieves peak therapeutic levels within 2 hours. This rapid absorption is the critical first step in enabling Aivlosin to quickly reach the target tissues, enter them and start to exert a clinical effect.

A challenge study using a model developed at Liverpool University by Professor Janet Bradbury and her colleagues, evaluated the effect of treating pheasants with Aivlosin in the drinking water for 3 days at 25mg/kg bodyweight once signs of Mycoplasmosis disease (Bulgy eye) were evident.

The birds were examined daily for clinical signs (nasal exudate, sinus swelling, watery eyes, conjunctivitis and depression) and the signs were given a score which are shown graphically in table 1.

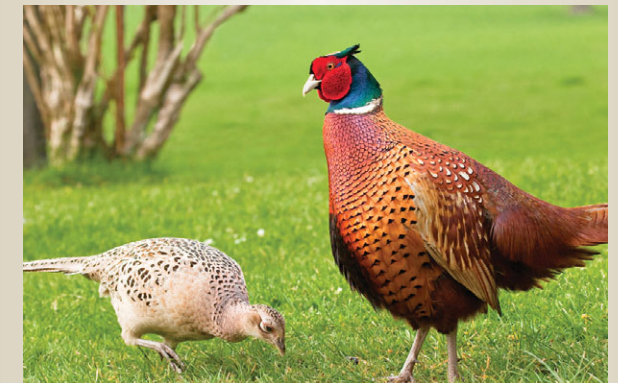
TABLE 1

Results of Liverpool University Mycoplasma Study



Managing the problem

- Ensure disinfectant footbaths are in use at all main entrances and changed regularly
- All housing should be cleaned and disinfected between batches of birds
- Quarantine all sick birds already on the farm and any day old chicks and poults on arrival
- Ensure that housing is in good condition, clean and kept at an appropriate steady temperature, especially during the first 3 weeks.
- Higher stocking densities are more likely to result in the spread of infection
- Ideally batch sizes should be small enough groups that can be isolated should a disease problem arise
- Ensure pens are large enough to ensure there is no overcrowding that can lead to stress
- Make sure clean water is available and that the area surrounding drinkers is clean and dry
- Ensure that feed is used in a timely manner and feed on dry ground to ensure that it does not become contaminated.
- Control exposure to contamination/ disease spread from wild birds – starlings, rooks etc and other vermin
- Work with your veterinary practice to develop a health management programme suited to your rearing situation



Market place

First licensed antibiotic for *Mycoplasma*

ECO ANIMAL HEALTH HAS LAUNCHED AN antibiotic treatment for *Mycoplasma* in pheasants.

New to the market in February this year, Aivlosin for Pheasants offers simple control of the respiratory disease, mycoplasmosis (also known as 'bulgey-eye'), specifically in reared pheasants



Aivlosin 625mg/g soluble granules contain the macrolide antibiotic tylvalosin which is effective in controlling *Mycoplasma* infections in poultry. As the only fully licensed product for the treatment of mycoplasmosis in pheasants, it is currently legally the only product that gamekeepers should use for controlling 'bulgey-eye'.

Outbreaks of upper respiratory disease in pheasants are often caused by or associated with *Mycoplasma* infection. Typically, infection is associated with slow onset chronic respiratory signs, which include severe sinusitis, sneezing, conjunctivitis, watery eye, nasal discharge, poor productivity, slow growth and a marked reluctance to move. Coinfections with other respiratory viruses and bacteria are also common.

Poultry and *Mycoplasma* expert, Professor Janet Bradbury at the Department of Veterinary Pathology, University of Liverpool, led a clinical study on this new drug, as part of ECO Animal Health's submission to the EMEA (European Medicines Agency) licensing authorisation.

Professor Bradbury explained: "Mycoplasmosis is a disease that affects growing and breeding gamebirds and represents a troublesome health problem for gamekeepers. Our clinical trial, which will be reported in full later this year, has shown that pheasants with mycoplasmosis that were treated with tylvalosin (Aivlosin) in the drinking water for three days showed significantly improved

easy to administer and no side effects were observed."

Previous work carried out by the University of Cambridge demonstrated that Aivlosin accumulates in various cell types more quickly and at higher concentrations than existing non-licensed antibiotics¹, currently used in gamebirds. Aivlosin also acts by boosting the bird's own innate immune system by stimulating the increased production of white blood cells².

Aivlosin is highly soluble and dosing either via traditional header tank application; automated systems such as Dosatrons or drinking vessels is recommended. The approved dosage rate for both *Mycoplasma* treatment is 2.5mg/kg for three consecutive days.

Aivlosin comes in a convenient 16g pack size which will treat 1,000 x six-week old poults, for one of the three days of medication.

ECO ANIMAL HEALTH 020 8447 8899

AIVLOSIN RESEARCH PAPERS

1. Stuart AD, Brown TDK, Imrie G, Tasker JB, Mockett APA (2007) Intra-cellular accumulation and trans-epithelial transport of Aivlosin, Tylosin and Tilmicosin. *The Pig Journal*, 60: 26-35.
2. Cerda RO, Barbeito CG, Portiansky EL (2000) Effect of a treatment with Bromesol and a macrolide on present lungs macrophage number of healthy broilers. *Vetanco Technical Bulletin n. 15*.

