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An unusual tick fever outbreak

Erratum
missing from PDF If an outbreak of tick fever occurs, the affected birds can be injected intra-muscularly with 20,000 to 50,000 units of procaine penicillin per bird. The remaining birds can be vaccinated with tick fever vaccine at 1 cc per bird. The vaccination is simply an intra-muscular injection in the thigh. A 19 gauge needle should be used.
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Early in the summer of 1961 there was a series of unusual tick fever outbreaks on several poultry farms in the metropolitan area. These outbreaks were unusual because no apparent vector (disease carrier) could be found.

Affected birds showed general tick fever symptoms, including loss of appetite and high fever. Restlessness, shrinkage and blackening of the combs and diarrhoea were followed by paralysis. The mortality rate in the early stages was as high as 90 per cent. of the affected birds.

Spraying for Tick

In each of the outbreaks it was at first thought that a small colony of tick might be isolated in a well hidden crevice and the usual spraying procedures were used. The nests, perches, timbers, all cracks and crevices were sprayed with 3 per cent. malathion spray both outside and inside the house. Trees near the poultry sheds were also sprayed. On one farm a pest exterminator was called in and the sheds thoroughly treated.

This treatment failed to stop the spread of the disease. Another peculiar feature of the disease was the manner in which it spread. (See diagram).

Unusual Spread of the Disease

The diagram shows that the spread was sporadic and did not follow a pattern consistent with the layout of the sheds. Perhaps an explanation of this is that the responsible vector was wind borne; however this is only a theory. It is thought at this stage that mosquitoes may have been the carriers and further work will be done to investigate this possibility.

The manner of spread was common to all the affected farms and it is difficult to explain how the disease spread other than by the above theories.

Treatment with Penicillin

Because of the high rate of mortality in these outbreaks each of the affected birds was treated with an intra muscular injection of 100,000 units of procaine penicillin. This dosage was probably excessive (20,000 units should be enough); the high dose rate was used to avoid a repeat injection and because of the difficulty in measuring small quantities under field conditions. Losses were reduced to 10 per cent. of affected birds; greater success might have been achieved had the birds been treated before an advanced stage of the disease had been reached.

The treatment successfully stopped most of the mortalities but egg production was still seriously reduced. Later re-infection of some birds is possible. If they were treated before the disease progressed too far the affected birds returned to production fairly quickly.

Vaccination

It was decided to vaccinate all the birds on the infected farms and to inject all the affected birds with 100,000 units of penicillin at the same time. This was done to reduce the chance of a further spread of infection, possibly through mosquito carriers.

Each bird was vaccinated intra-muscularly with 1 cc of vaccine, using an automatic syringe. About 500 birds can be vaccinated in one hour.

Within four days the epidemic was under control and no further treatment was needed. The laying birds were not seriously affected by the vaccination procedure.

Discussion

It is not known whether a tick borne infection existed as no evidence of tick could be found.

There was no evidence that red mite were involved in the reported outbreaks.
Treatment with procaine penicillin is effective, however egg production is seriously reduced and even with this treatment some birds will still die during an outbreak.

Where no vector can be found, vaccination is an effective method of control. The period of immunity after one inoculation is about nine months; after this the birds should be re-vaccinated.

In the outbreaks encountered so far it is possible that the removal of likely carrier birds will have obviated the need for further vaccination. After eight months no more cases have been recorded in the vaccinated birds or the younger, recently introduced birds.

In these outbreaks no evidence of tick could be found, but if tick are located every effort should be made to eradicate them.

Vaccination will prevent losses due to the disease but will not stop the parasites attacking the birds and causing lowered production, irritation and other secondary ailments.

**RECOMMENDATIONS**

- Precautionary measures to guard against tick and all external poultry pests should be carried out regularly.

Three per cent. Malathion spray preparation* is effective against these pests and should be used at least once every two to three months as a general farm practice.

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*Note.—A 3 per cent. Malathion spray is made up by mixing one part of Malathion 50 per cent. soluble oil in 17 parts of water.