

Effect of mixed infection of *Mycoplasma gallinarum* and Newcastle disease virus (F strain) on the tracheal epithelium of village chickens

ABSTRACT

The effects of a mixed infection of *Mycoplasma gallinarum* and Newcastle disease virus (F strain) on the tracheal epithelium of village chickens were investigated and observed by scanning electron microscopy. Day-old village chicks were vaccinated intranasally with F strain Newcastle disease virus and inoculated intratracheally on the same day with 10⁸ colony forming units of *M. gallinarum*. In another study the chicks were vaccinated and then infected with *M. gallinarum* seven days later. The first group of chicks was euthanased three, seven, 10, 14 and 21 days after vaccination and infection and the vaccinated chicks were euthanased three, seven, 10 and 14 days after infection. In the chicks vaccinated and infected on the same day, major alterations to the tracheal epithelium were visible three days later. There were fewer ciliated cells and the borders of the non-ciliated cells were prominent. Several depressions had formed in the epithelial surface. At higher magnification, clumps of microvilli were visible on some of the non-ciliated cells. Seven days after vaccination and infection, the tracheal epithelium appeared normal, with an increase in the numbers of ciliated cells, although raised borders were observed on the non-ciliated cells in some areas. No clumping of microvilli or depressions in the epithelial surface were observed. In the chicks infected seven days after vaccination, the tracheal epithelium appeared normal with no visible changes on its surface.

Keyword: *Mycoplasma gallinarum*; Newcastle disease virus; Tracheal epithelium; Village chickens