Tackling bulgy eye in pheasants

One of the most economically damaging diseases of game birds in the UK is mycoplasmosis - better known as 'bulgy eye' disease. With the introduction of the first licensed treatment, SARAH ROGERS takes a closer look at new management options for game bird breeders and rearers.

Mycoplasmosis has been recognised in pheasants and partridges since the 1950s. The disease is most often seen in adult birds, though all ages may be affected and the high death rate among 7-to-14-day-old chicks can be devastating to game farmers.

Typically, *Mycoplasma gallisepticum* bacterial infections are associated with slow onset chronic respiratory signs which include severe sinusitis, sneezing, conjunctivitis, watery eye, nasal discharge, poor productivity, slow growth and a marked reluctance to move. They often occur alongside other respiratory diseases and can increase their severity.

Routes of infection

The disease is passed between birds by close contact through air droplets, infected litter and equipment, and from hen to chick through the egg. Unfortunately, recovered birds remain carriers, meaning that once a flock is infected it remains infected and subsequent stress such as breeding may cause a new outbreak.

Spread is slow between houses and pens suggesting that aerosols are not normally a major route of transmission. However, any inanimate object is capable of carrying infectious organisms. Consequently equipment, vehicles or articles taken to pens appear to play a significant factor in spreading the disease between farms.



Chicks and poults in rearing pen: feed should be supplied regularly and on dry ground

The bacteria can survive for a number of days outside the bird, and prolonged survival has been reported in eggs. Survival seems to be improved on hair and feathers. Importantly, co-infection with respiratory viruses such as infectious bursal disease and Newcastle disease, or virulent bacterial infections including *E. coli*, *Pasteurella* spp. *Haemophilus*, and inadequate environmental conditions are all factors for clinical disease.

The most obvious signs of infection are:

- Coughing
- Nasal and eye discharge
- Sinus swelling
- Poor productivity
- Slow growth
- Leg problems
- Depression
- Lack of appetite
- Reduced hatchability and chick viability
- Occasional brain disease and abnormal feathers

Diagnosis

Your vet will take swabs for testing in a number of ways. Suspect flocks should be re-sampled after two to three weeks and it should be noted that some inactivated vaccines for other diseases can induce 'false positives' in testing for three to eight weeks. The use of modern DNA-based techniques can quickly confirm diagnosis if it is urgent to determine the flock status.

Prevention by biosecurity and management

Most countries' official poultry health programmes are focused on eradicating the disease, so *Mycoplasma gallisepticum* infection status is important for trade in birds, hatching eggs and chicks. These programmes are based on making sure chicks are sold free from infection, all-in/all-out production, biosecurity, and routine monitoring. In the case of known infected flocks preventative medication is usually beneficial.

Vaccines, many of which are not licensed for use in pheasants, using live attenuated or naturally mild strains of the bacterium are used in some countries and may be helpful in gradually displacing field strains on multi-age sites. However, productivity in challenged and vaccinated birds is not as good as in *Mycoplasma*-free stock. Good management techniques, avoiding stress and overcrowding are most important factors for keeping birds healthy and disease-free.



Healthy hen



Hen with 'bulgy eye' symptoms

Biosecurity measures

- Place disinfectant footbaths at all main entrances and change them regularly
- Clean, disinfect and dry out housing between batches of birds
- Quarantine all sick birds and any day-old chicks
- Ensure housing is in good condition, clean and kept at an appropriate steady temperature, especially during the first three weeks.
- Ideally batch sizes should be small enough to ensure that groups can be isolated should a problem arise
- Ensure pens are large enough to ensure there is no overcrowding that can lead to stress. Higher stocking densities are more likely to result in the spread of infection
- Make sure clean water is available and the area surrounding drinkers is clean and dry
- Ensure feed is supplied regularly and on dry ground so that it does not become contaminated.
- Control exposure to wild birds and pests
- Nominate a veterinary practice to handle any disease problem
- Work with your vet to develop a health management programme

Prevention by vaccination

A study carried out for the Game and Wildlife Conservation Trust suggests that a Mycoplasma vaccine used in chickens is not effective in day-old game birds.

Other research suggests that Mycoplasma infection can be enhanced by the presence of certain viruses, notably coronaviruses such as infectious bronchitis, avian pneumovirus and even infectious laryngotracheitis. The author concluded that whilst vaccinating with the Mg vaccine alone provided little improvement, definite improvements in bird health using antibiotic programmes to control the disease as an assessor were seen when breeder birds were vaccinated for all four diseases.

Game farmers or keepers who use caught-up pheasants should be particularly vigilant as these birds are more likely to suffer from or to be carrying the disease.



