



# Toxicology Assessment Issues: Plenary Reporting

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Guy Gilron, Facilitator

# Presentation Overview

- Toxicology issues requiring consensus and discussion:
  - based on suggestions from Toxicology Auditors' training session last week at ETC
  - other issues raised by other assessors
  - by Appendix/Test Method
- Consensus reached on all 9 issues
- Questions? Comments?

# *Selenastrum capricornutum* growth inhibition

- Statement of issue:
  - many laboratories are not consistently incorporating some key test method amendments from EC (1997):
    - conduct of the Mann-Kendall's test (validity criterion)
    - proper calculation of endpoints incorporating potential stimulation (hormetic effect)
    - renewal of cultures from solid-phase medium (agar) on a regular basis
    - use of pure 'uncontaminated' cultures
- Consensus:
  - need to monitor lab compliance with all of these, particularly validity criteria

# *Daphnia magna* acute lethality

- Statement of Issue:
  - some laboratories are still not conducting culture health checks appropriately:
    - 'QA/QC jar' monitoring of reproduction of 1 adult representing a brood stock is not being conducted to reflect the EC (2000) amendments
    - this is a 'must' culture health criterion in the test method
- Consensus:
  - need to monitor and ensure conformance with this

# *Daphnia magna* acute lethality



- Statement of Issue:
  - in some tests (controls), daphnids have been observed floating on the surface layer, however, are still moving (swimming); should floaters be considered immobile (part of EC50 calculation) or 'stressed'?
- Consensus:
  - 'floaters' should not be considered immobile (unless they really are immobile); this observation should be noted as a behavioural change

# *Ceriodaphnia dubia* chronic survival and reproduction

- Statement of Issue:
  - the correct time to terminate the test appears to be confused by some labs
  - it is when 60% of controls have produced 3 broods
  - after 8 days (if criterion is not met), the test is considered invalid
  - labs try to extend the test to meet a different requirement (i.e., 15 young per surviving female)
- Consensus:
  - assessors can check SOP, test report, bench sheets to confirm that this is being conducted properly

# Fathead minnow chronic survival and growth

- Statement of Issue:
  - when purchasing fish for testing, records of culturing (e.g., % mortality, water quality, temperature, etc.) are required from suppliers
  - many laboratories are often not:
    - obtaining the proper information from suppliers
    - retaining documentation of this information
  - Note: this also applies to inland silverside and topsmelt
- Consensus:
  - assessors should check SOPs, records to confirm
  - does the lab comply with EC's protocol for importation?
  - do they meet provincial and federal requirements when transplanting from another province?

# Rainbow trout acute lethality

- Statement of Issue:
  - some laboratories are (still!) not running a control for every test (*i.e.*, they are 'sharing' controls among tests)
- Consensus:
  - during the trace of tests, assessors should check SOP, lab bench sheets and length/weight data to confirm that this is being conducted properly

# Rainbow trout acute lethality

- Statement of Issue:
  - labs use dechlorination systems when they use city water (vs. groundwater)
  - most labs can't meet chlorine MDL required in the test method (i.e., TRC 0.002 mg/L)
  - this MDL is not practical for most labs
  - what should we expect them to achieve?
- Consensus:
  - we should be expecting them to achieve an MDL of 0.01 mg/L (using an amperometric meter)
  - this confirms the integrity of their dechlorination system

# Rainbow trout acute lethality

- Statement of Issue:
  - average length & weight measurements of fish is required to determine loading in the test (EC, 2000 amendments)
  - these measurements are to be determined from the control exposure at the end of the test
  - this is not being done consistently
- Consensus:
  - during assessments, assessors need to check SOP, lab bench sheets and length/weight data to confirm that this is being conducted properly

# Other Issues

- Statement of Issue:
  - control/warning charts – are they being implemented correctly by laboratories?
- Consensus:
  - basic criteria:
    - minimum of 5 data points to establish one
    - warning limits based on the last 20 data points
    - all data points should be used in calculations (!)
    - Logarithms to be used when developing control charts ('must' for acute tests; but preferable for all tests)

Questions? Comments?

