

Good Practice Guide to AquaVac® Oral Vaccination of Fish

Oral vaccination is considered to be the preferred method of vaccination for fish. This is because it can, in theory, be administered to all fish in a population without any additional handling or stress to the fish involved.

AquaVac oral vaccines are the only fully registered and commercialised vaccines specifically designed for delivery in feed. The following best practice guide has been developed based upon the knowledge and experience that has been accumulated from the 10 years that these vaccines have been used in the field. This guide is designed to advise the best practise for oral vaccination in general terms. For detailed vaccination instructions, please consult the applicable product label.

Guiding Principles of AquaVac Oral Vaccination

1. Follow the specified label indications.
2. The vaccines are administered as a fixed dose per fish, similar to injection vaccines.
3. The amount of vaccine to be used depends on the number of fish, not their age or weight.
4. The vaccine should be incorporated into the appropriate amount of feed required for the fish in the specified dosing period.
5. The use of the vaccine can be tailored to the production plan and disease situation on the farm to achieve the optimum results for the farm.

Key Advantages of Oral Vaccination

1. Precise timing of vaccination to maximise protection at the time of highest disease risk.
2. Simultaneous vaccination of all fish in a site or production batch.
3. No handling or stress on the fish being vaccinated.

I. AQUAVAC ORAL VACCINATION PLANNING

AquaVac oral vaccines are designed to be used as part of a vaccination program against specific disease conditions in fish. Planning is a critical part of health management and disease prevention.

AquaVac oral vaccines can be administered to all fish on a farm within a defined period of time. This means that they can be used for either primary vaccination, as in the case of AquaVac IPN Oral, or as part of a booster program to extend or maximize the protection against long-lasting endemic diseases such as vibriosis or yersiniosis (ERM). The key elements in planning the use of AquaVac oral vaccines are:

- The temperature of the water must be in the normal physiological range for the species not at the extremes (e.g. salmonids 8 - 15 °C is ideal).
- The vaccination should be carried out within a few weeks of the main disease risk. The exact timing of vaccination, particularly booster vaccination, is dependent on a good understanding of the disease situation on the farm and the quality of any primary vaccination that has been done.

Details of these issues can be found in the series of Intervet/Schering-Plough Animal Health technical bulletins available on oral vaccination and vaccination programs.

II. PREPARING THE FISH FOR VACCINATION

- Only vaccinate healthy fish.
- Ensure that all fish are feeding and that the size of feed pellet is appropriate for all fish in the population.
- Treat any suspect disease problem.
- Ensure that the holding tanks and water quality are adequate for the required period of vaccination and subsequent period of immune induction.
- Do not stress or move the fish during the vaccination or immune induction period.

III. PREPARING FEED FOR VACCINATION

- Vaccine should be mixed with feed to achieve a homogeneous mix. It may be necessary to add extra oil to the feed to achieve this.

IV. DOSAGE AND ADMINISTRATION

[Please see specific product recommendations for the AquaVac vaccine selected prior to following guidelines below.]

1. Calculate the appropriate quantity of feed and vaccine for the population of fish. Prepare 100% of the daily feed as vaccine feed.
2. Weigh out quantity of feed. Place in mixer.
3. Mix.
4. Shake vaccine well before use.
5. Add appropriate quantity of vaccine.
6. Mix.
7. Allow mixed vaccine feed to settle and absorb all oil prior to bagging and using.
8. Store prepared vaccine feed in cool dry place.
9. Use vaccine feed within the period specified on the label.

