

Document Name	Zebrafish and Other Small Warm-Water Laboratory Fish
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Origin	Research Office Committee on Animal Use and Welfare (CAUW)
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The Canadian Council on Animal Care (CCAC) *guidelines: Zebrafish and other small, warm-water laboratory fish* provides information for investigators, study directors, animal care committees, facility managers, veterinarians, and animal care staff to help facilitate improvement in both the care given to laboratory fish and the manner in which experimental procedures are performed.

1) Documentation

Any person at MSVU that utilizes zebrafish and other small warm-water laboratory fish for scientific purposes shall provide the ACC with Standard Operating Procedures (SOPs) that provide succinct information on the husbandry, housing and care that are species appropriate. Copies of these SOPs must also be submitted to the Research Office for placement on file. Researchers shall ensure that the SOPs meet CCAC and ACC guidelines and that the SOPs are kept up to date.

2) CCAC Guidelines for the Care and Use of Zebrafish, and other Small Warm-Water Laboratory Fish

Mount Saint Vincent University (MSVU) shall adopt and apply the guidelines of [CCAC guidelines: Zebrafish and other small, warm-water laboratory fish](#) where appropriate. These guidelines address conditions normally present in laboratories housing zebrafish and other small, warm-water fish; where experimental conditions required by studies differ from these guidelines, they must be justified to, and approved by, the animal care committee (ACC). A summary of the applicable CCAC guidelines are as follows:

Guideline 1	Institutions must strive to sustain an institutional culture of respect for animal life.
Guideline 2	Facilities must ensure an adequate amount of water of suitable quality is

	always provided for the species and life stage of the fish being housed.
Guideline 3	Water quality variables must be routinely monitored to permit predictive management of water quality. Contingency plans must be in place to deal with deviations from acceptable limits for the species being held.
Guideline 4	Sufficient numbers of competent personnel must be available for daily care and observation of the fish and the safe operation and maintenance of the water and life support systems, 365 days a year.
Guideline 5	Facilities and investigators acquiring or transporting fish, or conducting research on fish, must be familiar with, and comply with, relevant international, federal, and provincial/territorial legislation and policies.
Guideline 6	The health and welfare of the fish must be checked upon arrival by competent animal care personnel and the fish must undergo quarantine and acclimation for a period appropriate to assure the health of the fish.
Guideline 7	Breeding must be managed to minimize inbreeding and genetic drift and to increase genetic diversity.
Guideline 8	For female zebrafish, there should be an interval of at least one week between breeding attempts.
Guideline 9	Zebrafish must not be individually housed without scientific or veterinary justification and should be housed at densities appropriate to their life stage.
Guideline 10	Consideration must be given to providing zebrafish with environmental enrichment suited to the housing conditions.
Guideline 11	Detailed Standard Operating Procedures must be developed for the care of all fish and for maintenance and cleaning of tanks, rooms, and equipment.
Guideline 12	Fish must be handled only when necessary, and the number of handling episodes should be minimized.
Guideline 13	Personnel involved in handling fish must be competent in methods that expose fish to air for the shortest time possible, and that minimize injury, including damage to the mucus-skin barrier.
Guideline 14	Basic physical and behavioural indicators of fish welfare must be monitored daily, and written records must be maintained. Any changes must be investigated, and the causes identified and corrected.
Guideline 15	All facilities must have a fish health program that includes a system of regular monitoring and reporting for health assessment purposes, aimed at early detection of disease conditions and the causal agents, stressors, and mechanisms of disease, so that correct control measures can be initiated.
Guideline 16	A management plan must be in place to deal with unanticipated disease outbreaks.

Guideline 17	Endpoints must be defined for studies that involve potential pain and/or distress to fish or where morbidity and mortality are expected, and a list of parameters for objective assessment of the health and well-being of the fish must be established.
Guideline 18	Anesthetics must be used in procedures where there is expected to be noxious stimuli, and in experiments entailing extensive handling or manipulation with a reasonable expectation of trauma and physiological insult to the fish.
Guideline 19	Following the precautionary principle, fish should be provided with analgesia for procedures that are likely to be painful, based on the best available scientific evidence.
Guideline 20	Euthanasia of zebrafish must be carried out by competent personnel only, using the method that minimizes pain and distress for the particular fish and is suited to the study data.

3) Acknowledgements

MSVU would like to acknowledge that this guidance document has been derived from the CCAC guidelines: [CCAC guidelines: Zebrafish and other small, warm-water laboratory fish](#) (2020)

4) Document Modification History

Document Number	Key Changes	Effective Date
ACC.INFO.006	Review for content; update to hyperlinks; formatting for accessibility	August 2023
ACC.INFO.006	Original Version	October 2021

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