

Japan's comments on the Report of the meeting of the OIE Aquatic Animal Health Standards Commission in February 2022 (Part B)

(2. THE OIE AQUATIC ANIMAL HEALTH CODE – 2.2 Text for Member Information)

Proposed comments on 2.2.1.1. Infection with carp edema virus (CEV)

(Comments)

Based on the following two reasons, Japan believes that CEV does not meet OIE's criteria for an emerging disease and disagrees with regarding CEV as an emerging disease.

- 1) CEV does not meet a condition of a disease "which has a significant impact on aquatic animal". As mentioned in the OIE Aquatic Commission's September 2021 meeting report, "the severity of the impacts is unclear" for CEV. The OIE Aquatic Commission's February 2022 meeting report refers to information on the severity of infection with CEV in some regions of the world, but the report does not include information on the rate of demonstrating severe signs in carp infected with CEV. Specifically, Marsella *et al.* 2021, Tolo *et al.* 2021, and Pikula *et al.* 2021 papers mention cases in areas with severe mortality but do not report the rate with severe clinical signs. In contrast, Haeren *et al.* 2016 paper says "the disease may not always cause high mortalities (extensive outbreaks) in common carp" and Way *et al.* 2017 paper says that CEV leads "low mortality rates". Therefore, there is no scientific certainty about CEV's fulfilling the requirement of an OIE emerging disease "which has a significant impact on aquatic animal".
- 2) There is uncertainty about CEV's meeting the condition a) of the definition of an emerging disease (its spread to a new geographic area). Improvements in diagnostic techniques in recent years and the recognition of CEV as a diagnosable disease may have resulted in previously unexplained cases being diagnosed as CEV infections, which consequently increased the number of reported outbreaks. In fact, CEV was confirmed from the bygone UK sample in 1998/99 (Way and Stone, 2013). In addition, Way *et al.* 2017 paper describes "The extent of the emergence of CEVD in Europe is difficult to assess because European fish disease laboratories have only recently been able to reliably detect the causative virus." Furthermore, among the eight scientific papers referred in the OIE Aquatic Commission's February 2022 meeting report, Adamek *et al.* 2021 paper mentions "Hence, in previous years, several disease outbreaks in carp populations associated with gill pathology remained unexplained and putatively could have been caused by CEV." and Haeren *et al.* 2016 paper mentions "CEV/KSD is the latest example of a virus disease of cyprinids that has emerged, largely unnoticed, in Europe and where the true extent of the spread of the virus is unknown."

As mentioned above, Japan believes that CEV does not meet OIE's criteria for an emerging disease. Japan proposes that the OIE Aquatic Animal Health Standards Commission reconsider whether the disease should be considered an emerging disease or not after collecting data on actual outbreaks and other conditions from a wide range of member countries, rather than basing its decision on papers describing a few regions.

(参考) OIE glossary における新興疾病の定義

EMERGING DISEASE

means a disease, other than listed diseases, which has a significant impact on aquatic animal or public health resulting from:

- a. a change of known pathogenic agent or its spread to a new geographic area or species; or
- b. a newly recognised or suspected pathogenic agent.

(参考) レポートにおける CEV 関連箇所の抜粋 (原文及び仮訳)

The Commission reviewed the latest scientific information for infection with CEV and noted the following evidence further confirmed the severity of infection with CEV in some regions of the world:

- infection with CEV was found to be the causative pathogenic agent for severe mortality in wild adult common carp (*Cyprinus carpio*) in Italy in mid-June 2020 (Marsella et al., 2021);
- during the outbreak and mass mortality event in the wild common carp population in Lake Swartout, Minnesota, USA, high CEV viral loads were present (Tolo et al., 2021);
- a survey to determine the prevalence of CEV in Germany detected CEV in 69% of common carp (*Cyprinus carpio*) populations and 41% of koi carp (a variety of *Cyprinus carpio*) populations. In addition, most fish sampled from clinically affected common carp or koi carp populations harboured high virus loads. The authors concluded that infection with CEV was highly prevalent in Germany and implied the spread of the disease through intense trading of common carp and koi carp (Ademek et al., 2021);
- the blood chemistry profile of CEV infected common carp revealed that CEV infection exerts complex adverse effects and results in severe metabolic disturbance due to impaired gill respiratory and excretory function (Pikula et al., 2021).

