

Quality Assurance & Quality Control:

An Overview

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Quality Assurance & Quality Control (QA/QC)

- What is it?
- Why is it important?
- 24 elements of a Quality Assurance Project Plan (QAPP)
- SWAMP Requirements & Guidance

PLANNING



PAEP

Monitoring Plan

QAPP



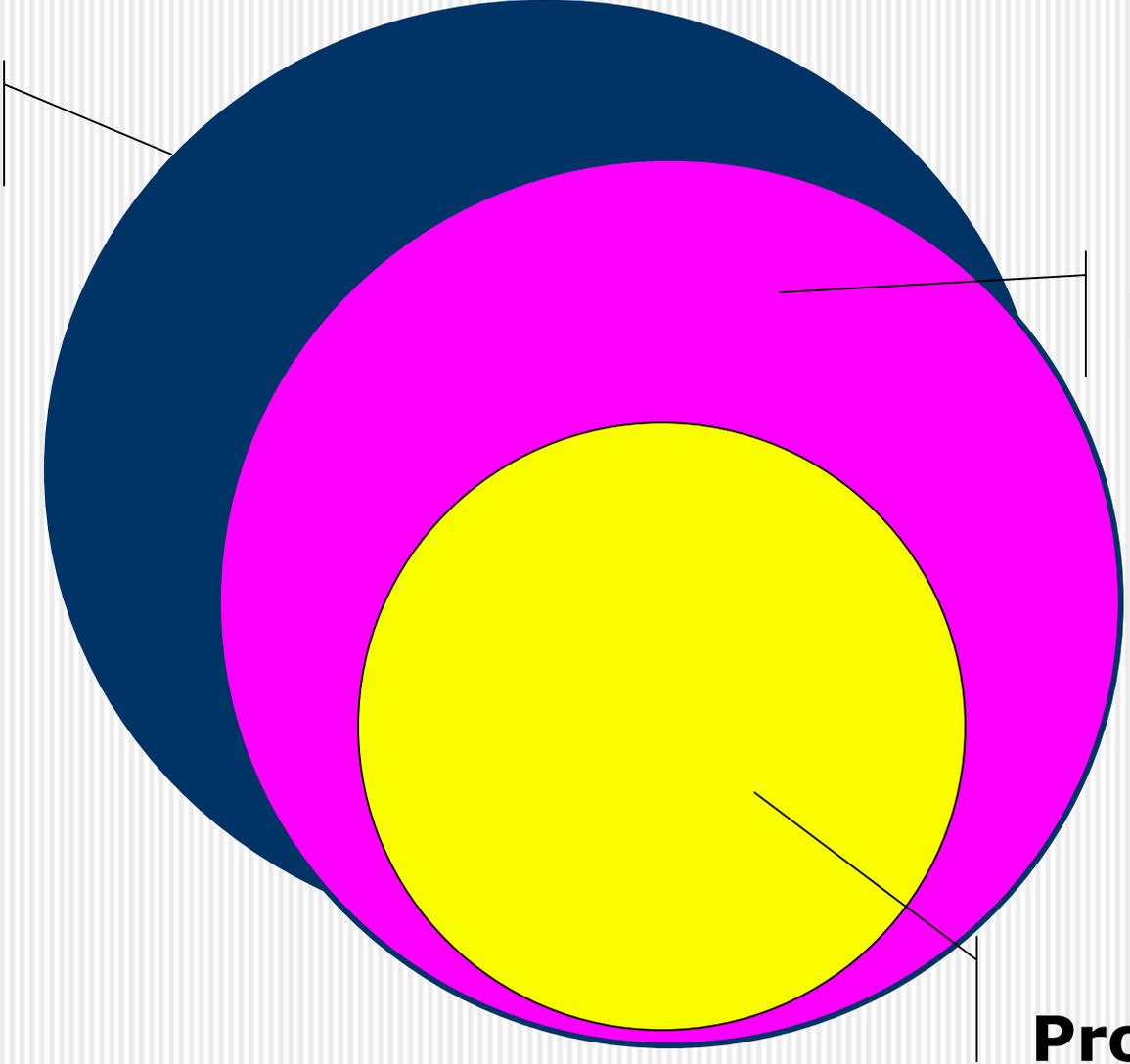
What is a Quality System?

- A management system that ensures quality of work process, products, and services.
- Quality Management Plan (QMP) documents elements of the quality system.
- Quality Assurance (QA) is the management activities described in the QMP

What is a QA Project Plan?

- Document describing the *technical* and *quality* activities of a specific project.
- Quality Control (QC) is the set of procedures implemented as part of the QA program.

