

Use of PMV Vaccine in Pigeons.

The vaccine you have been supplied with is registered for use and contains a mild strain of living Paramyxovirus, PMV called. Deliberately infecting pigeons with this mild strain may allow them to develop an immunity against more

harmful PMV strains. The product is however registered for use in pigeons and is being used as an aid in protecting pigeons against PMV1 infection in the face of the current outbreak. It is not definitely known how safe this vaccine is in pigeons or how high the level of immunity is that the birds will form after it's use. However similar vaccines have been used in pigeons in the past and the general consensus is that this vaccine is unlikely to cause problems and can be expected to provide reasonable protection.

Following vaccination it is thought to take 10-14 days for immunity to develop. Some birds can be expected to show mild signs consistent with a PMV infection including lethargy, loss of appetite and wet droppings although the exact extent and severity of these symptoms is not known. If used during the breeding season the potential for symptoms is higher in nestlings. Although we do not expect severe side effects fanciers need to be aware that this is an off-label use and they therefore use this vaccine accepting the possibility of adverse reactions.

Instructions for use.

Some fanciers were concerned that a 'chook' vaccine was being used. What perhaps was not realised was that the vaccines commonly used and registered in Europe to immunise pigeons against PMV are derived from a PMV La Sota strain of the virus which also originated in chickens. Fanciers were divided as to whether or not to vaccinate their birds.

The main reasons for this is that, based on overseas information the vaccine is unlikely to be harmful and is likely to confer some immunity. Also a good way of controlling a disease is to vaccinate all vulnerable birds. After all, if all birds are immune there are no birds to infect and the disease is more likely to die out. A good example of a viral disease that was eradicated through vaccination is human small pox. With no humans left to infect, the disease disappeared.

Commonly Asked Questions

1. Will it be necessary to vaccinate regularly in the future?

Only if the current disease outbreak is not contained. Through failing to vaccinate, the pigeon community could potentially lose one way of controlling the disease.

Maintaining a large population of vulnerable birds gives plenty of opportunity for the virus to establish and persist. Vaccination reduces the incidence of disease, it does not increase it.

2. Will vaccinated birds become carriers?

No. Following vaccination an immunity is formed and the vaccine strain of virus is cleared from the system. A similar situation occurs after pigeon pox vaccination.

3. Will my birds be harmed through being vaccinated?

Unlikely. Similar vaccines have been used in pigeons overseas with minimal side effects. It is unlikely that our pigeons will react any differently. However, a transient reduction in fertility can be expected in some individual birds if birds are inoculated during the breeding season. In my opinion, a comparatively mild reaction compared to the risk of having stock birds die.

4. Will my birds be fully protected?

We don't know. What is likely is that a variable level of immunity will form. Some birds will probably be fully protected while others may only develop a partial immunity. Any level of immunity formed will help to decrease the severity of the disease. 5. What will happen to nestlings if I vaccinate their parents?

It is likely that nestlings will be exposed to the vaccine virus by their parents. Adverse reactions to this vaccine virus are more likely to occur in pigeons under 4 weeks of age. By choice, we would not routinely vaccinate during the breeding season but in the face of the current outbreak it may be better to risk some side effects in some nestlings in order to protect the stock birds.

6. What happens if I do not vaccinate?

It is likely your birds will have an increased vulnerability to infection. In other lofts where the virus has gained entry, mortalities of up to 100% have occurred.

7. Will the vaccine strain of virus become established in our pigeons?

Unlikely. It is possible that the vaccine virus has entered our pigeon population in the past. The vaccine is widely used in chickens. Where chickens and pigeons mix there is the potential for transfer of the vaccine virus. The vaccine virus can also be transferred by

people via clothing etc and other means. The virus has not previously established and if it has, has not caused harm. The vaccine virus does not have a harmful effect on wild birds.