Treatment

Various antibiotics have been used to treat Mycoplasma infections including tylan, tiamulin, tetracyclines, lincospectin but none were licensed specifically for use in pheasants or game birds. Recently a new oral antibiotic tylvalosin (Aivlosin) has received a full marketing authorisation through the European Regulatory Authorities. Antibiotics should be seen as a control measure and will not under normal circumstances eradicate the disease. Mycoplasma infection is in the environment and birds can and will become re-infected or wild birds will spread the disease back in to flocks. However, recent studies have shown that the Aivlosin offers unsurpassed control of Mycoplasma gallisepticum, statistically bettering the historical treatment of choice in closely monitored trials with Liverpool University.

Aivlosin is the first and only fully European Medicines Agency (EMA) licensed product for the treatment of bulgy eye, caused by Mycoplasma gallisepticum in pheasants and should be used at the first sign of infection. Research shows that it quickly reduces all the classical signs of bulgy eye and treated birds feed better and gain weight faster compared with un-medicated birds and those subject to standard treatment.

Aivlosin granules dissolve in cold water and don't need sugary additives to make them palatable to the birds. The Aivlosin treatment period is a convenient three-day programme and the meat withdrawal period is only two days.

Conclusion

Mycoplasmosis can be spread both through the egg and through direct contact with infected birds (commercial or wild). It can have a serious effect on egg production and it is essential that action is taken as early as possible to control it. If the infection levels in the breeding birds are reduced at the start of the season it will help minimise the levels of infection transmitted via the eggs and through direct contact.

The breeding and rearing seasons are also one of the most stressful times of the year for the birds and as a consequence it is at these times that the birds are most vulnerable. Reduction of stress through sound management practices can help reduce the levels of Mycoplasma infection.

Sarah Rogers is a consultant for ECO Animal Health www.ecoanimalhealth.com

Key points

1. Avoid stress
2. Have a good biosecurity programme in place
3. Select birds from a known source not just caught- up birds
4. Speak to your vet about a farm health scheme.

From: <http://www.basc.org.uk/en/how-to/gamekeeping/tacklingbulgy-eye-in-pheasants.cfm>

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Calculating the Quantity of Aivlosin Water Soluble Granules Required

Establish an average bird weight

Weigh a sample number of birds and calculate average weight (g)

Calculate amount of Aivlosin required for daily treatment e.g.

Recommended dosage (mg/kg)	25
Average bodyweight (g)	1,000
Number of birds	1,000
Total weight of birds to be treated (kg)	1,000
Total quantity of Aivlosin required (g) =	

$$\frac{\text{Total of birds to be treated} \times 25}{625} = 40\text{g}$$

- Aivlosin rate of inclusion should be calculated with your veterinary surgeon
- Aivlosin Water Soluble should be administered daily for 3 consecutive days

Calculate number of sachets required

Number of sachets required per day equals -

Total quantity of Aivlosin required divided by 40 or 16

e.g. 40g divided by 40 = 1 sachet or 40g divided by 16 = 2.5 sachets

Quick Guide

16g sachet - sufficient to treat 1000 – 6 week old poults for 1 day (or 333 birds for 3 day course)

40g sachet - sufficient to treat 1000kg of bodyweight of adult birds for 1 day

Aivlosin rate of inclusion should be calculated with your veterinary surgeon.

Aivlosin Water Soluble should be administered at this dosage for 3 consecutive days

Water required for daily medication

Poults	Daily intake per bird (ml)	Daily intake per 1,000 birds (Litres)
Day old	10	10
1 wk	20	20
3 wk	30	30
4 wk	40	40
5 wk	50	50
6 wk	60	60
7 wk	65	65
8 wk	70	70
9 wk	75	75
12 wk	80	80
Breeding Hens	100	100
Laying Hens	200	200

This table can only give an approximate guide to water intake.

Aivlosin 625mg/g Granules for Pheasants

Mixing Aivlosin Soluble Granules

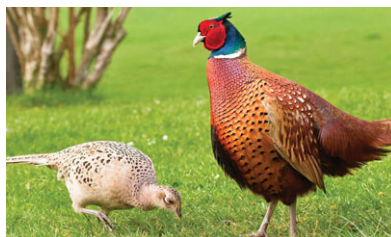
- Take 4-5 litres (approx 1 gal) of cold water in a bucket - allow at least 1.5 litres (approx 2.5 pints) per 40g sachet or 600ml (approx 1 pint) per 16g sachet
- Stir the water vigorously and slowly add the correct weight of Aivlosin Granules
- Continue stirring for a further 3-4 minutes
- When the Aivlosin Granules are fully dissolved, make the solution up to the volume of water required for the number of birds to be treated
- Start medication at the same time each day

Note:

- Water intake varies according to the strain of birds, the rearing conditions, the health of the birds and climatic conditions
- Some cloudiness may be seen when hard water is used but this will not affect the efficacy of the product
- The Aivlosin medicated water should be the sole water supply to the birds during treatment
- Fresh drinking water should be made available whenever the medicated water is finished
- Care should be taken when using Aivlosin as a treatment and administration is via a water line many metres long - sometimes medication will be delayed for several hours or even days



Water medicated with Aivlosin Soluble has been shown to be highly palatable with no reduction in water intake.



ECO Animal Health

www.aivlosin.com

POM-V in the UK. Contains tylvalosin.
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