Expert Science Meeting #3

Review of Revised Study Workplan

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Agenda

- Welcome and introductions
- Minutes of Science Panel meeting #2
- Approval of the study workplan by the Expert Science Panel

Developing the Workplan

- ✓ Oral presentation to Stakeholder Committee and Expert Science Panel
- ✓ Development of written workplan
- ✓ Revisions based on Stakeholders comments
- ✓ Revisions based on Expert Science Panel's comments
- ➢ **Review of the final draft and approval of the study workplan by the Science Panel** ⟵ **Goal for today**

Upgrades to the Workplan

- Additions to the scope of work
- Major revisions to the existing document
- Clarifications to the existing document

Additions to the Scope of Work

- In-person (or virtual) meeting for all participating laboratories with the Science Panel
  - Will supplement the survey and phone interview to narrow down common issues, challenges and suspected sources of variability

- Intermediate step in data analyses to assess intra- and inter-lab variability
  - Compare performance data of reference toxicant vs control to assess whether the two are dependent or not.

Major Revisions to the Workplan

- Included Quality Assurance information (e.g., data quality objectives for secondary data)
- Revised data acquisition plan for Task 2
- Clarified the objectives of Tasks 3 and 4
- Revised timeline to complete the project

Quality Assurance Plan

- Included a Data Quality Objectives section (see Table 5)

Data Type	Accuracy	Precision	Completeness
CETIS extracted data	100% based on automated data checkers prior to data upload	100% based on automated data checkers prior to data upload	100% based on automated data checkers prior to data upload
Hand-entered data	100% on 20% audit, if <100% accuracy, a 100% audit for the data entry personnel. 100% based on automated data checkers prior to data upload	100% on 20% audit, if <100% accuracy, a 100% audit for the data entry personnel. 100% based on automated data checkers prior to data upload	100% on 20% audit, if <100% accuracy, a 100% audit for the data entry personnel. 100% based on automated data checkers prior to data upload
Hand-entered lab methods and test conditions	100% on 20% audit, if <100% accuracy, a 100% audit for the data entry personnel. 100% based on automated data checkers prior to data upload	100% on 20% audit, if <100% accuracy, a 100% audit for the data entry personnel. 100% based on automated data checkers prior to data upload	100% on 20% audit, if <100% accuracy, a 100% audit for the data entry personnel. 100% based on automated data checkers prior to data upload
Electronic Survey	100% based on automated data checkers prior to data upload	100% based on automated data checkers prior to data upload	100% based on automated data checkers prior to data upload

Quality Assurance Plan

- Other key elements of a QAP are included in this workplan
  - Governance, project organization chart and key personnel
  - Problem definition and tasks description
  - Data management and data sharing/accessibility policy
- Note that a detailed and formal QAP will be developed before performing Tasks 2.3, 3 and 4 when new primary data are being generated

Data Acquisition

- We have reorganized section 2.2.1 to clarify our step-wise approach for data collection

1. **Data acquisition based on lab documentation and raw data**
2. Survey questionnaire, phone interviews (and group meeting)

C. DUBIA LAB TECHNIQUES AND DATA	DATA TYPE	SOP, QAP, bench sheets, supporting documents	CETIS, raw data, control charts
Test conditions			
Dilution water recipe	drop-down*	x	
Dilution water recipe modifications	text	x	
Source water	drop-down	x	
Dilution water shelf-time (weeks)	number	x	
Measured ions concentration (mg/L)	number	x	
Daily water hardness (mg/L)	number	x	x
Daily conductivity (µS/cm)	number	x	x
Daily pH	number	x	x
Daily temperature (°C)	number	x	x
Daily DO (mg/L)	number	x	x
Sample volume in test chamber (mL)	number	x	
Test chamber material	drop-down	x	
Test chamber volume (mL)	number	x	
Photoperiod	drop-down	x	
Light source	text	x	
Light intensity (min and max; foot-candles)	number	x	
Lab air temperature (range, °C)	number	x	
YCT vendor	text	x	
YCT concentration in chamber (mg/L)	number	x	
YCT shelf-time (weeks)	number	x	
Algal species	text	x	
Algal source	text	x	
Algal culture media	text	x	
Algae concentration in chamber (mg/L)	number	x	
Algae shelf-time (weeks)	number	x	
Feeding frequency (count/day)	drop-down	x	
Age window at test initiation (hrs)	drop-down	x	
Reference toxicant used	drop-down	x	
Number of replicates	calculated †		x
Time to reproduction (days)	calculated		x

Data Acquisition

- We have reorganized section 2.2.1 to clarify our step-wise approach for data collection

1. Data acquisition based on lab documentation and raw data
2. **Survey questionnaire, phone interviews (and group meeting)**

Below is a sample of possible survey questions:

- What is the specific age window of animals at test start?
- What is the feeding frequency and concentration during the test?
- What are your procedures for determining mortality?
- What is your procedure to exclude 4th broods?
- What is your annual percentage of test failures and for what reason(s)?
- What is your experience with regards to reducing test variability and improving performance?
- What, if any, deviations have been made from your SOP, and how were these noted?
- How many restarts/turnovers has your lab had in the last 3 years?
- How do you treat outlier data?
- What is your percentage of data audited by the QA officer?
- What is your testing capacity (tests/year)?
- How many years has your lab conducted the WET test?
- How many years of experience does your lead technician have?
- How many tests has your lead technician conducted?
- For new technician training, how many practice tests are required as part of the training process?

This is not the full list of survey questions and a more detailed survey will be provided to the Stakeholder Committee and Expert Science Panel after analyses of laboratory data have been completed.

In addition to the phone interviews, SCCWRP and the Expert Science Panel will schedule a group meeting with the participating laboratories to further discuss their experience conducting the *C. dubia* reproduction test.

Objectives of Tasks 3 and 4

- Task 3: Optimize lab techniques deemed responsible for the intra- and inter-laboratory variability, through a series of toxicity tests using controls or reference toxicants

- Task 4: Split-sample testing exercise to assess intra- and inter-laboratory variability and effectiveness of guidance in reducing such variability.

Revised Schedule

Task	Product	Deadline
Study Workplan		
Draft	Draft Workplan to identify potentially variable-inducing lab techniques	3/1/21
Final	Final Workplan approved by Expert Science Panel	5/1/21
Historical Data Analysis		
Lab Data Analysis	Technical Memo identifying potentially variable-inducing lab techniques	9/30/21
Split Sample Analysis (if conducted)	Technical Memo quantifying within and among lab variability	3/30/22
Optimization Testing	Technical memo with draft recommended guidance to reduce within and among lab variability	7/30/22
Interlaboratory Testing	Technical Memo quantifying within and among lab variability	11/30/22
Final Report		
Draft	Draft Report with final recommended guidance	1/31/23
Final	Final Report approved by Expert Science Panel	3/30/23

Clarifications to the Workplan

- Additional background for the study and current concerns with the *C. dubia* test
- Glossary of terms and definitions for intra versus inter-variability
- Expected outcomes for the study and limitations of the final guidance to maintain environmental relevance
- Updated governance structure
- Improved explanation for the minimum number of tests compiled
- Expected outcomes for the data analyses section

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