Vaccination Programmes for

FREE RANGE FLOCKS

in New Zealand:

Biosecurity and skilled poultry husbandry are the best weapons to prevent diseases from entering a free range operation. When the risk of disease could be too high and other control measures do not provide sufficient insurance to guarantee chicken health, welfare and food safety, vaccination is recommended as a safe exposure of the birds to microorganisms which will stimulate the immune system to build up protection against damaging or deadly diseases.

New Zealand is the only country in the world that remains free of Infectious Bursal Disease (IBD). It is also free of Newcastle Disease and Highly Pathogenic Avian Influenza. There are however some poultry diseases that do occur as either a sporadic or a constant problem within the region and may require vaccination.

'Core' Vaccinations In New Zealand, these diseases are the most common threat and are usually included in a vaccination programme:
Marek's Disease : Required for all commercial layers
Infectious Bronchitis (IB) : All layers, using live and killed vaccines for protection throughout production
Avian Encephalomyelitis (AE) : All layers
***Salmonella* Typhimurium :** highly adviseable for commercial layers

'Non-core' Vaccinations There are often other infectious diseases that occur sporadically or are endemic in certain areas and require vaccination control, such as:
EDS (Egg Drop Syndrome): Sporadic in all regions.
Fowl cholera (*Pasteurella multocida*): Sporadic in all regions.
Fowl Pox and ILT: Common in the Auckland region
Coccidiosis : All non-caged layers

Why should we vaccinate free range operations?

There are ***3 main reasons*** to vaccinate poultry in free range operations:

1- Animal Welfare!

Firstly, to be consistent with the free range system, we are looking at animal welfare. By maintaining the birds naturally protected from field infections, we allow them to use their own immune system to ward off diseases, rather than resorting to treatments. Vaccination educates the immune system to fight against diseases. Non-vaccinated birds may recover from disease challenges, but after disease has run its course, at the cost of their own health.

2- Optimum Performance!

Diseases such as AE, Infectious Bronchitis or EDS can reduce the output of eggs and some can deteriorate egg quality. A cracked or broken egg has no commercial value, but it costs the same to be produced as a healthy egg. Many of these diseases do not show any other symptom other than poor performance. Often, the reason for underachieving flocks is the occurrence of diseases.

3- Food Safety!

Several strains of *Salmonella* may affect chicken without causing any symptoms of disease in the animals. However, such strains may be extremely dangerous if consumed by humans in contaminated poultry meat or eggs. Vaccination of pullets and broilers against *Salmonella* Typhimurium is one of the main weapons to guarantee freedom of Salmonella in free range products.

Immunity and Poultry Health

Recommended vaccination programmes for

*Free Range Egg Layers**

Type of Disease & Vaccine	Method of Administration and WHY?
Marek's and ***Salmonella* Typhimurium** (1st dose)	Marek's is a lethal disease in chickens. *Salmonella* can be a lethal disease in humans. The Marek's vaccine and the first dose of the *Salmonella* vaccine (Megan® Vac 1) are given in the hatchery. When you receive your day-of-age chicks, they are already injected with Marek's and sprayed with Megan® Vac 1.
***Salmonella* Typhimurium** (2nd and 3rd doses)	Megan® Vac 1, by spray, or drinking water. Second dose at 2 weeks of age, and 3rd dose at 16 weeks of age. **This programme will ensure the best possible protection against *Salmonella* colonisation and shedding throughout the production cycle.**
Avian Encephalomyelitis (AE- Vac™)	AE will lead to little symptoms other than the so-called "false layers", when a large percentage of the flock could stop laying eggs during peak production.
Infectious Bronchitis (IBNZ-A)	By spray, or drinking water, at weeks 4 and 10. This vaccine against IB utilises a virus strain isolated in New Zealand: the Pacificvet Infectious Bronchitis NZ "A" Strain. Vaccinating twice during rearing protects the pullets from infections during the development of their ovaries. It also primes them for vaccination with inactivated vaccine (below), which will protect them throughout production.
Some other diseases & vaccines (less frequent / optional): **Infectious Bronchitis** Inactivated Vaccine (Inacti/Vac® IB1) **Egg Drop Syndrome** (EDS) **Fowl Cholera** (*Pasteurella Multocida*) **Infectious Laryngotracheitis** (ILT)	Inactivated ("killed") IB vaccines are injected into the flock after priming with live (IBNZA) in order to prevent drops in production and deterioration of egg quality. ***Note**: If killed IB vaccine is not used, then live IBNZA vaccine should be administered every 8 weeks during the lay period to maintain IB immune protection.* EDS will cause mainly drops in egg production and also deterioration of shell quality. In brown-egg layers, eggs are typically laid with a white colour instead. The vaccine is injectable, and it protects the birds throughout their productive life. EDS can be transmitted by waterfowl. Fowl Cholera is lethal, usually showing itself through symptoms such as swollen faces and wattles; or death of birds in the nests. Just like EDS, it can be a frequent visitor of free range operations, for it is transmitted by other animals, such as birds, cats and rodents. The vaccine is injectable and it is expected to protect the birds throughout production. ILT occurs mainly in the Auckland region. Birds will be panting, with breathing difficulties. Layers will drop egg production. This disease can kill the birds.

(*)This table illustrates the most common 'core' vaccinations required for New Zealand poultry, with their ACVM-approved vaccination programmes. Other diseases may occur. Please be advised that most vaccines come in vials of minimum 1000 doses. **The reader is advised to discuss the need and feasibility of such programmes with the veterinarian and also with the supplying hatchery or producer's association.**

Broilers: In general, broilers are not vaccinated in New Zealand, except for very rare occasions (Salmonella; coccidiosis in free range operations).

What is the easiest manner to vaccinate the free range chicken?

Vaccination is a natural procedure: Vaccines are no more than a measured and safe amount of bacteria or viruses (live or in pieces), which are given to the birds as a sample of what life may present to them in the future. When we vaccinate a flock of free range chickens, we are mimicking this natural exposure of the birds to a disease. Mostly, vaccines are given through spray or through the drinking water, as generally infecting organisms enter the birds through their oral or nasal cavities.

***Spray vaccination*:** dilute the vaccine into 0.3 – 1 litre of water (depending on the age of the birds) for every 1000 birds. Spray with a hand or backpack sprayer, 50-60 cm above the head of the birds.

Drinking water vaccination: for every 1000 birds, use 6 litres (age: 2 weeks); 11 litres (age: 4 weeks) or 30 litres (age: 16 weeks) of water. Empty the drinkers the previous night. Give this water as the first water of the day. The total amount of vaccine water should be consumed within 2-3 hours.

Water quality, for spray and drinking water vaccination: un-chlorinated water, free of disinfectants or cleaning residues. Please add milk (skim) on a rate of 5% in the drinking water. This stabilises the water for the survival of the vaccines. Or else use a commercial stabiliser. Vaccine should be dissolved in the water after the addition of milk or a stabiliser.

For more information on vaccines, water stabilisers and vaccination technique, please consult Pacificvet or talk to your hatchery.

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