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# **NMISA-PT115**

## **Proficiency Test Description**

### **Vitamin A and proximates (protein, moisture and ash) in a Fortified Food Matrix (Wheat flour)**

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## 1 FOREWORD

This is the call for participation in, and description of the NMISA proficiency test (PT) for the determination of Vitamin A palmitate and proximates (protein, moisture and ash) in a fortified wheat flour. A confidential report will be issued to all participants after completion of the PT. Information on the expected measurand ranges, as well as dates for distribution and reporting are listed in **Table 1**.

This forms part of a range of ISO/IEC 17043 accredited PT services offered by NMISA. Please consult our website [www.nmisa.org](http://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.

## 2 PT AIMS

This PT will assist laboratories that routinely analyse vitamin A, protein, moisture and ash content in food matrices, to monitor their laboratory performance. The PT 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.

## 3 PARTICIPATION FEES AND ADDITIONAL CHARGES

The cost of participation in the PT is R 5 500. This fee includes the material and a confidential report upon completion, but exclude costs associated with delivery (0% VAT, please note that we are not a VAT registered company). 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 close proximity to NMISA, the option of collecting the PT 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 and are liable for any customs or import duties charged.*

## 4 PT DESCRIPTION

The timeline for the PT 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 vitamin A and proximate analysis in grains. The levels of the analytes should be easily achievable using analytical methods typically applied. Instructions for proper handling and storage of the samples prior to sample preparation will accompany the PT samples. Participants should adhere to these instructions to ensure sample integrity and comparability of the results.

**Table 1: PT details for NMISA-PT115 Vitamin A and proximates in Fortified Wheat flour.**

NMISA-PT115 Vitamin A and proximates in Fortified Wheat flour		Sample format	Distribution/Dispatch	Result reporting
<b>Parameters*</b>	<u>Vitamin A Palmitate:</u> 0.05 – 0.25 mg/100 g <u>Protein:</u> 5.0 – 20 g/100g <u>Moisture content:</u> 5.0 – 20 g/100g <u>Ash content:</u> 0.1 – 5.0 g/100g	100 g fortified milled wheat	June 2024	July 2024
<b>Result Reporting</b>	<p>Participants will be required to perform the analysis using their normal laboratory procedures and are required to report <b><u>two results for each parameter measured in the sample provided.</u></b></p> <p>Participants are encouraged to include an uncertainty estimate for each result obtained. 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.</p>			
<b>PT conduct</b>	<p><b>Assigned value</b></p> <ul style="list-style-type: none"> <li>The assigned value will be the robust consensus values from participant results (depending on the number of results received) or expert, ISO/IEC 17025 accredited, laboratory(ies).</li> </ul> <p><b>Laboratory performance</b></p> <ul style="list-style-type: none"> <li>Laboratory performance will be evaluated using the z-score.</li> </ul> <p><b>Standard deviation of proficiency assessment</b></p> <ul style="list-style-type: none"> <li>The modified Horwitz model will be used to estimate a standard deviation of proficiency assessment for the Vit A content.</li> <li>The standard deviation of participant results will be employed for the proximate content.</li> </ul> <p><b>PT report</b></p> <ul style="list-style-type: none"> <li>The PT report will be distributed within 2 weeks following the result submission deadline. Reports will be provided in electronic format only (Adobe Acrobat- pdf) files.</li> <li>The PT 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.</li> </ul>			

\* Analytes and/or matrix are subject to change.