



Laboratory Quality Assurance Guidelines

International Fertilizer Industry Association (IFA)

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The IFA Laboratory Quality Assurance Guidelines were prepared by the IFA Working Group on the Harmonization of Fertilizer Sampling and Quality Analysis Methods. This document is made available as a reference document for the laboratory analysis of fertilizer products, and should be considered a guideline document which is not mandatory by nature.

The IFA Laboratory Quality Assurance Guidelines are available to the general public on the IFA web site or by request to the IFA Secretariat.

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Laboratory Quality Assurance

In order to ensure the delivery of the most accurate and precise analytical data, the International Fertilizer Industry Association (IFA) Working Group on the Harmonization of Fertilizer Sampling and Quality Analysis Methods has developed a set of guidelines for those laboratories participating in IFA collaborative studies (ring tests).

The following guidelines are intended to provide the basis for developing a laboratory-specific quality assurance scheme:

Best practice guidelines:	
1.	It is recommended that all laboratories engaged in the analysis of fertilizer nutrients should develop and implement a documented Quality Assurance Programme (QAP). This programme should outline the basic requirements to ensure that the application of valid methodologies, the use of appropriate equipment, the development of competent analysts, the verification of results, and the control of documentation are all in place.
2.	It is recommended that the official methods should be validated by a recognized body and should be deemed suitable for the intended use. The method's scope and field of application should be stated clearly. Some methods may be used for all levels, if appropriate.
3.	The method should also contain sections on the principle and its definition, and should be prescriptive at critical control points.
4.	Company-specific ("in-house") methodologies should be included in the Quality Assurance Programme and should be validated against the official methods.
5.	All reagents, solutions, standards and equipment need to be defined, with the reagents appropriately identified and labeled.
6.	Detailed information on how to make and standardize all solutions should be available.
7.	Quality control standards should be appropriate for the matrix and the concentration, and should be traceable.
8.	Glassware grade, measuring apparatus and the precision of the analytical balance should be periodically checked and documented.
9.	The laboratory analysts' training and skill set should meet the minimum requirements established in the Quality Assurance Programme.
10.	Laboratories should regularly participate in intra- and inter-laboratory check sample programmes in order to verify and to demonstrate their overall proficiency.
11.	It is recommended that check samples should be systematically included with each run of unknown samples.
12.	A detailed record-keeping system should be established and maintained.