**Quality
System
(QMP)**



**QA
Project
Plan**

**QC
Procedures**

Why is QA/QC Important?

- Focuses efforts
- Standardizes activities
- Prevents waste
- Insures a useable product of known quality

Quality Assurance Project Plan (QAPP)

A written, approved document that describes:

- A. Project planning & management
- B. Data generation & acquisition
- C. Assessment & oversight
- D. Data validation & usability

A. Project Planning & Management

- 1. Title & approval sheet**
- 2. Table of contents**
- 3. Distribution list**

A. Project Planning & Management

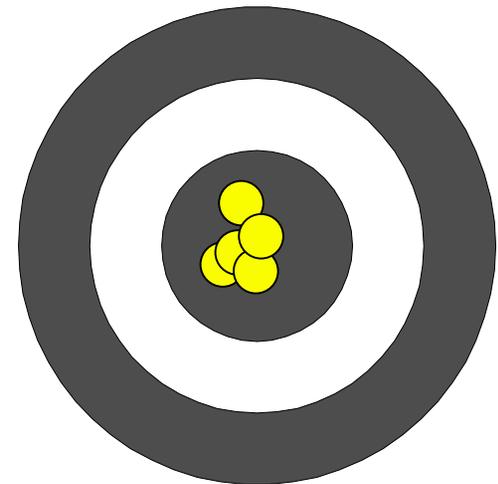
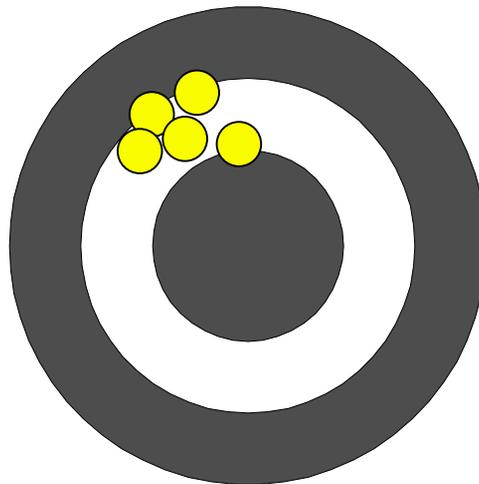
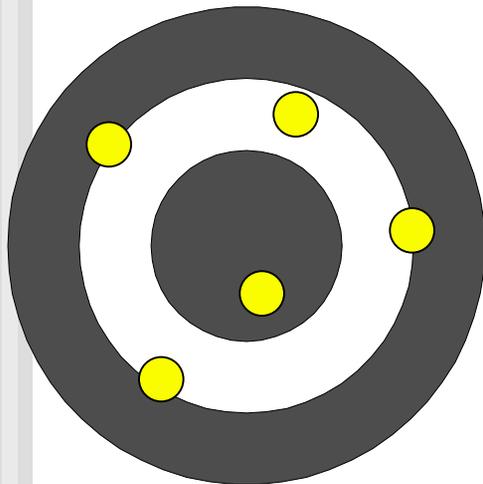
1. Title & approval sheet
2. Table of contents
3. Distribution list
4. **Project/task organization**
5. **Problem definition & background**
6. **Project/task description**

A. Project Planning & Management

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7. ***Quality objectives & criteria***

