State of Utah

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Deputy Commissioner

LEANN HUNTING
Director, Animal Industry

DAN CHRISTENSEN, DVM
State Veterinarian

16 January 2024

Brook Knotts
Sunfish Fish Farm
4210 N 2300 E
Beaver, UT 84713

Dear Mr. Knotts:

You requested the Utah Department of Agriculture and Food (UDAF) collect whole fish and ship them to Arkansas Department of Agriculture for health testing. Bluegill, hybrid bluegill, largemouth bass, channel catfish, fathead minnow, smallmouth bass, wiper, and black crappie were collected on November 28, 2023 and shipped overnight to Arkansas Department of Agriculture for processing.

I received the fish health inspection reports from Arkansas Department of Agriculture (attached) and have assigned fish health approval number FHA222270524UT to Sunfish. This number is valid for the sale of bluegill, hybrid bluegill, largemouth bass, channel catfish, fathead minnow, smallmouth bass, wiper, and black crappie in Utah through January 28, 2025.

Please call (801) 870-9339 if you have any questions.

Best Regards,

Xavier Matheson

Xavier Matheson
Fish Health Program
Utah Department of Agriculture and Food

Arkansas Department of Agriculture
Aquaculture Laboratory

Final Fish Inspection Testing Report: 23-AQ117

1 Natural Resources Drive, Little Rock, AR 72205 Phone: 501-823-1730

Standard Report

Sampling Date: November 28, 2023
Processing Date: November 29, 2023
Verification Date: December 27, 2023
Inspection Report Date: January 2, 2024

Production Facility Name: Sunfish Fish Farm
Contact: Brook Knotts
Address: P.O. Box 1335, Salem, UT 84653
Phone: (801) 376-3571

Sample Collector: Xavier Matheson Fish Health Specialist, 801-803-3056.

APHIS/AVIC: Dr. Lee R. Hall, 176 North 2200 West, Ste. 230, Salt Lake City, UT 84014, 801-524-5010.

Testing performed on all fish species: VHSV, SVCV, IHNV, and IPNV on FHM and BF-2 cells; BF and ERM on BHI agar; observation for signs of HS.

Other testing performed depending on fish species: LMBV on FHM cells (centrarchids), CCV on CCO cells (Ictalurids), ESC on BHI agar (Ictalurids), STC on BHI-blood agar (tilapia species); *Key for all abbreviations on the back.*

Fish species	# of samples	Size (cm)	Results from testing performed
BG	60	4.0-7.7	Specific pathogens listed were not detected or observed
BGxGRS	60	5.3-11.2	Specific pathogens listed were not detected or observed
BC	60	5.5-8.4	Specific pathogens listed were not detected or observed
LMB	60	7.8-12.8	Specific pathogens listed were not detected or observed
CC	60	12.6-19.7	Specific pathogens listed were not detected or observed
FHM	60	2.7-3.9	Specific pathogens listed were not detected or observed
SMB	60	9.0-11.5	Specific pathogens listed were not detected or observed
WBxSTB	60	11.8-16.5	Specific pathogens listed were not detected or observed

Comments: Testing was performed according to Laboratory standard operating procedures and Bluebook standards. This is the fourth inspection for Sunfish Farms. The Sunfish farm has been inspected annually for viruses (at least 150 fish per inspection). This is their third inspection involving smallmouth bass and hybrid striped bass. The fish appear healthy and in good condition.

Nilima N. Renukdas

Nilima N. Renukdas, Ph.D., AFS/FHS Fish Health Inspector
Email: nilima.renukdas@agriculture.arkansas.gov

Arkansas Department of Agriculture
Aquaculture Laboratory

Key to abbreviations

Viruses

VHSV – Viral Hemorrhagic Septicemia Virus
SVCV – Spring Viremia of Carp Virus
IHNV – Infectious Hematopoietic Necrosis Virus
IPNV – Infectious Pancreatic Necrosis Virus
CCV – Channel Catfish Virus
LMBV – Largemouth bass virus

Bacteria

BF – Bacterial Furunculosis (*Aeromonas salmonicida*)
ERM – Enteric Redmouth (*Yersinia ruckerii*)
ESC – Enteric Septicemia of Catfish (*Edwardsiella ictaluri*)
STC – Streptococcus spp.

Parasites

HS – Heterosporosis (*Heterosporis* spp.)

Detection tests

FHM – Fathead minnow cells (cell line used to grow viruses - sensitive to VHSV, SVCV and IHNV from various fish species)
BF-2 – Bluegill fin -2 cells (used to grow viruses – sensitive to VHSV and IPNV from various fish species)
CCO – Channel catfish ovary cells (used to grow virus – sensitive to CCV from Ictalurid species)
BHI – Brain heart Infusion agar (used to grow bacteria that cause – BF, ERM and ESC from various fish species). BHI with blood (used to grow STC from Tilapia species)