8. Will vaccinated pigeons infect non-vaccinated pigeons?

Yes, for several weeks. Birds vaccinated with a live virus in a vaccine will shed that virus after a period of time and have the potential to infect other birds while they develop immunity. This is thought to occur for several weeks with this vaccine. A similar situation occurs following pigeon pox vaccination but birds vaccinated against pox are infectious for longer, up to six weeks.

9. Should I vaccinate my birds?

This is a decision for the fancier. It depends really on what risk he is prepared to accept. Fanciers should keep in mind that PMV is not a disease like pigeon pox. Pox is essentially a skin disease with very low mortality. If PMV gains entry, fanciers risk losing significant numbers of pigeons.

There was also some controversy over exactly which vaccine should be used. Basically two types are available in Australia. One is a killed La Sota origin vaccine. This is more expensive and also more complicated and time consuming to use as each bird has to be individually injected. The other vaccine is a live, non-disease causing strain of NDV (Newcastles Disease Virus) isolated from chickens. The DPI recommended the killed La Sota vaccine. This was the obvious choice for them as a similar vaccine was already registered for use in pigeons in the UK and also some authorities thought it gave better immunity. A potential problem with vaccine use is that vaccinated birds can still become infected with the disease for a period of time but not show any clinical signs. They felt this was less likely to occur with the live NDV4 vaccine. To date this clinic has supplied about 150 vials of vaccine. I would estimate that about 2500 pigeons have been inoculated. A good number of these were breeding birds with chicks in the nest. To date, we have had no adverse reactions either in adults or nestlings reported to us. Similarly, in lofts that have been vaccinated, we have not had any clinical disease. One loft that is of particular interest here is that of John Shore mentioned earlier. It was the NDV4 vaccine that we used to help protect his birds after their possible exposure to PMV from the grizzle hen. As mentioned earlier, after 4 weeks only one other bird out of several hundred has become unwell and this is recovering. This in turn will help us to decide if repeat booster vaccinations are required and if so at what time intervals in order to maintain a fully protected immunity. My understanding is that if these tests show that the available vaccines fail to provide sufficient protection and the disease is ongoing that recommendations can be made to the appropriate drug registration authorities to expedite the availability of proven overseas vaccines. These recommendations however will have to come from fairly high up in the appropriate government departments.

Current advice

In lofts that have had birds diagnosed with the disease our current advice is;

- 1) Separate unwell birds
- 2) Thoroughly clean the loft and spray with a virus -effective disinfectant
- 3) Test other birds in the loft and treat any other identified health problems
- 4) Immediately vaccinate all in-contact birds. Vaccination is certainly not a 'silver bullet' but it can be part of a coordinated attack. What I think is likely is that the vaccine will give variable immunity. In some birds this will be high and totally protective. In other birds the immunity that develops may be partial. As any immunity is a good thing and we are not (to date) seeing adverse reactions to the vaccine it seems reasonable and worthwhile to use them.
- 5) Provide good ongoing care to all birds. Regular multivitamins and probiotics in the drinking water are natural tonics. Birds that do not eat or drink enough to maintain their strength should be hand fed. Some birds can be expected to die. In birds that survive, those with a kidney and bowel involvement (i.e thirsty with profuse watery droppings) can be expected to take several weeks to recover while those with a central nervous system involvement (i.e loss of balance and head twisting) can take several months to recover. These birds however are still worth treating. The carrier state does not exist with this virus and so as birds recover the virus is cleared from their system. Some recovered birds however may not be of value for racing. My advice is to try and save them all. Birds whose development has been compromised so that they can not be effectively raced can be culled later.
- 6) As recovered birds can continue to shed the virus for up to 8 weeks, no bird should leave the property until after this time. Also preferably several birds should be tested (a

cloacal swab DNA test for the virus) and be shown to be negative before birds leave the property.

