

Pesticides in Fruit Proficiency Testing Scheme Description

NMISA-PT-144 Round 1 – Pesticides in Kiwi

NMISA-PT-144 Round 2 – Pesticides in Mandarin

NMISA-PT-144 Round 3 – Pesticides in Avocado

FOREWORD

This is the call for participation in, and description of the NMISA proficiency testing (PT) scheme for the determination of pesticide residue in fruit. Participants will be required to report on the pesticides which form part of their routine laboratory services. A confidential report will be issued to all participants after completion of the PT scheme. Information on the pesticides included in the PT; dates for distribution; and reporting are listed in **Table 1**.

This forms part of a range of ISO 17043 accredited PT services offered by NMISA. Please consult our website www.nmisa.org for information on PT schemes on offer. NMISA can also assist with the preparation of traceable gravimetrically prepared spike solutions for benchmarking *ad-hoc* analyses, for which commercial PT schemes are not available.

SCHEME AIMS

This scheme will assist laboratories that routinely analyse pesticides in food commodities to monitor their laboratory performance. The PTS allows laboratories to evaluate their accuracy and comparability of measurement results produced; the continued competency of analytical staff; and the maintenance and effectiveness of the current quality assurance systems within the laboratory. In addition, this information may also be used to provide accreditation bodies or clients with objective evidence of laboratory performance.

PARTICIPATION FEES AND ADDITIONAL CHARGES

The cost of participation in the PT scheme is R 4 850. These rates exclude costs associated with delivery (0% VAT, please note that we are not a VAT registered company). This fee includes the material and a confidential report upon completion. Upon registration for participation an official quotation will be provided. Participation is confirmed following receipt of a purchase order and/ or proof of payment.

Since many of the South African participants are located within proximity to NMISA, the option of collecting the PT scheme samples from NMISA premises is permitted.

International laboratories will have test samples sent by courier and appropriately packaged to maintain sample integrity. International participants must provide NMISA with any import or quarantine permits that might be required to complete sample delivery well in advance of the shipment date. Please note participants are liable for any customs or import duties charged. It remains the participants responsibility to ensure custom documents and requests are seen to expediently to ensure the sample is not held in customs.

PT SCHEME DESCRIPTION

The timeline for the PTS is presented in **Table 1**. Laboratories are requested to report results for as many of the parameters specified as possible, to allow for maximum benefit from the participation. This study is designed to support laboratories routinely performing pesticide analysis. The levels of the analytes should be easily achievable using analytical methods typically applied, however care should be taken to ensure maximum recovery and monitor potential matrix effects. Instructions for proper handling and storage of the samples prior to sample preparation will accompany the PT scheme samples. Participants should adhere to these instructions to ensure sample integrity and comparability of the results.

Table 1: PTS details for NMISA-PT-144 Pesticide residues in fruit slurry.

NMISA-PT-144		Sample format	Distribution/ Dispatch	Result reporting
Parameters* Please note that not all analytes will be present in the sample	Residues: 1,4-dimethylnaphthalene; Azoxystrobin; Acibenzolar-S-methyl; Acibenzolar acid; Benzalkonium chloride; Bromopropylate; Buprofezin; Carbendazim; Benomyl; Chlordecone; Cyflumetofen; Cyfluthrin; Deltamethrin; Didecyldimethylammonium chloride; Emamectin B1a; Etofenprox; Fludioxonil; Furfural; Imazalil; Mefentrifluconazole; Methamidophos; Acephate; Methomyl; Omethoate; Oxathiapiprolin; Prochloraz; Propiconazole; Pymetrozine; Pyrethrins; Triclopyr Concentration range: 0.01 – 50 mg/kg	Each round will be distributed with the following samples: 2 x 50 g Sample 1 x 50 g Blank	Round 1 Pesticides in Kiwi	
			May 2026	Aug 2026
			Round 2 Pesticides in Mandarin	
			Sept 2026	Dec 2026
			Round 3 Pesticides in Avocado	
			Nov 2026	Feb 2027
Result Reporting	Participants will be required to perform the analysis using their normal laboratory procedures and are required to report <u>two results for each parameter measured.</u> Participants are encouraged to include an uncertainty estimate for each result obtained and provide information on measurement traceability. The result reporting form will be distributed to participants and will request additional information on the measurement technique and parameters, any recovery correction application, calibration standards used etc.			
PT conduct	<p>Collusion and falsification of results: The falsification of results and/ or collusion, either between participants or between participants and the scheme provider, is deemed to be unethical and contrary to professional conduct. Therefore, any form of collusion or result falsification is discouraged.</p> <p>Test samples: The test samples will consist of a homogenised raw fruit slurry that has been spiked with a known concentration of selected pesticides from the pesticide list above. For each round a participant will be provided with two portions of test sample (50 g). A portion of the un-enriched commodity that may contain trace levels of pesticide residues, not enriched within the specific round, will also be provided to be used as a blank control.</p> <p>Assigned value: The PT value will be determined using the gravimetrically spiked values or the participant consensus value depending on the number of participant results received.</p> <p>Laboratory performance: The participant data will be processed according to ISO 13528 (Statistical methods for use in proficiency testing by interlaboratory comparisons). A z-score will be used to determine the individual laboratories performance.</p> <p>Standard deviation of proficiency assessment: The modified Horwitz model will be used to estimate a standard deviation of proficiency assessment. The standard deviation of participant results will also be included in the final PT report for reference and comparison to the modified Horwitz prediction.</p> <p>PT report: The PTS report will be distributed within 2 weeks following the result submission deadline. Reports will be provided in electronic format only (Adobe Acrobat- pdf) files. The scheme is fully confidential. Each participant will be issued with a unique identification number. For multiple participants within the same laboratory the participating laboratory is required to identify its analysts by a code known only to the laboratory.</p>			