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081 – Newcastle disease VII

Vaccination

Realistically, vaccination protects the bird against the more serious consequences of the disease but this usually involves a reduction in viral multiplication and shedding.

Work in the 1930s led to attenuation of Newcastle disease virus and this enabled large scale vaccine production to be considered as a means of controlling Newcastle disease. Mesogenic live vaccines such as Roakin, Hitchener B1 and La Sota are now the most widely used vaccines around the world. Although inactivated vaccines were widely used in Europe up until the mid-1970s, their poor performance in controlling the 1970-74 pandemic resulted in them being replaced by the Hitchner B1 and La Sota live vaccines.

Vaccination policies vary between countries and some countries, including some of the Scandinavian countries, have banned the use of any Newcastle disease vaccine. EU countries have defined which vaccines may be used (ICPI <0.4).

Vaccine	Pathotype	ICPI
La Sota	Lentogenic	0.4
F	Lentogenic	0.25
Hitchner B1	Lentogenic	0.2
Australian V4	Asymptomatic enteric	0.0
H Strain	Mesogenic	1.4
Roakin	Mesogenic	1.45
Mukteswar	Mesogenic	1.4

Live vaccines can be administered to individual birds by, for example, the intranasal or eye routes but their key attribute is that they can be administered quickly to a lot of birds by mass vaccination by aerosol or through the drinking water. With live vaccines if a few birds are not vaccinated at the outset they will be when the vaccine virus goes through its life cycle in most of the birds in the flock and is then shed in large numbers.

Inactivated vaccines

Various vaccine strains are used to produce inactivated or dead vaccine. By their very nature each and every bird must receive its dose of vaccine if vaccination is to be successful. Inactivated vaccines, because of their adjuvant, provide a longer and more persistent immunity against Newcastle disease and so they are preferred in breeders and table egg layers. The best results are obtained using a vaccination programme that uses live vaccine(s) for priming followed by a dose of inactivated vaccine close to point of lay.

Inactivated vaccines are not affected as much by maternal antibody and, so, in the face of serious field infection can be used early in the bird's life (for example administered in the hatchery) to give the best possible level of immunity as early as possible in the chick's life.

Monitoring of vaccination

Blood testing can be used to confirm that vaccination has conferred an adequate level of immunity to a flock.