



Marek's Disease

Alternate Names: Marek's Disease Virus (MDV).

Species Affected: Chickens, turkeys, quails.

What causes Marek's Disease? Gallid alphaherpesvirus type 2, also known as Marek's Disease Virus (MDV) which has multiple strains. This virus is highly resistant in the environment and it's so contagious that most chicken flocks worldwide can be considered infected with MDV. The virus attacks the immune system and peripheral nerves of chickens. Peripheral nerves connect all organs and body parts to the central nervous system (the brain and spinal cord).

How is Marek's Disease transmitted? MDV is highly contagious, and it's found in large numbers in the feather follicles making dander and dust the main source of infection. Chickens get infected via direct contact with MDV carrier birds or with contaminated environment, footwear, clothing, bedding, tools, and equipment.

What are the clinical signs of Marek's Disease? Most commercial chicken flocks are vaccinated against MDV so clinical disease is less common. Disease in unvaccinated flocks depends on MDV strain, flock age (young chicks are more prone to severe disease), breed, and husbandry practices. Signs of MDV include death of young birds, inactivity, incoordination, weakness and paralysis of legs and wings, blindness, multiple small tumors on the skin and internal organs.

What are the consequences of Marek's Disease? Chicken deaths due to paralysis, economic losses due to condemnation of carcasses or organs that have tumors at slaughter. Infected birds remain MDV carriers.

How is Marek's Disease detected? Based on clinical signs, observation of tumors on the skin, nerves or organs on dead birds, and laboratory testing. Histopathology (observation of tissues under a microscope), PCR (Polymerase

Chain Reaction, a molecular test to detect viral DNA), serology (a blood test to detect antibodies – i.e. to measure the reaction of the immune system), and MDV isolation (lab techniques to grow the virus) are used for confirmation.

How is Marek's Disease prevented? MDV is likely present in most chicken environments. Good biosecurity helps delay exposure of young chicks to MDV. Examples of biosecurity include cleaning and disinfection of brooding areas (places where young chicks are kept), keeping poultry in designated areas restricted to visitors, using clean footwear before entering poultry areas, using clean tools and equipment for poultry chores, and following a pest control program.

Available MDV vaccines are highly protective. Vaccines are given in ovo (i.e. injected in the egg before the chick hatches) or at the time of hatching. Consider establishing your flock with vaccinated chicks.

How can Marek's Disease be treated? There is no effective treatment against MDV.

Is Marek's Disease zoonotic (transmitted from animals to humans)? No

References:

- Dunn, J. (2022, October). *Marek's Disease in Poultry*. Merck Veterinary Manual. <https://www.merckvetmanual.com/poultry/neoplasms/marek-s-disease-in-poultry#:~:text=Marek%20disease%20is%20a%20highly%20contagious%20viral%20disease,treatment%20is%20available%2C%20current%20vaccines%20are%20highly%20protective.>