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Liver cirrhosis: a new poultry disease

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A new poultry disease which is apparently peculiar to Western Australia is causing losses in some commercial poultry flocks in this State. The cause of the disease has not been isolated and no reliable treatment can yet be recommended.

A new poultry disease which has not been reported elsewhere has appeared in Western Australia and is causing great concern among commercial poultry farmers.

So far the disease has usually been referred to as hepatitis or biliary cirrhosis. However, to avoid any confusion these names may create and because the main organ affected is the liver the term liver cirrhosis is used in this case. Once the cause of the disease has been isolated it is likely that a more specific name will be adopted.

The first recorded case of liver cirrhosis occurred about four years ago, and since then a few isolated cases have been recorded each year. The present outbreak started in October and has spread to farms in most poultry centres around the metropolitan area. About 40 farms have been affected to some extent so far.

Field surveys and laboratory investigations indicate that there is no regular pattern connected with outbreaks from farm to farm, and for this reason it is difficult to describe the disease.

Outbreaks rarely occur in birds before the age of 10 weeks. The most common age incidence seems to be at point of lay and shortly afterwards.

Symptoms

A puzzling aspect of the disease is that although retarded growth, loss of production and some mortality are common to all outbreaks, the symptoms are not always the same and appear to fall into two groups. In one group there is an abnormally high body temperature of up to 111°F. (about 6 degrees above normal), some evidence of diarrhoea, often green in colour, and a swollen spleen. The liver is swollen and covered with minute lesions. On farms where affected birds have shown these symptoms the disease has been referred to as hepatitis.

The other group of symptoms is characterised by a shrunken liver which becomes hard and fibrous. Early external indications are retarded maturity, general lassness and a paleness of the face, followed by an excess of fluid in the body cavity, which is evident if the bird is handled. The term biliary cirrhosis has been used for outbreaks with these symptoms.

Liver cirrhosis causes losses through retarded maturity, lowered production and mortality. In most cases production is severely affected. Actual mortality is not usually high, although it has reached 20 per cent in a few flocks. A more typical mortality figure is 5 per cent. But in many cases deaths are still continuing.
On some farms large numbers have been culled in an effort to avoid total losses and in one case an entire flock of about 2,000 birds was disposed of.

Because of the lack of information and economic importance of liver cirrhosis, extensive research into the disease has been carried out by the Department of Agriculture. Field surveys, visits to affected farms, laboratory tests, hundreds of post mortems and trials involving the testing of feed from affected flocks have so far failed to reveal the cause of the disease.

Laboratory tests indicate that liver cirrhosis is not caused by a virus and evidence suggests that it is not primarily infectious, despite its widespread occurrence. This means that the problem is not as serious as if it were infectious, such as the viral, bacterial and protozoan diseases. Control should be possible once the cause is found.

It seems possible that liver cirrhosis is due to a combination of factors. This is indicated by post mortem findings which in some cases show a pure form of cirrhosis while in other cases secondary infections have been found.

An unusual finding is the presence of unidentified material in the bile duct. To our knowledge this is an abnormal condition which has not been reported elsewhere. Another fairly consistent finding has been the appearance of enteritis in affected birds. Internal parasites such as roundworm, tapeworm and capillaria worms are also commonly present.

**Treatment**

Until cause of liver cirrhosis is isolated, no definite control measures can be given. On the basis of field observations, it appears that in the less severe outbreaks where symptoms are those mentioned for hepatitis, some response can be obtained from furazolidone and the broad spectrum antibiotics. Once the liver reaches the shrunken, fibrous stage and the body cavity becomes filled with fluid there seems little likelihood of recovery.

A variety of responses have been obtained from treatment. Particularly with furazolidone (which has been the most used drug) and to a lesser extent with broad spectrum antibiotics, many farms have shown a response during the treatment period, which is 10 days at control level for furazolidone. In most cases this response is only temporary although a few farms claim continued benefit in treated flocks. At this stage it is too early to make definite statements on the value of drug treatment from field observations but because of the absence of consistent bacterial isolation, it is probable that treatment is only effective against secondary invasion.

It is strongly recommended that where liver cirrhosis is suspected in a flock, some affected birds should be submitted for post mortem. Some farmers have confused the condition with other diseases, which could be successfully treated.

Full scale investigations are continuing in an effort to solve this puzzling and serious problem.