



The Food and Environment Research Agency

## Protocol for Proficiency Testing Schemes

Version 2, January 2012

Part 3 – FEPAS<sup>®</sup>

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## PREFACE

This Protocol is a series of inter-related documents. This document, Part 3, sets out specific details for the Food Examination Performance Assessment Scheme (FEPAS<sup>®</sup>). Although this document duplicates some of the text in Part 1 – Common Principles, it **cannot** be used in isolation. Part 3 must always be read in conjunction with Part 1 and vice versa.

## VERSION HISTORY

This Protocol was completely revised in 2009, superseding all proficiency testing scheme Protocols previously published by the Food and Environment Research Agency (previously, Central Science Laboratory), i.e. all previous editions of the separate FAPAS and FEPAS Protocols.

Version 2 of January 2012, this version, supersedes Version 1 of November 2009. The changes are as follows;

1.2 Amendments to reflect publication of standard ISO/IEC 17043 and compliance with its requirements.

3.1 Addition of procedure description for test material preparation and homogeneity testing. Correction of verification of qualitative test materials. Addition of verification details being published in Reports.

3.3 Amendments to reflect electronic documentation and issuing of instructions for test samples.

3.4 Electronic reports for sale, not hardcopy.

4 Yeasts and moulds assessment clarification.

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# **1. INTRODUCTION**

## **1.1. Fera, Defra, PTG and FAPAS**

The Food and Environment Research Agency (Fera) is an Executive Agency of the UK Government Department for Environment, Food and Rural Affairs (Defra). Fera provides a wide range of proficiency testing (PT) schemes.

The management of these PT schemes is the sole task of one of many teams within Fera. Known internally at Fera as the Proficiency Testing Group (PTG), this team provides Fera's PT schemes globally under the brand name of FAPAS PT. The Food Examination Performance Assessment Scheme (FEPAS<sup>®</sup>) is one of these PT schemes.

For the purpose of this Protocol we use FAPAS PT to mean Fera PTG.

## **1.2. Accreditation**

FEPAS<sup>®</sup> is accredited by the United Kingdom Accreditation Service (UKAS). Accreditation is conferred upon FEPAS<sup>®</sup> in accordance with ISO/IEC 17043:2010 [1].

The formal schedule of the accreditation can be obtained from the United Kingdom Accreditation Service (UKAS) web site (Adobe PDF format) [2].

# **2. ORGANISATION OF FEPAS<sup>®</sup>**

## **2.1. Management System**

The scope of accreditation covers all aspects of the PTs organised by FEPAS<sup>®</sup>:

- Detection tests (qualitative)
- Enumeration tests (quantitative)
- Single target organisms and combinations of target organisms
- Inclusion of background flora in most test materials, to simulate real samples

# **3. PARTICIPATION IN SCHEMES**

## **3.1. Test Material Preparation and Homogeneity**

All FEPAS<sup>®</sup> test material preparation and homogeneity testing is carried by subcontracting laboratories. Details of test material preparation and homogeneity results are retained by FEPAS<sup>®</sup> but no longer published in the reports. Verification of test materials for the qualitative PTs is carried out by subcontracting laboratories. Verification results for the qualitative PTs are published in the reports.

Participants may contact FAPAS PT to request details of test material preparation and homogeneity testing, where it is pertinent to their assessment. Such details may be released on request, except where this compromises data which is commercial in confidence.

## 3.2. Dispatch and Receipt of Test Materials

All FEPAS<sup>®</sup> test materials are sent to participants outside the UK by courier, and so can be tracked on-line throughout their journey. It is the responsibility of the customer to anticipate an email on the day of dispatch advising them of the tracking number and then to monitor the progress of their samples. It is particularly important for non-UK participants to track their samples to ensure a smooth transit through their country's Customs. FAPAS PT cannot be held responsible for delays arising at Customs. Participants within the UK are sent their FEPAS<sup>®</sup> test materials by standard post.

## 3.3. Analysis of Test Materials

It is the responsibility of participants to read the instructions (provided electronically via email or downloaded from the FAPAS PT website, [www.fapas.com](http://www.fapas.com)) and follow them exactly prior to conducting the actual analysis of the test material. FEPAS<sup>®</sup> cannot be held responsible for any problems arising from failure to comply with these instructions.

Some of the FEPAS<sup>®</sup> test materials require preparation (usually re-hydration) by participants before analysis. Instructions for this procedure can be downloaded from the FAPAS PT website. FEPAS<sup>®</sup> PTs additionally have a timeframe (stipulated in the instructions) within which the analysis should be completed, due to organism/matrix stability.

Example instructions are available on request from FEPAS<sup>®</sup>.

## 3.4. Follow-Up Services

FAPAS PT does not sell surplus test materials from the batches used for FEPAS<sup>®</sup> PTs (due to their limited shelf life).

Most FEPAS<sup>®</sup> reports issued since 2000 are available for purchase. Prices are available on request. Participants in all the FAPAS PT schemes have free access to an electronic copy of reports for those tests for which they have registered. Electronic copies of reports are available on request and a charge will be made for these.

If a participant wishes to obtain advice on any aspect of their performance they should contact FEPAS<sup>®</sup> by email ([info@fapas.com](mailto:info@fapas.com)) in the first instance. Participants must note that FEPAS<sup>®</sup> may offer assistance in the form of a broker service whereby FEPAS<sup>®</sup> will either anonymously or, subsequent to all parties agreeing to waive their confidentiality, pass on the participant's inquiry to an expert laboratory/external advisor.

## 4. PERFORMANCE ASSESSMENT

FEPAS<sup>®</sup> PTs for detections (qualitative assessments) express participants' results as either satisfactory (S) or not satisfactory (NS), as compared to the intended result (for a spiked and verified test material).

Enumeration FEPAS<sup>®</sup> PTs (quantitative assessments) express participants' results as z-scores. The assigned value is the consensus of participants' valid results. Results reported by participants are first log transformed (to units of  $\log_{10}\text{cfu/g}$ ), prior to the statistical assessment, to obtain the normal distribution. Hence, the formula for calculation of z-scores is modified to;

$$z = \frac{(\log_{10} x - \log_{10} x_a)}{\sigma_p}$$

where  $x$  is the participant's reported result

$x_a$  is the assigned value

and  $\sigma_p$  is the standard deviation for the proficiency test.

The standard deviation for proficiency assessment is derived from retrospective FEPAS<sup>®</sup> data and a value of 0.25 log<sub>10</sub>cfu/g is applied. This approach is supported by the Advisory Committee.

A special assessment applies to yeasts and moulds, in which this is a combined qualitative and quantitative assessment. Participants will be assessed both on their ability to identify the correct organism (qualitative, if appropriate to the test) and on their ability to enumerate the organism (quantitative).

## 5. REFERENCES

- 1 ISO/IEC 17043:2010, Conformity assessment – General requirements for proficiency testing.
- 2 <http://www.ukas.com/about-accreditation/accredited-bodies/proficiency-testing-organisations.asp>

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