Allfarm AnimalHealth

Information sheet

# Using killed vaccines in poultry

## How to safely administer killed vaccines to poultry

If you have not used killed vaccines before, you should read this article carefully. It contains important details that you need to know about administration.

Please note that this document does not refer to the use of live vaccines, each of which may have a different method of administration. If you're using a live vaccine you must refer to the documentation that comes with the product.

## General vaccine information

1. Killed vaccines are sterile products. They are made sterile through chemical treatment.
2. Killed vaccines also contain adjuvants, which are products to ensure the chicken immune system reacts to the injection. You should always assume that these adjuvants can cause severe reactions if accidentally injected into humans.
3. Killed vaccines are suspended in liquid and are not dissolved. This means that contents settle when the pack is not used, and they should always be vigorously shaken prior to use. If the pack is transparent, you can determine if the vaccine has been resuspended and there are no clumps stuck to the sides. Expired / out of use-by date vaccines will not suspend properly.
4. Always be aware of the colour of the vaccine and never use vaccine if it changes colour. Colour changes can indicate growth of contaminating bacteria or fungi.
5. Always cover the cap of the master vaccine bottle when it's not being used.
6. Store unused vaccines in a refrigerator.
7. If these vaccines accidentally freeze, they should be discarded. This is because the ice crystals destroy the balancing chemicals in the suspension.
8. Killed vaccines can only be administered by injection.
9. Seek veterinary advice when it comes to managing a program annually. For example, boosting birds annually.
10. A vaccination plan needs to be sustained. Vaccines work most effectively when used regularly. Remember vaccines do not eradicate pathogens, they generally control.

## Vaccine guns and needles

1. You should consider whether you wish to purchase reusable or disposable vaccine guns. There are pros and cons with both types. Reusable guns require care and maintenance, as well as stricter hygiene protocols to ensure there is no contamination, but they can also be a worthwhile investment.
2. For small numbers of birds, we recommend an adjustable vaccine gun that can accurately deliver 0.4 to 0.5 mL and has a sealed feeder reservoir container.
3. Gun prices vary, and there are numerous suppliers – if you're considering reusable guns then ensure you can get replacement parts easily.
4. Plan in advance if you intend to use a reservoir system or a permanent tube-to-dispensing bottle attachment.

5. Check that you have the correct needles for the gun - some guns accept standard needles and others accept specialist needles called Leuer Lock. Use needles that are generally short and lock onto the gun. An example of a suitable needle is 18G by 1/2 inch.

## Vaccination hygiene

1. If you're employing reusable vaccine guns they must be washed before and after use, especially after storage. Guns can harbour bacteria, and these multiply to numbers which if injected can kill your birds.
2. You should change needles several times during each day.
3. Be careful to not contaminate the vaccine pack at any time. Swab the top with alcohol prior to use and afterwards. Ensure all vaccine needles are sterile at the start of use.
4. Remove needles from the gun, wash under running water, and store in methylated spirits. Replace the spirits every day needles are added or removed.
5. Never use blunt needles. Replace needles regularly.

## General safety advice

1. Always read the Material Safety Data Sheet for each vaccine before use.
2. Always check you have the MSDS nearby.
3. Any accidental injection of product in a human must be treated urgently by a medical practitioner. You must take the MSDS with you. Always assume that the vaccine can cause a severe reaction if administered to a human.
4. Vaccinating sites can be quite dusty, and so the wearing of masks by operators is highly recommended.

## Vaccination advice - general

1. Killed vaccines can be administered by subcutaneous or intramuscular injection.
2. Understand the minimum age at which birds can be vaccinated with the killed vaccine. Birds need fully functioning immune systems to respond to the injection.
3. Some birds require sensitisation to a live virus before vaccination with a killed vaccine. Understand your vaccine program thoroughly.
4. You must ensure you have a system that prevents injected birds from mixing accidentally with non-vaccinated birds.
5. Always vaccinate birds with empty crops. Birds should be withdrawn from feed the night prior to vaccination. Never vaccinate birds with full crops, as tipping the birds upside-down can dislodge food and water from the crops and this blocks the larynx, and birds suffocate.
6. If you need to give two killed vaccines then inject each into opposite sides of the breast; or inject one in the neck and the other into the muscle.

7. Injections can cause scars, and so it is advised that meat producing birds which will be processed for human consumption within a few weeks of injection should never be vaccinated into the breast.
8. Never mix two killed vaccines in the same delivery bottle. Always use one gun for each vaccine when administering at the same time.
9. Vaccination can be stressful to the birds and should not be done in hot weather.
10. Birds should not be vaccinated with a killed vaccine if they are already sick, unless under veterinary advice.
11. Energy and vitamin mixes support birds during the stress of vaccination. Consider support medications 48 hours before, and up to 3 days after vaccination. Examples or support medications are Solvita PLUS, Solvita, and Solaminovit. (all available on this website).
12. For inexperienced personnel, never inject birds by yourself. Always have one person holding the bird and a second managing the gun and vaccine.
13. It is your responsibility to manage birds carefully and within welfare conditions. You are responsible for ensuring birds do not smother.
14. Report unexpected reactions to vaccinating to your vaccine supplier.
15. Be able to identify batch numbers and use-by dates, and you a strongly advised to record these in a vaccination file.

## Vaccination advice for intramuscular injection

1. The person holding the bird should pick the bird up and hold the legs with their left hand and the wings (folded back behind the back) with their right hand.
2. Face the bird with the breastbone pointing outwards.
3. Locate the centre of the keel.
4. Hold the needle at right angle to the keel.
5. Then move the needle downwards over the breast muscle towards the wing by approximately one finger width (in a larger bird).
6. Insert the needle and inject the vaccine.
7. This method ensures that if the needle is inserted too far it hits the keel bone, and this avoids the vaccine being injected into the abdominal cavity.

## Vaccination advice for subcutaneous breast injection

1. The person holding the bird should pick the bird up and hold the legs with their left hand and the wings (folded back behind the back) with their right hand.
2. Face the bird with the breastbone pointing outwards.
3. Locate the centre of the keel.
4. Hold the needle at right angle to the keel.
5. Tent up the skin to form a pinch. Part the feathers so you see the skin clearly.
6. At the end of the pinch between your fingers is a V shape.
7. Insert the needle into the V - you will be under the skin but not in the muscle.
8. Inject the vaccine.

9. Make sure there is no leakage, which could indicate you have pushed the needle out the other side.

## Vaccination advice for subcutaneous under the neck skin injection

1. The person holding the bird should pick the bird up and hold the legs with their left hand and the wings (folded back behind the back) with their right hand.
2. Place the bird onto a table, keel down.
3. The injector then locates the neck.
4. Ensure the bird is not struggling.
5. Tent up the skin to form a pinch. Part the feathers so you see the skin clearly.
6. At the end of the pinch between your fingers is a V shape.
7. Insert the needle into the V - you will be under the skin but not in the muscle.
8. Inject the vaccine.
9. Make sure there is no leakage, which could indicate you have pushed the needle out the other side.

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