



## **IFA Working Group on the Harmonization of Fertilizer Sampling and Analysis Methods**

### **I. Background**

With the acceleration of global fertilizer trade, IFA's global membership has experienced an increasing number of contractual disputes due to the variable use of methods and procedures to sample and analyze international product shipments.

In a member-driven initiative, a broad-based working group was formed in early 2007 to address this matter. Company representatives from key global producers, traders and inspection companies participate in the working group in either one of two participation "levels": 1) steering committee; 2) expert review.

The steering committee consists of review "sector leaders" who meet several times a year to manage the review and recommendation process. Participants at the expert review level contribute to the compilation, review and best practice recommendation process via email contact with the sector leaders.

### **II. Working Group Objectives:**

The following three broad-based objectives were defined to guide the working group's activities:

- 1) To foster broad-based industry participation in the method review process to ensure transparency and representativeness.
- 2) To develop a list of recommended voluntary "best practice" methods based on a balanced, structured, and collaborative assessment process.
- 3) To develop and manage a communications plan to facilitate the wide spread adoption of the recommended practices in order to reduce trade inefficiencies and related economic losses.

### **III. Method review**

In order to systematically review the acceptability of methods for consideration as "best practice", the working group's steering committee has developed an assessment protocol, which involves two main steps:

- 1) Compile all known and relevant methods practiced in global fertilizer trade
- 2) Review and evaluate methods based on pre-agreed, specific evaluation criteria (outlined below)

Based on these two steps, one or several methods are selected for further review and (when necessary) laboratory ring testing to fill performance data gaps.

The deliverable is one or several *good industry practice recommendations*, which will be published on IFA’s web site and actively communicated to the global fertilizer industry for use as reference in international trade.

<b>Process steps</b>	
1.	Subject area selected and a sector leader(s) is/are assigned
2.	Work plan is developed and initial method review comparison table is established
3.	Steering Committee and Expert Review group compile global methods and conduct full analysis and ranking according to the evaluation criteria
4.	Steering Committee conducts data “gap analysis”
5.	Evaluation of ring test requirement
6.	(In the case of a ring test) <ul style="list-style-type: none"> <li>- Sector leader to initiate and conduct inter-laboratory testing</li> <li>- Generate performance data on methods</li> <li>- Sector leader to provide report analyzing the results</li> </ul>
7.	A draft recommendation is developed and circulated to the Expert Reviewers
8.	The draft recommendation is circulated to the full Technical Committee for comment
9.	Finalization of recommendation
10.	Publication of good industry practice on the IFA web site

## IV. Evaluation Criteria

With a view to structuring a balanced and fair review process, the following criteria were developed and ranked by order of importance in order to guide the evaluation process:

1.	<b>Method status</b>	Determine whether the method is recognized by an entity or a national body where method validation studies have been published and peer reviewed
2.	<b>Statistical evaluation of validation studies*</b>	Analysis of r, R and, $\Delta$ values of individual methods
3.	<b>Performance</b>	Determine r, R and, $\Delta$ values for check sample/round robin or other known standards
4.	<b>Scope/Applicability</b>	Analysis of matrices and samples used in the validation study
5.	<b>Health/Environmental</b>	Evaluation of the health and safety of analysts and technicians during execution
6.	<b>Use and general acceptance</b>	Evaluation of the method's current impact on international commerce
7.	<b>Time</b>	Determination of ease-of-use and labor intensiveness of the method (and its potential for automation)
8.	<b>Complexity</b>	Evaluation of the instruments, equipment and expertise needed to run the method
9.	<b>Cost &amp; availability</b>	Evaluation of the availability and overall cost of the instruments, equipment, and reagents needed
10.	<b>Dynamic range</b>	Determine the appropriateness of the calibration curve, dilutions, and sensitivity for the nutrient level

\*Previous validation is given high priority, however, if a best practice method is not determined among the existing methods, a new procedure may be proposed.