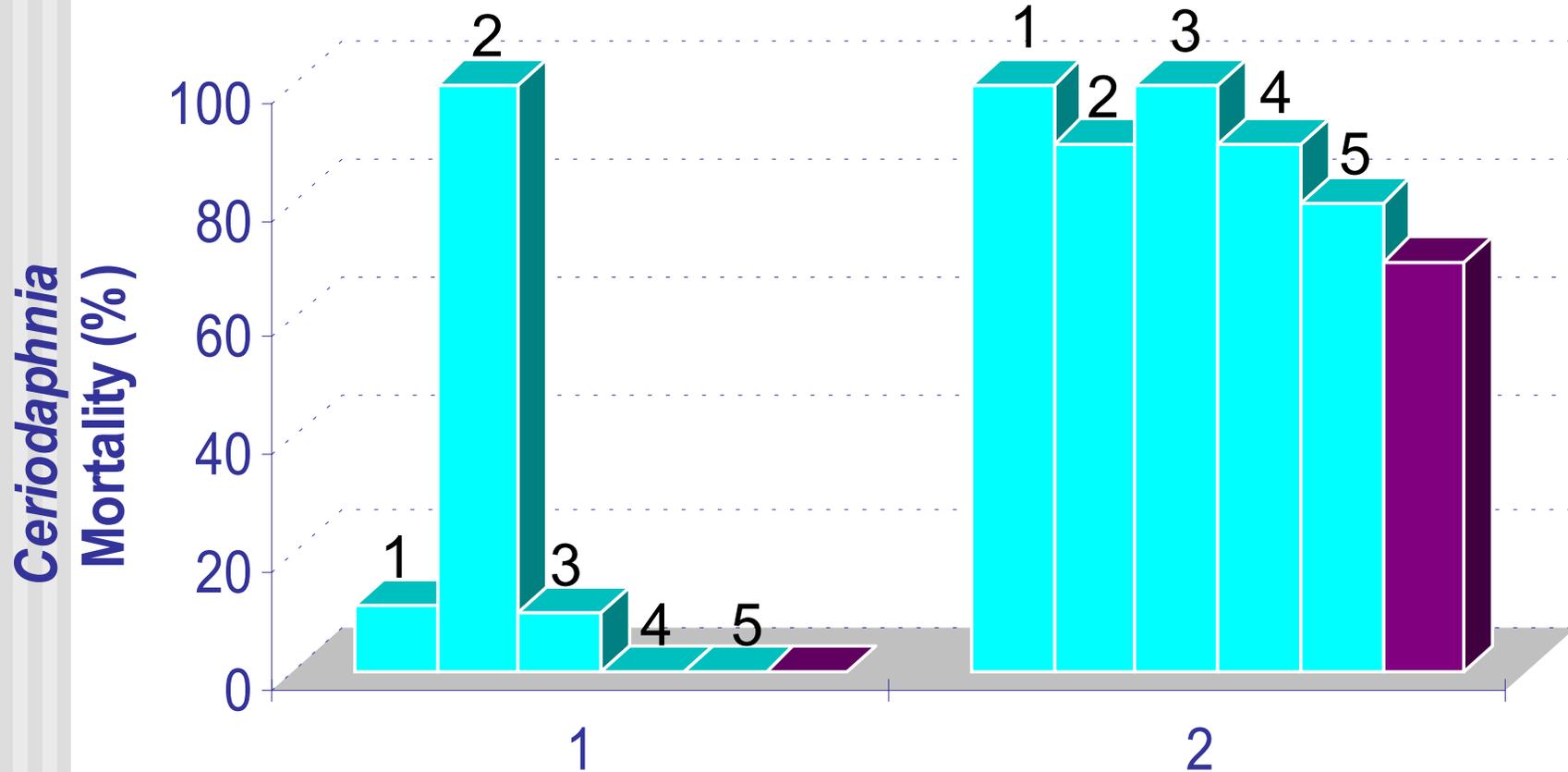
7. Quality Objectives & Criteria

Precision, Bias, & Accuracy



7. Quality Objectives & Criteria

Representativeness



7. Quality Objectives & Criteria

Comparability – Performance Based Methods System (PBMS)

