

# AQUAVAC-ESC®

EDWARDSIELLA ICTALURI VACCINE / AVIRULENT LIVE CULTURE

For the prevention of ESC disease (enteric septicemia of catfish) due to *E. ictaluri* infection

## ADVANTAGES

- **Highly effective** — Fish vaccinated with AQUAVAC-ESC have shown significantly lower mortality than non-vaccinates<sup>1</sup>
- **Field-proven performance** — Used successfully on U.S. catfish farms since 2003
- **Safe** — Use with confidence in catfish fry 7 days post-hatch or older<sup>2</sup>
- **Easy to use** — Compatible with modern hatchery-management practices; may be added to transport tanks before stocking fry
- **Exclusive protection** — First and only modified-live vaccine licensed by USDA for ESC in catfish.



AQUAVAC-ESC contains the known avirulent strain of *Edwardsiella ictaluri*, designated RE-33. The product has been shown to provide significant protection from disease and mortality when vaccinated catfish are challenged with common virulent or wild-type isolates of *E. ictaluri*.<sup>2</sup> Use as part of a comprehensive fish health management program.

Supplied in 10 X 100,000-dose units.

<sup>1</sup> USDA/ARS Aquatic Animal Health Research Laboratory, Auburn, AL, 2004-2005

<sup>2</sup> Data on file, Intervet/Schering-Plough Animal Health.

## READ IN FULL

## EDWARDSIELLA ICTALURI VACCINE Avirulent Live Culture AQUAVAC-ESC®

## DESCRIPTION

AQUAVAC-ESC contains the known avirulent strain of *Edwardsiella ictaluri*, designated RE-33, as a frozen preparation. AQUAVAC-ESC is administered to catfish as a timed bath treatment. AQUAVAC-ESC has been shown to provide significant protection from disease and mortality when vaccinated catfish are challenged with common virulent or wild-type isolates of *E. ictaluri*.

## INDICATIONS FOR USE

AQUAVAC-ESC is indicated for the prevention of ESC disease (enteric septicemia of catfish) in catfish due to *E. ictaluri* infection. Catfish should be healthy and free of disease at the time of vaccination. Sick or weak catfish may not develop adequate immunity. Catfish should be at least 7 days of age post hatch or older at the time of vaccination. For maximum benefit, catfish should be vaccinated for a minimum of two minutes at least 14 days prior to anticipated exposure to ESC disease. Vaccination is not recommended when water temperatures are below 21°C (70°F) or above 29°C (85°F).

## VACCINATION PROGRAMS

AQUAVAC-ESC is intended for use in a comprehensive program of catfish health management and producers are encouraged to consult with their veterinarian or other fish health professionals before use. AQUAVAC-ESC can be applied as a bath at any time during the production cycle. AQUAVAC-ESC is easily administered at any time catfish are being handled and can be integrated into routine catfish handling practices such as grading, inventorying, sorting, splitting, hauling, moving or ponding. The most common application is a bath treatment of 7 days post hatch fry in a transport tank before stocking catfish into nursery or fingerling ponds.

## DOSAGE

The dosage of AQUAVAC-ESC is based on total catfish weight and the volume of water in which they are vaccinated. Each vial of AQUAVAC-ESC is sufficient to vaccinate 7.5 pounds of catfish in 5 gallons of water. When applied to fry at 7 days of age post hatch (an average size of 13,000 catfish per pound or 29 catfish/gram or 812 catfish per ounce), each vial of vaccine is sufficient to vaccinate 100,000 fry in 5 gallons of water.

When vaccinating 7 days post hatch fry, the following tables should be used to determine the proper dosage and use of AQUAVAC-ESC.

Table A

Number of 7 Day Post Hatch Fry to be Vaccinated as a Single Group					
	200,000	400,000	600,000	800,000	1,000,000
Vials of Vaccine	2	4	6	8	10
Gallons of Water	10	20	30	40	50

When vaccinating catfish older than 7 days post hatch, each ten-pack of AQUAVAC-ESC vaccine is sufficient to vaccinate 75 pounds of catfish in 50 gallons of water as described in "Administration". The following table can be used to help determine the proper dosage and use of AQUAVAC-ESC.

Table B

Pounds of Catfish to be Vaccinated as a Single Group					
	15	30	45	60	75
Vials of Vaccine	2	4	6	8	10
Gallons of Water	10	20	30	40	50

## ADMINISTRATION

Prior to vaccination, ensure that all nets, buckets, tanks and other equipment are thoroughly cleaned and properly disinfected and rinsed prior to use. Ensure that all troughs or hauling tanks have been cleaned and flushed free of any excess feces or feed. To reduce stress, it is recommended that the catfish not be fed for 3 to 4 hours prior to vaccination. Use standard methods to determine the total weight of each group of catfish to be vaccinated.

*Caution – because the dosage of AQUAVAC-ESC is based on total catfish weight, it is important that the catfish be inventoried as accurately as possible immediately prior to vaccination to ensure full efficacy of the vaccine. Refer to Table A or Table B as guidelines to determine the amount of vaccine and volume of water needed for vaccinating each group of catfish.*

**AQUAVAC-ESC should be kept frozen at or below -60°C (-76°F). If stored frozen at -20°C (-4°F) (non-frost-free freezer), the product must be used within 7 days or discarded. Caution – do not thaw AQUAVAC-ESC until immediately prior to use.**

## Tank Vaccination during transport.

1. Calculate the water volume of transport tank and determine the volume of water for vaccination based on guidelines in Table A or Table B. Fill the transport tank with clean water to this level.
2. Turn on oxygen to transport tank. Ensure the air stones are all working and adequate oxygenation is being provided to all areas of the tank.
3. Add catfish to be vaccinated to the transport tank.
4. Thaw the number of vials of vaccine needed by placing vials into a 79°F waterbath.
5. Immediately add thawed vaccine to transport tank, pouring evenly across the surface of the tank. Mix gently but thoroughly.