Outcome of exposure to the virus

The initial cases of PMV in pigeons involved fancy pigeons and in these lofts the mortality rates were very high, in some situations reaching 100%. As the virus spread further and became more established racing lofts became infected. The virus to date has behaved differently in racing lofts than in fancy lofts. Speaking to some of my friends who are avian vets overseas they described that the virus has a very high morbidity (many pigeons are infected) but a very low mortality (very few die). In their experience the two factors that affect the severity of the disease are;

1) How well the bird is at the time of exposure - birds on poor diets, with parasitic disease or already infected with another disease such as Chlamydia are much less able to cope with exposure to this viral disease. It may be that the excellent care, the fitness and the natural robustness of racing pigeons means that the virus causes less severe disease in them.

2) If the bird has any immunity - if the bird has had an earlier exposure and recovered or been vaccinated it may well have some immunity to the disease. Even if this immunity is not fully protective, even partial immunity may make the difference between a bird that is unwell for a few days then recovers and a bird that is overwhelmed by the virus and dies.

Other factors that have been shown to affect the outcome of exposure to this virus include the age of the bird at exposure, the method of entry of the virus into the bird and the initial dose of virus. The future

Two exotic parrot diseases, IPD (Internal Papilloma Disease caused by a Herpes virus) and PDD (Proventricular Dilatation Disease caused by a Borna virus) that gained entry to Australia in the early 1990's are still with us. They are not common but are still regularly diagnosed, particularly in certain parts of the country. For example, PDD seems more common in the parrot aviaries of south eastern Queensland. The thought is that these two diseases are probably under diagnosed because many general practitioner vets that do not see many birds are unfamiliar with them and as their diagnoses can be involved and expensive many owners of birds do not wish to investigate their birds' poor health to this extent. These diseases are now considered endemic and are now on an avian vets list of potential diagnoses when dealing with unwell parrots while prior to 1990 they were not. On the other hand, we diagnosed in our clinic a PMV4 infection in a flock of canaries experiencing high mortality in Melbourne's western suburbs two years ago. To my knowledge, this disease has not spread or at least has not been diagnosed in other canary flocks.

In an outbreak of PMV1 in California in pigeons approximately 6 years ago an attempt was initially made to control this through the identification of infected properties, quarantine of these properties and restriction of bird movement generally. This failed to control the problem and fresh cases continued to be recorded at a variable rate for 18 months. It was only when infected properties were depopulated that the outbreak was controlled.

The fact that the virus can be carried asymptotically by some bird species (such as water fowl) that have a natural tolerance to the virus but can then spread the disease to pigeons, the high rate of contact of pigeons from different lofts, the presence of feral pigeons and the fact that recovered birds can continue to shed the virus for up to 8 weeks and therefore be infective (without showing any symptoms themselves) combined with the likelihood that some fanciers may be reluctant to seek veterinary advice if they think their birds have PMV will all make eradication of this virus a challenge. Without a crystal ball, the future is hard to predict. A PMV1 gained entry to Europe and the UK in 1977 after seed contaminated with the droppings of feral pigeons was imported from Egypt. In these countries the disease could not be eradicated and regular vaccination against PMV1 is now part of routine health management programs for pigeons in these countries. One would think that the same parameters would apply in Australia as these countries - we are a modern western democracy that cares for our pigeons in a similar fashion. With this being the case one could predict that the disease is here to stay and we will also need to now regularly vaccinate our birds. A well known American avian vet in a recent email to me stated 'as you know, since PMV is there, it is there to stay, it will become endemic but then be controlled through vaccination'. In the two weeks following the initial diagnosis on the 1st. September, 26th infected properties were identified. In the next three weeks 15th.

7th October a further 15 properties were identified. At the time of writing (early October) this means that there are now over 40 properties where the disease has been diagnosed. Several new properties continue to be confirmed as infected each week. However when dealing with animal issues the only thing that is certain is that nothing is certain, and the

disease may simply die out. One thing that is perhaps certain however is that it will take several years without any fresh cases before vets and fanciers start to breathe a bit easier. We will all just have to wait and see together.