Best Practices For Vaccine Reconstitution And Hatchery Spray Administration. Contact Your Local Phibro Technical Team For Additional Assistance And Support.

The right vaccine may not be enough to protect your chickens. Correct application is paramount to immunizing the birds and maximizing your return on investment. The purpose of the spraying method is to deliver a full dose. It is applied to the eyes, mouth, nose and targets the upper trachea's mucosa.

1. Equipment For Spray Vaccination:

- 1. Use reliable hatchery spray equipment & follow the manufacturer's instructions.
- 2. The sprayer should be clean and without any disinfectant residue. Spray vaccination equipment should only be used for vaccine application, and rigorous cleaning should follow every procedure.
- 3. The sprayer's nozzle should be clean and free of mineral encrustation or pitting that disrupt the spraying volume or pattern.
- 4. Calibrate the dose and spray pattern using water (see below). After calibration flush the calibration fluids from the system.
 - a. All nozzles should spray the same amount of vaccine solution.
 Check the volume sprayed by every nozzle using a graduated cylinder.
 If a four-nozzle system is used, the system should be tested four times and the volume delivered by each nozzle should be observed.
 The total volume should be equal to the set dosage per box.



- 6. Utilizing a Plexiglass cover, check the spray pattern. If circular nozzles are used, ensure that the entire surface of the box is covered.
- 7. Operators must be properly trained on the vaccine administration and the system operation, from initial priming to regular maintenance, including springs and valves replacement, pump lubrication, and damaged or plugged valve substitution.
 - a. Plastic tubes should be replaced every month or whenever damaged, including if a change in color is noted.
 - b. The sprayer cover plays a critical role in ensuring a proper vaccination and should be changed if any damage is

observed.

500 ml

- 5. The droplet size is determined by the type of nozzle and air pressure. The correct droplet size can vary according to the vaccine to be administered.
 - a. For the application of respiratory viral vaccines, such as Bronchitis and Newcastle Disease, it is recommended to use a coarse spray between 120-150 µl.



2. Water For Vaccine Reconstitution And Spray:

- 1. Use clean, disinfectant-free water. If necessary, dechlorination material should be added.
- 2. Water volume: Phibro recommends following the sprayer manufacturer's directions of use. If the volume can be set, 25 mL to 30 mL for every 100 chicks is among our best recommended practices.
- 3. Water temperature: The water temperature should be maintained between 6°C to 10°C throughout the process. If ice is used to maintain the recommended temperature, make sure it is not in direct contact with the vaccine solution.



Material Checklist:

- 1. Water for reconstitution and spray in a clean container (stock solution)
- 2.10 mL sterile syringe with an 18 G needle
- 3. 3 mL syringe with an 18 G needle

Vaccine Preparation Room:

- 1. Use a dedicated room for the vaccine preparation.
- 2. The room temperature should be controlled and set to no more than 25°C.
- 3. The vaccine preparation surface should be clean and disinfected. **Vaccine Inspection:**
- Ensure the storage temperature is between 2°C and 8°C.
 Take out the number of doses (Tablets) to be used immediately.
 Check the vaccine batch and expiration date.

- 4. Water pH: Should be between 5.5-7.5
- 5. Adding dye to facilitate spray calibration and monitoring is recommended. Follow the dye manufacturer's instructions for a proper dilution. Only use a dye indicated for vaccine application.



4. Spray:

- 1. Add the stock solution to the sprayer container and keep the temperature consistent between 6°C to 10°C.
- 2. Prime the empty system and start spraying immediately.
- 3. Monitor the spray by checking the color on the chicks' tongue and eyes every 20-30 minutes.



4. Visually inspect the Tablets/Vials for any damage. If the seals or aluminum package is broken, do not use the vaccine. **Vaccine Reconstitution And Mixing - Tablets:**

1. Dye: Add dye (colorant) to the stock solution as per the dye manufacturer's instructions.

2. Use the number of doses (Tablets) according to the number of birds to be sprayed immediately.

3. Mixing: Force all the tablets out of the blister into the stock solution, wait until they are completely dissolved (about 3-5 min).

4. Gently mix the stock solution for 20 seconds with a plastic mixer.

Vaccine Reconstitution And Mixing - Vials:

- 1. Follow points 1 & 2 from above.
- 2. Remove the aluminum seal from the upper part of the vial.

3. Put on your gloves and disinfect the rubber port of the vial with sterile gauze containing 70% alcohol. Wait until the alcohol evaporates before proceeding to step 4.

4. Draw 3 mL to 5 mL of water from the stock solution using a 10 mL syringe with an 18 G needle.

5. Reconstitution: Inject 3 mL to 5 mL of water into the vial, gently shake the vial until all the vaccine cake has been dissolved and the liquid is homogeneous.

6. Mixing: Using the same syringe, retrieve all the reconstituted vaccine from the vial and transfer it into the stock solution.

7. Vial rinsing: Draw 3 mL to 5 mL of water for reconstitution, rinse and draw all the liquid from the vial. At this stage the vial should look completely clean from any vaccine remains.Remember that small quantities of the diluent left in the vial is one of the most common errors during any vaccine preparation.

8. Needle rinsing: Keep the needle inside the stock solution and gently draw diluent back and forth 2-3 times to rinse the needle.

9. Gently mix the stock solution for 20 seconds with a plastic mixer.10. Proceed to spray the chicks.



5. Vaccination Records:

Keep detailed records on the identification and destination of the vaccinated flock, the number of birds per house, the date and time of when the vaccine was applied, the duration of the vaccination procedure, the vaccine type (name), serial number, expiration date, place of purchase, and the names of operators who performed the vaccination. Document if any reaction is observed.



6. Caution:

1. Do not apply the vaccine under cold conditions. Avoid placing the chicks in a cold environment after the vaccination.

- 2. Use the complete dose as indicated. Reduced dosages may result in a decrease in protection or a failure to protect all vaccinated birds and is not recommended by Phibro.
- 3. As a general precaution, only vaccinate healthy birds.

4. Use all dissolved vaccines at once. Destroy any unused vaccine and containers. Discard as per local regulations.



- 6. Wash and disinfect hands after vaccine preparation and vaccine administration.
- 7. Keep out of the reach of children, non-properly trained personnel, and animals not intended to be vaccinated.

8. Make sure to coordinate regular visits of Phibro's Tech Support Team and establish a continued improvement program together.

Properly-vaccinated chicks are better protected against the diseases covered by the vaccines(s) applied.



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