

A HELPFUL TREATMENT FOR SALMONELLA IN DOVES

by

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For years no effective treatment for paratyphoid, Salmonella typhimurium, in doves, Streptopelia risoria, has been available. Not even a vaccine has been effective (also see Blaine, 1977). An association of continuous photoperiod (constant lights) for two-three months and permanent cessation of losses has been observed (Miller, 1974, 1976).

A fourth salmonella epidemic has given me an unwelcome chance to test my previous notions about photoperiod in salmonella epidemics. Losses were severe: 141 of 328 doves, 43%, in that room. We got a late start on the lights since we thought it was E. coli causing the early deaths. Two months of continuous light ended 6 May 77. The lights in this different dove room (1111 sq. ft.) were not as well controlled as the previous times, since there were too many windows (16) and not enough light bulbs. Nevertheless, only a few more deaths were attributed to salmonella. Better results may have been obtained, but in attempting to conform to animal care regulations the assistants cleaned and scraped assiduously. This stirred up much dust--just ideal to spread the infection to susceptible lungs and air sacs. The lung or air sac type infection killed them fast, usually 24-48 hours after symptoms showed: green feces, huddling, lack of normal activity.

I made about the same drinking water suspension as I had tried before of nitrofurazone (8.4 g in 5 quarts) and watered the entire north side of the large dove room with it for one week. Birds went on dying on both sides in equal numbers. As before, there was no noticeable effect! In view of the dust effects I decided to try a variation on the previous treatment. We put 2 g of nitrofurazone into solution with 100 ml of distilled water, then added 150 ml of DMSO (dimethyl sulfoxide). This made a 1% solution--pretty strong. The DMSO is noted for its tissue penetration abilities and may act as a carrier of a drug for maximum penetration to where it is needed. Then I injected 1/2 ml of the solution intraperitoneal (IP), instead of intramuscular (IM) as I did last time. In severe cases I injected 1 ml. The birds were placed on their backs for the injection so that the internal organs could fall away from the injection site just behind the posterior end of the sternum. The area was swabbed with 70% alcohol. The needle was a 3/4" 22 gauge on a Cornwall semi-automatic pipette. A half inch 21 gauge needle probably would be better. About 3 birds died immediately, evidently from mechanical injury to the liver and hemorrhage. The north side of the room was so injected (sick or healthy) and the southern half served as a control.

The injections had no noticeable effect as a preventative. However, half the birds showing symptoms, which were thus injected, recovered! One squab injected while healthy later got sick. It finally developed head tremors, one morning and was found inert but alive with its head hanging through the wire floor. An injection of 1 ml of the solution was given. The bird recovered and looks healthy and vigorous now!

The source of this infection, while unproven, very likely was infected wild mice again. Two dead mice were noticed laying on the floor and one outside two-three weeks before the epidemic got started.

Pigeons, *Columba livia*, in the same room, were much less affected. Only one squab died and one adult, a head tremor sideburns (SbSb), got sick. The IP injection treatment seemed to help the tremor pigeon back to her "normal".

The treatment is inconvenient, but for important individual birds maybe it's worth the effort. The question of whether recovered birds are carriers after this treatment is yet to be tested.

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