Pulloruin Disease and Fowl Typhoid

Cause

Pullorum disease is caused by a bacterium, Salmonella pullorum. Fowl typhoid is caused by Salmonella gallinarum, which is related to, but not identical to, S. pullorum.

Transmission

Pullorum can be transmitted by infected (carrier) breeder hens through their eggs. Chicks that hatch from such infected eggs will have typical pullorum disease (white diarrhoea) and high mortality. Infected chicks can also infect other chicks via droppings. Fowl typhoid is more a disease of adult chickens, with high mortality and morbidity. Horizontal transmission is important with fowl typhoid through infected droppings, dead bird carcasses, and infected clothing, shoes, utensils and other
fomites.

Species affected

Chickens, pheasants, ducks, geese and guinea fowl can contract both pullorum and fowl typhoid.

Clinical signs

Pullorum in chicks causes typical white bacillary diarrhoea, with pasted cloacas and high mortality. Infected adult breeders do not have clinical signs of the disease but have internal lesions in the ovary (miss-shaped, dark coloured follicles). Fowl typhoid in adult chickens causes listlessness and sulfurcoloured diarrhoea. The birds have generalized infection with swollen livers, spleens, and kidneys and haemorrhages in such tissues. Mortality is usually high: 25 to 60 %.

Treatment and control

Treatment of pullorum disease will not bring about a cure and is undesirable from a standpoint of eradication. It is far more practical to control the disease by elimination of infected carrier breeder hens.
Blood testing of breeder chickens by the serum plate or tube agglutination test with suitable S. pullorum antigen will detect infected carrier birds which can then be culled. Such control measures will stop the incidence of egg-transmitted pullorum disease. If hatching eggs from tested pullorum-free breeders are kept free from contamination through infected eggs from infected breeders or through contaminated equipment, chickens can remain after treatment. The best control method is eradication of infected birds. Breeder flocks should be blood tested with antigen for typhoid. The typhoid carriers can then be eliminated.

Vaccination for fowl typhoid with a special S. gallinarum (9R strain) has been practiced in several countries, but it should be discouraged in breeders when an eradication programme is in operation.