Biological testing – PT Program Needed: Algae

The purpose of this document is to promote the provision of proficiency testing (PT) in the area of *algae testing.*

The document lists the key program features PT providers should consider when establishing a PT program which supports NATA's accreditation activities.

NOTE:

1. **This document does not apply to NATA's processes for accrediting proficiency testing providers.**

2. **NATA applicant and accredited facilities should not interpret this document as criteria for the selection of a particular PT provider.**

NATA publicly lists all providers who have indicated to NATA an interest in offering PT programs. Details of the listing process are given in the *NATA Information Paper 4 – Needs and specifications for proficiency testing programs* available from the NATA website.

When selecting PT providers, facilities are advised that preference should be given to accredited services, where available, and to those providers who offer programs which satisfy the facilities' testing needs. Facilities should also be able to arrange with their selected provider(s) the inclusion of additional samples and/or micro organisms required for testing where those routinely offered by the provider do not adequately satisfy their testing needs.

1. ISO/IEC 17043

PT providers are expected to comply with the requirements of ISO/IEC 17043: Conformity assessment – General requirements for proficiency testing.

Additional guidance is provided in this document on some of the clauses of ISO/IEC 17043.

2. Statistical Design

ISO/IEC 17043 highlights that appropriate statistical design of a proficiency testing program is essential.

3. Number and Frequency of Proficiency Samples per Annum

It is desirable that a program provide a minimum of one proficiency testing round for algae per annum and preferably three samples per round.

4. Range of Microorganisms

It is desirable that the providers have a range of organisms available for incorporation into proficiency samples. This is to ensure that facilities participating in the program are challenged over time with a variety of algal genera (and species) representative of the scope of their accreditation.

Each round should include both identification and enumeration components.

The diversity of algae supplied should include planktonic genera representative of the major classification groups; applicable to either freshwater or marine environments. Each round of proficiency testing for freshwater algae should include genera or species of blue-green algae (cyanobacteria) to ensure the participation of those laboratories that are accredited only for this group of organisms.
It is also desirable that the selected algae include a range of unicellular, colonial and filamentous forms across several classification groups.

Samples within each round may vary in taxonomic composition and/or cell concentration and may be spiked with target organisms of known concentration. The objective of the enumeration component should be to enable estimates of target organisms at a satisfactory level of precision. Accordingly, the concentration of target organisms should be greater than approximately 100 units (cells, colonies or filaments) per mL of sample.

Either naturally occurring organisms or laboratory isolated cultures may be used, but target organisms should be regarded as morphologically typical, particularly in regard to cultures. The taxonomic level of identification requested (eg family, genus, species) should be in accordance with the level of morphological features that are available to enable reliable identification and the target organisms should generally be regarded as ubiquitous in geographic distribution (i.e. representative of most geographic areas of Australia).

If cultured organisms are used, they should be traceable to the original source.

5. Feedback from Program Participants

ISO/IEC 17043 requires PT providers to seek feedback from participants. Such feedback should consider the frequency of rounds, fitness for purpose of the PT program, coverage and other details of program design.

6. Sample Matrix

Both freshwater and marine samples should be included although separate programs for each may be required, depending on the scope of accreditation and the number of participating laboratories.

The recommended matrix for algal proficiency samples is water with an appropriate addition of the fixative Lugol's Iodine.

7. Guidance about Samples

ISO/IEC 17043 requires PT providers to provide instructions to participants.

8. Results and Program Report

A sheet for result entry should ideally include supporting information on specific techniques that are used in each laboratory and raw enumeration data that may assist the provider in assessing possible sources of error.

The program should provide for electronic (web-based) entry of results by participants to assist in the timely return of results.

A four week turnaround period, from the time of the results' submission closing date to reporting back to facilities, is recommended.

9. Sample Stability

ISO/IEC 17043 requires PT providers to demonstrate that samples will not undergo significant changes through the conduct of the PT, including storage and transport.

10. Program Ownership

The PT provider is responsible for all costs associated with running the program, including the invoicing of participant facilities and the collection of all fees owing.

11. Confidentiality

ISO/IEC 17043 requires PT providers to keep confidential the identity of all participants.

12. Compliance with IATA Requirements

Sample packaging must meet IATA requirements.

13. Contact Details

PT providers who wish to express an interest in providing a program in accordance with this document should write to:

Mr Neil Shepherd
Manager, Biological Testing
National Association of Testing Authorities (NATA)
71 – 73 Flemington Road, North Melbourne VIC 3051

or by e-mail: Neil.Shepherd@nata.com.au