



COLLEGE OF AGRICULTURE & LIFE SCIENCES
**Animal & Comparative
Biomedical Sciences**

Aquaculture Pathology Lab
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FINAL REPORT

Confidential, Disseminate on a Need-To-Know Basis Only

Owner:

OOO "Arsal" (Arsal, LLC)

Animal Location:

OOO "Arsal" (Arsal, LLC)
Address: bld. 1C, Gagarin Str. Yarovoye, Altai region,
658839

Report Recipient:

OOO "Arsal" (Arsal, LLC)
Mr. Maxim Soklakov
1C, Gagarin Str. Yarovoye, Altai region, 658839
epm@artemia-arsal.ru, arsal.export2@gmail.com

Case number: 25-1075

Date Collected: 2025

Collected By: Mr. Evgeniy Didenko – senior specialist

NAN: N/A

Purpose: TO GET IMPORT PERMIT WITH
ECUADORIAN AQUACULTURE AUTHORITY
(SUBSECRETARIA DE CALIDAD E INCUIDAD)

Reference Number: 02301066

Country Origin/Destination: N/A

Date Received: November 10, 2025

Date Completed: November 24, 2025

NOTE: Condition of the sample(s) was good unless otherwise noted. Pooling info: N/A



Case No: 25-1075

Table 1: Summary of Results for PCR Testing of Systemic Pathogens

Pool ID	Sample Name	Identification no. (pond, tank, etc.)	Lot/Batch No.	Species	Age	Specimen Type	Sex	WSSV	IHHNV	DIV1	TSV	YHV	IMNV	PvNV	MrNV	CP/ <i>A. astaci</i>
25-1075	Brine-shrimp eggs/ <i>Artemia salina</i> cysts	Big Yarovoye Lake (Russia)	Lot 19/25-80 SAFE BAG No.02301066	<i>Artemia salina</i>	At the stage of cysts	Artemia/ Cysts	N/A*	ND†	ND	ND	ND	ND	ND	ND	ND	ND

NOTE: *N/A – Not Available †ND – Not Detected Pooling info: N/A

Table 2: Summary of Results for PCR Testing of Enteric Pathogens

Pool ID	Sample Name	Identification no. (pond, tank, etc.)	Lot/Batch No.	Species	Age	Specimen Type	Sex	AHPND/ EMS	EHP	NHP-B
25-1075	Brine-shrimp eggs/ <i>Artemia salina</i> cysts	Big Yarovoye Lake (Russia)	Lot 19/25-80 SAFE BAG No.02301066	<i>Artemia salina</i>	At the stage of cysts	Artemia/ Cysts	N/A*	ND†	ND	ND

NOTE: *N/A – Not Available †ND – Not Detected Pooling info: N/A

Protocols used:

WSSV: Real-time PCR method described by Durand and Lightner (J. Fish Dis., 2002, 25: 381-389).

IHHNV: Real-time PCR method described by Tang & Lightner (Dis. Aquat. Org., 2001 44: 79-85).

SHIV/DIV1: Real-time PCR method described by Qiu et al. (J. Invertebr. Pathol. 2018, 154, 95-101).

TSV: Real-time RT-PCR method described by Tang et al. (J. Virol. Methods, 2004, 115: 109-114).

YHV: Real-time PCR method described by Moody N.J.G (2023). WOA validation report for the YHV1 real-time PCR (<https://www.woah.org/app/uploads/2024/03/validation-report-template-yhv1.pdf>).

IMNV: Real-time RT-PCR modified from Andrade et al. (Aquaculture, 2007, 264: 9-15).

PvNV: Real-time PCR method developed in the University of Arizona-Aquaculture Pathology Laboratory, *Unpublished*.

MrNV: Real-time PCR method described by Zhang H., Wang J., Li L., Zhang J., Bonami J.-R. & Shi Z. (2006). Quantitative relationship of two viruses (MrNV and XSV) in white tail disease of *Macrobrachium rosenbergii*. Dis. Aquat. Org., 71, 11–17.

AHPND/EMS: Real-time PCR method described by Han et al. (Aquaculture 2015, 442: 12-15).

EHP: Real-time PCR method described by Liu et al. (J. Invertebr. Pathol. 2018, 151: 191-196).

NHP-B: Real-time PCR method described by Aranguren et al. (Aquaculture, 2010, 307: 187-192).

C.P./ *A. astaci*: Real-time PCR method described by Strand D.A., Jinnerot T., A Spán A., Viljamaa-Dirks S., Heinikainen S., Rolén E., & V Rålstad T. (2023). Molecular detection of *Aphanomyces astaci* – An improved species specific qPCR assay. J. Invertebr. Pathol., 201, 108008. doi: 10.1016/j.jip.2023.108008. Epub 2023 Oct 18. PMID: 37863282.

UAZ Policy on certification: This report provides our findings on the samples submitted to our laboratory for examination, health status evaluation, disease diagnosis, or pathogen detection. It is our policy and intent to perform the most appropriate assay(s) for the determination of the health/pathogen status of all specimens submitted to our laboratory.

PCR: disclaimer: This report provides our findings on the samples submitted to our laboratory for pathogen detection.

The **UAZ Aquaculture Pathology Lab** is an **OIE** (Office International des Épidémiologies or the Organization or World Animal Health Organization) Reference Laboratory for Acute Hepatopancreatic Necrosis Disease, *Hepatobacter penaei* (NHP), Infectious Hypodermal and Hematopoietic Necrosis, Taura Syndrome, and White Spot Disease. The **UAZ Aquaculture Pathology Lab** is also a **U.S.D.A. A.P.H.I.S.** Approved Aquaculture Laboratory for export testing for White Spot Disease, Taura Syndrome, Infectious Hypodermal and Hematopoietic Necrosis, Infectious Myonecrosis, Yellowhead Disease, Acute Hepatopancreatic Necrosis Disease, Crayfish plague (*Aphanomyces astaci*), White tail disease (*Macrobrachium rosenbergii* nodavirus), and Necrotizing hepatopancreatitis (*Hepatobacter penaei*).

Tests conducted by:


Jarvin Nipales
Research Technician

Results authorized by:


Dr. Arun K. Dhar
Director
Aquaculture Pathology Laboratory
Office: 520-621-8727