V. VACCINATION

Feeding

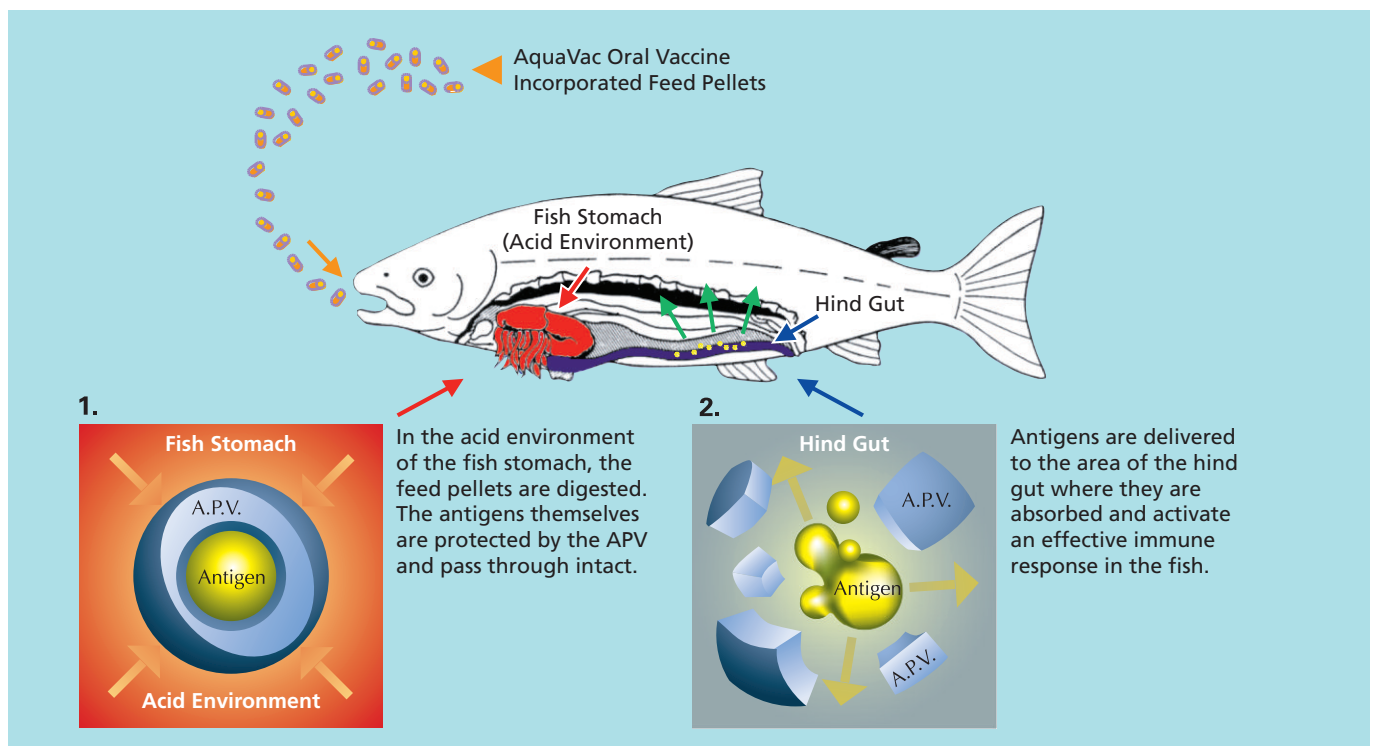
- Make sure feed is distributed in such a way that all fish in the population have access to it.
- Do not over-feed, ensure that all feed is consumed.
- Top off feeding with normal feed if required. Do not over-feed.

Intervet/Schering-Plough Animal Health's AquaVac Oral Vaccines

Intervet/Schering-Plough Animal Health's oral vaccination has been made possible by the development of several key components:

- Development of a system of protecting the vaccine antigens in the feed and in the stomach of fish.
- A unique method of encapsulating the antigens into the system while retaining the potency. This patented encapsulation technology is referred to as: **Antigen Protection Vehicle or APV (Figure 1)**. This system allows for the entrapment and protection of the most potent form of bacterial and viral antigens without any loss of potency.
- Developing appropriate vaccination strategies to utilize the new vaccines to provide optimum protection at an economic cost.
- High quality validated manufacturing processes to fully comply with GMP (Good Manufacturing Practice).

Figure 1. AquaVac Antigen Protection Vehicle or APV



NOTE: Specific product details of indications, registration license status, and trademarks, etc. may vary from country to country. Users should check the license status, local label and/or data sheet for exact specifications of usage or contact their local Intervet/Schering-Plough Animal Health representative.

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