



APMP-APLAC Joint Proficiency Testing Programme
(APLAC T110)
Toxic Metal/Metalloid Species in Powdered Rice



FINAL REPORT SUMMARY

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Organized by

Government Laboratory of Hong Kong, China (GLHK)

July 2020



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Summary

1. This APMP-APLAC joint proficiency testing programme (APLAC T110) was organized by the Government Laboratory of Hong Kong, China (GLHK) under the auspices of the Asia-Pacific Metrology Programme (APMP) - Asia Pacific Accreditation Cooperation (APAC) (the then Asia Pacific Laboratory Accreditation Cooperation) Joint Proficiency Testing Working Group (PTWG). The purposes of the study are (i) to assist participating laboratories to demonstrate their capabilities in determining the mass fractions of three analytes (arsenic (total), inorganic arsenic and cadmium) at mg/kg levels in a test sample of powdered rice; and (ii) to identify areas for improvement.
2. A total of 63 laboratories from 23 economies enrolled in the PT programme and 57 of them, which were free to choose any techniques for measurement, returned the Result Proforma to GLHK within the scheduled timeline.
3. The reference values provided by GLHK were used as the assigned values for evaluating the performance of participants. The standard deviation for proficiency assessment was derived from the Horwitz Equation. The z-scores were used to show the performance of participants with respect to the assigned values of the analytes of interest.
4. Assigned values, standard deviation for proficiency assessment, robust average of the participants' results and robust standard deviation of the participants' results are summarized as follows:

	Arsenic (total) mg/kg	Inorganic arsenic mg/kg	Cadmium mg/kg
Assigned value	0.211	0.184	0.317
Standard deviation for proficiency assessment	0.043	0.038	0.060
Robust average	0.209	0.163	0.293
Robust standard deviation	0.0465	0.0426	0.0426
Standard uncertainty of the robust average	0.00849	0.0119	0.00718



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5. The participants' z-scores on the three analytes are summarized as follows:

z-Score	Number of Participants (Percentage)		
	Arsenic (total)	Inorganic arsenic	Cadmium
$ z \leq 2.0$	37 (77.1%)	16 (76.2%)	50 (89.3%)
$2.0 < z < 3.0$	5 (10.4%)	1 (4.8%)	2 (3.6%)
$ z \geq 3.0$	6 (12.5%)	4 (19.0%)	4 (7.1%)
Total:	48 (100%)	21 (100%)	56 (100%)

*****End of Report*****