6. Wait at least two minutes.
7. After two minutes, fill the transport tank with at least an equal amount of water and do not dilute further for at least 15 minutes. Haul to the nursery or fingerling pond for stocking. The usual precautions must be taken to ensure fish in the transport tank are properly tempered to the pond water temperature before discharge.
8. Discharge catfish and vaccine solution into pond and observe for any signs of stress.
9. Begin feeding as usual.

## STORAGE CONDITIONS

AQUAVAC-ESC should be stored frozen at or below -60°C (-76°F) prior to use. If AQUAVAC-ESC is stored frozen at -20°C (-4°F) (non-frost-free freezer), the product must be used within 7 days or discarded. Once AQUAVAC-ESC has been thawed, it must be used immediately. At no time should AQUAVAC-ESC be exposed to direct sunlight or excessive heat above ambient air or water temperatures.

## PRECAUTIONS AND WARNINGS

1. VACCINATE ONLY HEALTHY CATFISH. DO NOT VACCINATE WITHIN 21 DAYS BEFORE HARVEST. Although disease may not be evident, concurrent disease and adverse environmental conditions may cause complications or reduce effectiveness of AQUAVAC-ESC vaccine.
2. WITHHOLD ALL CHEMICAL OR ANTIBIOTIC TREATMENTS in the water or feed for 3 days before and 5 days after vaccination.
3. USE AQUAVAC-ESC VACCINE IMMEDIATELY FOLLOWING THAWING.
4. DO NOT ATTEMPT TO STORE OR REUSE THE VACCINE ONCE IT HAS BEEN THAWED. Each vial of AQUAVAC-ESC vaccine is designed and intended for use in a single application.
5. DILUTE AQUAVAC-ESC VACCINE ONLY AS DIRECTED. Any changes in the recommended dilution rate may cause the product to become ineffective.
6. ENSURE ACCURACY OF INVENTORIES PRIOR TO VACCINATION. Because the dosage of AQUAVAC-ESC is based on total catfish weight, it is important that the catfish be inventoried as accurately as possible immediately prior to vaccination to ensure full efficacy and safety of the vaccine.
7. DO NOT ATTEMPT TO VACCINATE MORE CATFISH THAN DIRECTED OR OTHERWISE CHANGE THE DOSAGE OF AQUAVAC-ESC. To do so can cause the product to become ineffective.
8. USE THE ENTIRE CONTENTS OF EACH VIAL WHEN FIRST THAWED AND OPENED.
9. WHEN VACCINATION HAS BEEN COMPLETED, BURN ALL CONTAINERS AND ANY UNUSED CONTENTS.
10. AVOID CONTACT OF OPEN WOUNDS WITH THE VACCINE. WASH HANDS THOROUGHLY AFTER USING THE VACCINE.
11. ANY ADVERSE OR UNUSUAL EFFECTS ASSOCIATED WITH THE USE OF AQUAVAC-ESC SHOULD BE IMMEDIATELY REPORTED TO INTERVET INC. AT THE FOLLOWING TELEPHONE NUMBER: 1-800-441-8272.
12. AQUAVAC-ESC IS INTENDED FOR USE IN ANIMALS ONLY.

## NOTICE

AQUAVAC-ESC has undergone rigid potency, safety and purity tests, and meets Intervet Inc. and USDA requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual catfish, environmental conditions following vaccination and the severity and timing of field exposure to *E. ictaluri* and ESC disease following vaccination. Therefore, directions should be followed carefully to ensure safe use and optimum performance.

AQUAVAC-ESC is not hazardous when used according to directions and poses no known human health risk for healthy individuals. A material safety data sheet (MSDS) is available upon request. This and any other consumer information can be obtained by calling Intervet Customer Service at 1-800-441-8272 or 1-302-934-8051.

## RECORDS

The user is advised to keep a written record of vaccination including vaccine, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the breed, lot number, pond number, population, age, average size and total weight of catfish vaccinated; names of operators administering the vaccine; water temperature and environmental conditions as well as observations on the general health of the animals at the time of vaccination; and any unusual reactions or conditions observed.

## HOW SUPPLIED

10 vials per pack

Ordering Number  
033993

The use of this vaccine is subject to applicable federal, state and local laws and regulations.

## USE ONLY AS DIRECTED

**STORE VACCINE FROZEN AT OR BELOW -60°C (-76°F)  
If stored frozen at -20°C (-4°F) (non-frost-free freezer),  
the product must be used within 7 days or discarded.  
DO NOT EXPOSE TO EXCESSIVE HEAT  
THIS PRODUCT IS NON-RETURNABLE**



QUALITY Tested for Purity, Potency, and Safety

## INTERVET INC.

Millsboro, Delaware U.S.A.  
U.S. Veterinary License No. 286  
www.intervetusa.com • 1-800-441-8272

Manufactured and Printed in U.S.A.  
Patent No. 6,019,981

Rev. 78004