Blackhead in turkeys

P M. A. Harwood
Department of Agriculture
BLACKHEAD IN TURKEYS
(Infectious Entero-hepatitis)

By P. M. A. HARWOOD, M.R.C.V.S., Senior Veterinary Surgeon.

INFECTIOUS entero-hepatitis, or blackhead as it is commonly called, is responsible for more deaths among turkeys than any other disease with which the flockowner has to contend. The greatest losses occur in poults up to three months old, but turkeys of all ages are susceptible. Recovery from an attack of blackhead does not necessarily confer a lasting immunity and many recovered birds remain carriers of the disease.

The common name of the disease alludes to a darkening of the head, which may occur owing to failure of the circulation (cyanosis). This symptom does not always appear, however, and frequently the head is pale or yellowish in colour.

CAUSE
Blackhead is caused by a microscopic animal parasite called Histomonas meleagridis. While direct transmission may take place from bird to bird through the medium of infected droppings (this being greatly aided by filthy and damp conditions), the minute blackhead parasite can also live inside the eggs of the common blind-gut worm (Heterakis gallinae) of fowls. These eggs are very resistant to heat, cold, and other adverse conditions that would normally kill the parasite, and they enable the infection to remain active in the ground for considerable periods.

SYMPTOMS
The birds become drowsy, and stand about with ruffled feathers and drooping wings. The droppings are liquid and have a characteristic sulphur colour. Where the birds are sick for two or three days before dying, they waste very rapidly and become extremely emaciated.

In young poults the disease is often rapidly fatal and the birds die almost as soon as symptoms are apparent. The death rate is frequently 100 per cent. In older birds the disease may run a more protracted course, and some birds will recover. There is no seasonal incidence of the disease, which may appear at any time among birds in any age group.

POST MORTEM SYMPTOMS
The post mortem appearance of the organs of a turkey that has died of blackhead are quite characteristic.

The principal changes take place in the caeca or blind guts. They become severely inflamed and ulcerated, and the
lining membrane is thickened and covered with a foul-smelling exudate. There is a dry core of yellow cheesy material within the cavity of the organs, which may also contain blood.

Very typical changes are also seen in the liver. The surface of the liver is covered by circular depressed yellowish-green areas. These circular areas show concentric rings with slight variations in colour, and when the liver is cut, it is found that they extend deeply into the substance of the organ.

**PREVENTION**

The first consideration in dealing with the prevention of blackhead is that the organism causing the disease is not normally carried by turkeys, but is a common parasite of fowls, where it only infrequently causes disease.

It must be ensured, therefore, that turkeys have no contact whatsoever with fowls; that they are not allowed to run over land that has carried fowls unless the fowls have been kept off the land for at least twelve months previously, and that the runs cannot be contaminated with drainage from fowl-runs.

The second consideration is that adult turkeys that have recovered from blackhead may become carriers of the disease, and therefore young turkeys should be kept as severely isolated from adult stock as from fowls.

Turkey eggs should be artificially incubated, as the turkey hen may be a blackhead carrier, and it is obviously undesirable to use broody fowls to bring off the eggs.

Wet and filthy conditions greatly facilitate the spread of the disease from bird to bird. Brooding should be carried out under perfectly clean and dry conditions, using either battery brooders or clean and disinfected brooders of other types in conjunction with wire-netting floors or dry clean deep litter.

Great care must be exercised that food and water troughs do not become contaminated with droppings and that there are no wet areas around them.

When going on to open range, clean ground that has not carried turkeys or fowls for at least one year, and has not been fertilised with fowl or turkey manure should be used, and even under ideal conditions the concentration should never exceed 75 birds per acre. All wet and boggy areas should be excluded. In view of the fact that the blind-gut worm aids in the transmission of the disease, treatment of all turkeys should be undertaken to eliminate this parasite. A dose of 0.5 grams of phenothiazine should be given, and treatment may be effectively carried out by mixing one ounce of phenothiazine in enough wet mash to treat 60 birds.

To summarise the chief points in prevention of disease:

1. Turkeys should never come in contact with fowls or ground that has carried fowls less than 12 months previously.
2. Young and mature turkeys must be strictly segregated.
3. Artificial incubation and brooding are essential if turkey raising is to be a commercial success.
4. Filthy or damp conditions facilitate the spread of the disease. Strict attention must be paid to scrupulous cleanliness and dry conditions.
5. Treatment should be given to eliminate the blind-gut worm which aids in the transmission and “carry-over” of the disease.
TREATMENT

Once clinical cases appear in a flock of turkeys, it means that the majority of birds are already affected to some extent by the disease, and success can only be achieved by treating the entire flock. This makes treatment expensive.

Even more expensive is the measure commonly adopted of giving drugs continuously through the danger period in order to act as a preventive.

Drugs that are used for this purpose are organical arsenical preparations such as Turk-e-Sun or Stovarsol. While being quite effective as preventives of blackhead, they have proved rather disappointing in the treatment of the condition.

Acetylarsen, an organical arsenic preparation put up in injectible form, is useful both for its preventive and curative action. The drug is administered by injection either into a muscle or a vein. The disadvantages of this type of treatment are that a degree of skill is essential to effect the injection, especially where this is made into a vein, and where large numbers of birds are to be treated, the process is rather tedious.

A very recent innovation in the treatment and prevention of blackhead is a new drug called Entramin (M & B) (2-amino-5-nitrothiazole). When an outbreak of blackhead occurs, Entramin is fed at a concentration of 0.1% of active principle in the mash.

This is effected by mixing Entramin at the rate of 8 ounces of the drug per 112 lbs. of mash.

The cost of the drug for the treatment of turkeys at four months of age works out at approximately £d. per bird per day, and treatment must be continued for 14 days.

Where large quantities of birds are to be treated, a 2½lb. pack, sufficient to treat 560lb. of mash, is available at an approximate cost of 5d. per bird for 14 days' treatment.

Entramin may also be used as a preventive, by administering half the quantity that would be used for curative treatment.

During treatment of an outbreak with Entramin, all seriously affected birds should be isolated and, if necessary, forcibly fed with the medicated mash.

It is very important that the whole flock be treated at the commencement of an outbreak, and that treatment be continued for 14 days.

In mild outbreaks the drug may be fed for the second 7-day period at the rate of 8 ounces per 224lb. of mash.

It must be stressed that turkey raising cannot be a sound commercial proposition where the birds are run in conjunction or in contact with fowls, as under these conditions losses can only be prevented by medication during the entire life of the bird, and the costs involved by this render the project uneconomical.
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