Findings reported in the late 1990s (Way et al., 2015) and in the early 2000s (Haenen et al., 2014) only showed the possibility of infection with CEV distribution in very limited areas of Europe and USA. The rapid spread to other countries and induced mortalities since 2009 confirms condition a) of the definition of emerging disease is met. The Commission also considered that the culture of common carp is considered traditional aquaculture in many countries and that mortalities caused by infection with CEV has aroused great concern among scientists and ornamental breeders with more reports and scientific literature published every year.

The Commission also noted that the genome of CEV published in 2021 (Mekata et al., 2021) will assist in the promotion of epidemiological studies, phylogenetic analysis of CEV and development of new diagnostic assays for infection with CEV in the future.

Based on this review of the latest scientific evidence, and in conjunction with information provided in previous reports of the Commission, the Commission determined that infection with CEV continues to meet the definition of an emerging disease. The Commission reminded Members that any detections of infection with CEV should be reported to the OIE as an emerging disease, in accordance with Article 1.1.4. of the Aquatic Code.

References:

- ADAMEK, M., HELING, M., BAUER, J., TEITGE, F., BERGMANN, S.M., KLEINGELD, D.W., WELZEL, A., SCUDA, N., BACHMANN, J., LOUIS, C.S., BÖTTCHER, K., BRÄUER, G., STEINHAGEN, D. & JUNG-SCHROERS, V. (2021). It is everywhere-A survey on the presence of carp edema virus in carp populations in Germany. *Transboundry and Emerging Diseases*, 1-15
- HAENEN, O., WAY, K., GORGOGLIONE, B., ITO, T., PALEY, R., BIGARRE, L. & WALTZEK, T. (2016). Novel viral infections threatening Cyprinid fish. *Bulletin of the European Association of Fish Pathologists*, 36(1), 11
- K. WAY, D. Stone (2013). Emergence of carp edema virus-like (CEV-like) disease in the UK. *Finfish News* 15: 32-34
- K. WAY, O. HAENEN, D. STONE, M. ADAMEK, S. M. BERGMANN, L. BIGARRÉ, N. DISERENS, M. EL-MATBOULI, M. C. GJESSING, V. JUNG-SCHROERS, E. LEGUAY, M. MATRAS, N. J.

OLESEN, V. PANZARIN, V. PIACŮKOVÁ, A. TOFFAN, N. VENDRAMIN, T. VESELÝ, T. WALTZEK. (2017). Detection of carp edema-like virus in archive DNA and tissue sampled from disease outbreaks in common carp (*Cyprinus carpio*) in Emergence of carp edema virus (CEV) and its significance to European common carp and koi *Cyprinus carpio*. *Diseases of Aquatic Organisms* · October 2017, vol.126: 155-166

- MARSELLA, A., PRETTO, T., ABBADI, M., QUARTESAN, R., CORTINOVIS, L., FIOCCHI, E., MANFRIN, A. & TOFFAN, A. (2021). Carp edema virus-related mortality in wild adult common carp (*cyprinus carpio*) in Italy, *Journal of Fish Diseases*. 44(7), 939-947
- PIKULA, J., POJEZDAL, L., PAPEZIKOVA, I., MINAROVA, H., MIKULIKOVA, I., BANDOUCHOVA, H., BLAHOVA, J., BEDNARSKA, M., MARES, J. & PALIKOVA, M. (2021). Carp edema virus infection is associated with severe metabolic disturbances in fish. *Frontiers in Veterinary Science*, 8, 679970. 10.3389/fvets.2021.679970
- TOLO, I.E., PADHI, S.K., HUNDT, P.J., BAJER, P.G., MOR, S.K. & PHELPS, M.B.D. (2021). Host range of carp edema virus (CEV) during a natural mortality event in a Minnesota lake and update of CEV associated mortality events in the USA. *Viruses*, 13(3), 400