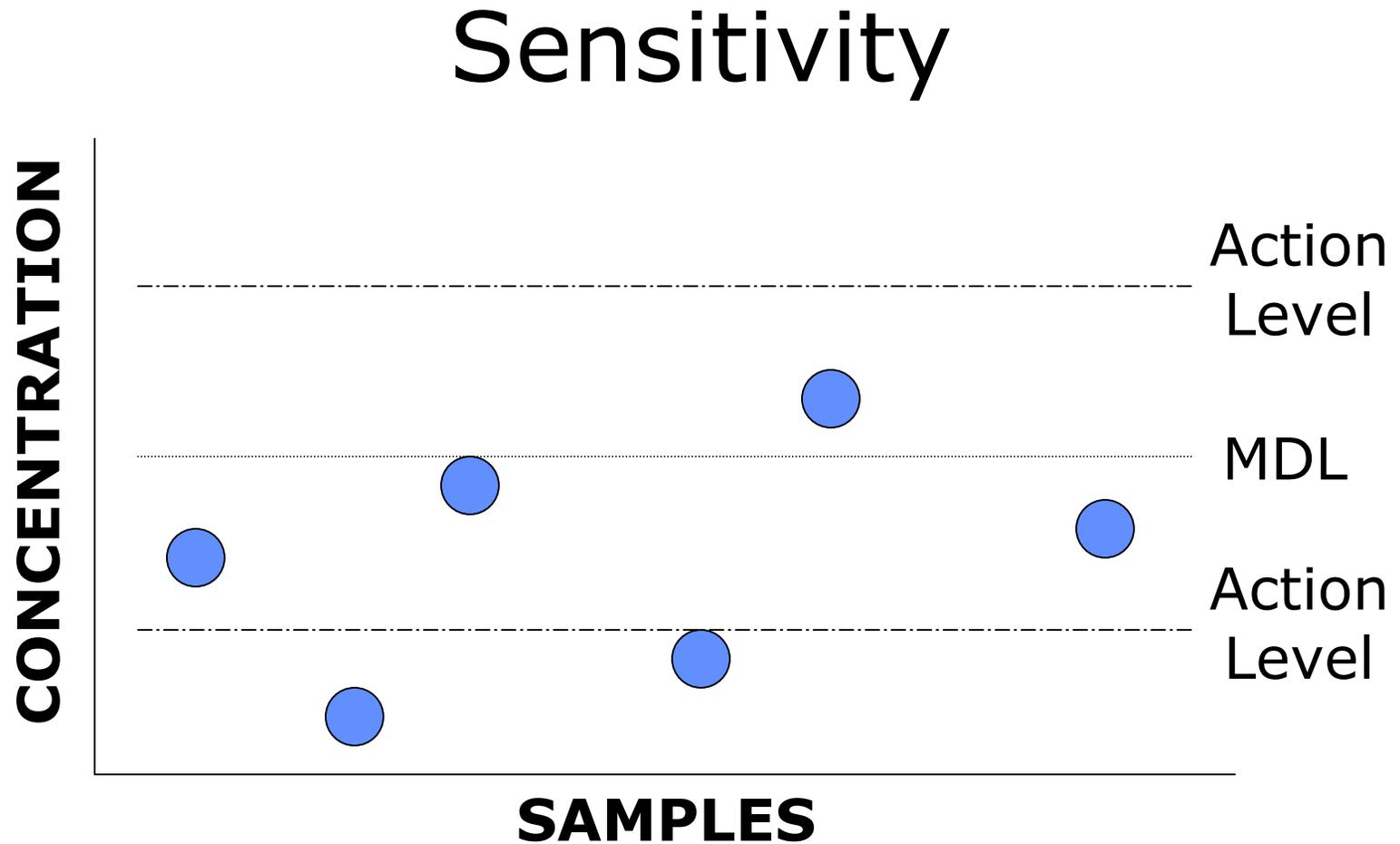
ELISA v. GC/MS Method for Measuring Diazinon Example

7. Quality Objectives & Criteria

Completeness

How much of the data planned to be collected must be valid to meet the project objectives?

7. Quality Objectives & Criteria



A. Project Planning & Management

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8. ***Special training & certification***

A. Project Planning & Management

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7. Quality objectives & criteria
8. Special training & certification
9. ***Documentation & records***

B. Data Generation & Acquisition

10. Study design

B. Data Generation & Acquisition (cont'd)

10. Study design

11. *Sampling methods*

12. *Sample handling & custody*

13. *Analytical methods*

B. Data Generation & Acquisition (cont'd)

- 10. Study design
- 11. Sampling methods
- 12. Sample handling & custody
- 13. Analytical methods
- 14. *Quality control***

14. Quality Control

- Duplicates – intra-laboratory precision
- Splits – inter-laboratory precision
- Blanks – contamination
- Spikes – accuracy & bias

B. Data Generation & Acquisition (cont'd)

10. Study design
11. Sampling methods
12. Sample handling & custody
13. Analytical methods
14. Quality control
- 15. *Equipment testing, inspection, & maintenance***
- 16. *Equipment calibration & frequency***
- 17. *Acceptance of supplies & consumables***

B. Data Generation & Acquisition (cont'd)

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12. Sample handling & custody
13. Analytical methods
14. Quality control
15. Equipment testing, inspection, & maintenance
16. Equipment calibration & frequency
17. Acceptance of supplies & consumables
- 18. *Non-direct measurements***

B. Data Generation & Acquisition (cont'd)

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14. Quality control
15. Equipment testing, inspection, & maintenance
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17. Acceptance of supplies & consumables
18. Non-direct measurements
19. ***Data management***

C. Assessment & Oversight

20. Assessments & response actions

C. Assessment & Oversight

20. Assessments & response actions

21. *Reports to management*

D. Data Validation & Usability

22. *Data review, verification & validation*

23. *Verification & validation methods*

D. Data Validation & Usability

- 22. Data review, verification & validation
- 23. Verification & validation methods
- 24. *Reconciliation with user requirements***

QA Overview Summary

- Utilize all project planning documents
- Utilize SWAMP tools
- Utilize available resources
- Refer to the QAPP throughout the project

Questions?

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