

Construct your electronic library on poultry health

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Introduction

One of the most common and most important lymphoproliferative diseases of poultry is Marek's disease. This disease is caused by a herpesvirus and is transmissible.

The definitive description of this disease was by the Hungarian, József Marek, in 1907 who named the disease polyneuritis. Other names have included neuritis, neurolymphomatosis gallinarum and range paralysis. In the 1960s Marek's disease and leucosis were differentiated into separate diseases.

As Marek's disease can cause up to 60% mortality in layers and up to 10% condemnations in broilers, it can be a serious economic problem for poultry producers. Some 10 years ago the global losses from Marek's disease were estimated at US\$1-2 billion. The disease is not of public health significance.

As Marek's disease is basically a viral tumour, studying Marek's disease has significantly contributed to comparative oncology.

The causal virus

The cause of Marek's disease is a cell associated herpesvirus. This virus can be subdivided into three distinct groups on the basis of biological properties. Virulence or oncogenicity is associated with serotype I Marek's disease virus. Individual viruses within this serotype range from virtually avirulent to highly virulent and are designated as mMDV, vMDV, wMDV and w+MDV.

Hosts

Chickens are susceptible to Marek's disease infection and tumour development. Turkeys, pheasants, quail and some species of waterfowl are susceptible to infection. For five years after 1997 severe outbreaks of Marek's disease were seen in some turkey flocks in Europe and Israel – mortality reached 40-80% between eight and 30 weeks of age.

Distribution

Marek's disease exists in all poultry producing areas.

Syndromes

Marek's disease is not a single entity but it exists as several distinct pathological entities. Lymphoproliferative conditions, especially lymphomas are the most common form of this disease. Other manifestations include skin leucosis in broilers, fowl paralysis, persistent neurological disease and eye lesions. Subclinical syndromes almost certainly exist but are difficult to identify and characterise. Marek's disease vaccinated flocks often produce more eggs indicating a possible role for this virus in depressed egg production.

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