

Viral Hemorrhagic Septicemia in the Great Lakes Region

Viral hemorrhagic septicemia (VHS) virus is an extremely serious pathogen of fresh and saltwater fish, and is causing an emerging disease in the Great Lakes region of the United States and Canada. VHS has been found specifically in the waters of Lake Huron, Lake St. Clair, Lake Erie, Lake Ontario, and the St. Lawrence River. Due to its high mortality and severe economic consequences, VHS is classified as a reportable disease by the World Organization for Animal Health (OIE).

In the past, VHS was thought to be a concern only for trout and a few other freshwater fish raised for commercial aquaculture in Europe. However, the recent outbreak in the Great Lakes region appears to be a new strain of the virus. This new strain is responsible for die-offs in the following species: muskellunge, smallmouth bass, northern pike, freshwater drum, gizzard shad, yellow perch, black crappie, bluegill, rock bass, white bass, redbreast sucker, bluntnose sucker, round goby, and walleye.

How VHS was transferred to the Great Lakes or how long it has been in the ecosystem is not known. The disease transmits easily between fish of all ages. Mortality is highest at low water temperatures between 37 and 54 degrees Fahrenheit. Some fish will show no external signs while others show signs that include bulging eyes, bloated abdomens, inactive or overactive behavior, and hemorrhaging in the eyes, skin, gills, and at the base of the fins. Infected fish may also have lesions that look like those caused by other fish diseases. Therefore, testing is necessary to determine whether the fish is infected.

Sport fishermen and recreational boaters are asked to adhere to good biosecurity practices while fishing or boating in waters where VHS has been found. Thoroughly clean fishing equipment, boats, and trailers before using them in a new body of water and do not transfer fish from one body of water to another.

How You Can Protect Your Facility From VHS

Although VHS has yet to be detected in aquaculture facilities, individuals responsible for the movement of VHS-susceptible species, regardless of origin, should take these steps to protect their facilities:

1. Request a health certificate stating that those fish have been tested and are free of VHS prior to movement.
2. Enact appropriate biosecurity measures within your facility to prevent the spread of this, and other, infectious pathogens. Some elements of a biosecurity plan include:
 - Cleaning and disinfection
 - Controlling the movements of people, animals, vehicles, and equipment
 - Isolating new and returning (e.g., brood stock) fish
 - Controlling effluent discharges
 - Conducting audits to evaluate implementation and effectiveness of the biosecurity plan.
3. Stay alert for more information about the disease, particularly the names of species newly found to be susceptible.

If you suspect VHS, you should immediately report all findings to the State department of agriculture or fish and game department.

Additional Information

For more information about VHS and steps to protect your facility, please contact:

Dr. Jill Rolland
Telephone: (301) 734-7727
E-mail: Jill.B.Rolland@aphis.usda.gov

Dr. Gary Egrie
Telephone: (301) 734-0695
E-mail: Paul.G.Egrie@aphis.usda.gov

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.