Fish species

GS	Golden shiner	*Notemigonus crysoleucas*	LMB	largemouth bass	*Micropterus salmoides*
FHM	fathead minnow	*Pimephales promelas*	SMB	smallmouth bass	*Micropterus dolomieu*
GF	goldfish	*Carassius auratus*	YP	yellow perch	*Perca flavescens*
Koi or CAP	koi/common carp	*Cyprinus carpio*	WE	Walleye	*Sander vitreus*
GC	grass carp	*Ctenopharyngodon idella*	CCF	Channel catfish	*Ictalurus punctatus*
BG	bluegill	*Lepomis macrochirus*	CCFxBCF	hybrid catfish	*Ictalurus punctatus x Ictalurus furcatus*
RE	redear	*Lepomis microlophus*	BRB	Brown bullhead	*Ameiurus nebulosus*
RExBG	hybrid redear	*Lepomis microlophus x Lepomis macrochirus*	STB	striped bass	*Morone saxatilis*
GRS	green sunfish	*Lepomis cyanellus*	WB	white bass	*Morone chrysops*
BGxGRS	hybrid bluegill	*Lepomis macrochirus x Lepomis cyanellus*	WBxSTB	Hybrid striped bass	*Morone chrysops x Morone saxatilis*
PSS	Pumpkin seed sunfish	*Lepomis gibbosus*	TIL	Tilapia	*Oreochromis* spp.
BC	black crappie	*Pomoxis nigromaculatus*	PFE	Paddle fish eggs	*Polydon spathula*
WC	white crappie	*Pomoxis annularis*	GAM	Gambusia	*Gambusia affinis*
BCxWC	hybrid crappie	*Pomoxis nigromaculatus x Pomoxis annularis*	ES	Emerald shiner	*Notropis atherinoides*
ESM	Eastern Silvery Minnow	*Hybognathus regius*			

End of the report

Arkansas Department of Agriculture
Aquaculture Laboratory

Key to abbreviations – CA, MD, MI, NJ and VT

Viruses
- VHSV – Viral Hemorrhagic Septicemia Virus
- SVCV – Spring Viremia of Carp Virus
- IHNV – Infectious Hematopoietic Necrosis Virus
- IPNV – Infectious Pancreatic Necrosis Virus
- GSV – Golden Shiner Virus
- FHMNV – Fathead Minnow Nidovirus
- LMBV – Largemouth Bass Virus
- CCV – Channel Catfish Virus
- KHV – Koi Herpes Virus

Bacteria
- BF – Bacterial Furunculosis (*Aeromonas salmonicida*)
- ERM – Enteric Redmouth (*Yersinia ruckerii*)
- ESC – Enteric Septicemia of Catfish (*Edwardsiella ictaluri*)
- STC – *Streptococcus* spp.

Parasites
- HS – Heterosporosis (*Heterosporis* spp.)
- AT – Asian tapeworm [*Schyzocotyle* (*Bothriocephalus*) *achieilognathi*]

Detection tests
- CPE – Cytopathic effects of viruses on cell cultures
- FHM – Fathead minnow cells (cell line used to grow viruses - sensitive to VHSV, SVCV, IHNV, GSV, FHMNV and LMBV from various fish species)
- BF-2 – Bluegill fin -2 cells (used to grow viruses – sensitive to VHSV, IPNV, and LMBV from various fish species)
- CCO – Channel catfish ovary cells (used to grow virus – sensitive to CCV from Ictalurid species)
- qPCR – quantitative Polymerase Chain Reaction (specific DNA sequence test for KHV in goldfish and common carp varieties)
- BHI – Brain heart Infusion agar (used to grow bacteria that cause – BF, ERM, and ESC from various fish species), BHI with blood (used to grow *Streptococcus* spp. from Tilapia species)

Fish species

GS	Golden shiner	*Notemigonus crysoleucas*	LMB	largemouth bass	*Micropterus salmoides*
FHM	fathead minnow	*Pimephales promelas*	SMB	smallmouth bass	*Micropterus dolomieu*
GF	goldfish	*Carassius auratus*	YP	yellow perch	*Perca flavescens*
Koi or CAP	koi/common carp	*Cyprinus carpio*	WE	Walleye	*Sander vitreus*
GC	grass carp	*Ctenopharyngodon idella*	CCF	Channel catfish	*Ictalurus punctatus*
BG	bluegill	*Lepomis macrochirus*	CCFxBCF	hybrid catfish	*Ictalurus punctatus x Ictalurus furcatus*
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BC	black crappie	*Pomoxis nigromaculatus*	PFE	Paddle fish eggs	*Polydon spathula*
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End of the report

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End of the report

Inspection Paperwork Guidance
Fall 2023

Reports sent to you include those checked below:

- ☒ **Standard report -- for inspected fish going to most states.**
- ☒ **Five State Report – use only for inspected fish going to California, Maryland, Michigan, New Jersey, and/or Vermont. Sending this report to states other than these five could encourage those states to start requiring additional inspection testing resulting in an increased potential for fish shipment restrictions, more inspection work, and higher inspection costs.**
- ☐ **International report – use for inspected fish going mostly to Canada or one of the European countries.**
- ☐ **New York form – New York form – the fish collector is responsible to partially fill in and sign this report.**
- ☐ **Wisconsin forms – your veterinarian is responsible to partially fill in and sign this report.**
- ☒ **An invoice.**

Comments:

- **New York forms. You must send it to the State of New York. Be sure the State of New York has your form on record before sending fish.**
- **APHIS/OIE-approved standards serve as guidelines for all inspections where fish are collected by APHIS-approved veterinarians.**
- **Copies of the reports will be sent to the veterinarian that supervised the sample collection and if any "reportable" viruses are found a copy will be sent to the APHIS Veterinarian in charge of the State's inspection results.**
- **If an APHIS-approved veterinarian does <u>not</u> collect your fish, then APHIS/OIE standards do not apply. Any "reportable" viruses found will still be reported to the APHIS Veterinarian in charge of the State's inspection results. Selling fish, not collected by a vet, to a farm with an APHIS/OIE standard certification effectively negates that farm's inspection status and pathogen-free history.**
- **No pathogens have been found on fish from your farm within the last three years that could affect shipments to the areas you have listed on your Chain of Custody and Submission Form.**

Please look at the received inspection forms carefully and let us know if there is anything that is questionable or needs to be changed. We will try to help with State or Federal inspection testing issues.

Nilima N. Renukdas, Ph.D.
AFS/FHS Fish Health Inspector
Email: nilima.renukdas@agriculture.arkansas.gov

Sunfish Fish Farm