

APPENDIX 15

Proficiency (ring) testing scheme requirements

The following are minimum requirements of a proficiency or ring testing scheme recognised by AIC/TASCC.

The scheme and/or provider must be independently approved e.g. UKAS or ISO accredited against:

ISO/IEC Guide 43: 1997, Part 1: 'Proficiency Testing by Interlaboratory Comparisons Development and operation of Proficiency Testing Schemes'

The International Harmonised Protocol for the Proficiency Testing of (Chemical) Analytical Laboratories, M Thompson and R Wood, JAOAC International, Vol 76, No 4, 1993, pp 926-940

Or, the scheme and or provider must demonstrate compliance with the following requirements:

The scheme or provider must have a manual detailing the requirements and procedures (P) below that would form the basis of an audit.

Scope and parameters

The scheme provider must define the scope of the scheme including the commodity and parameters provided and the frequency and numbers of samples and reports provided (P)

Participant information

The scheme must maintain a register of participants and issue proof of membership to participants e.g. membership certificates, which includes the members scope and any individual identification e.g. membership or reporting number (P)

Sourcing sample material

Where possible original material sourced must be homogenous as possible e.g. from a single source and stable ie not subject to deterioration.

Where material is used from more than one source sample preparation must be sufficient to ensure as much homogeneity of sub-sample as possible (P)

Sample preparation, packaging and distribution

The preparation of sample material must include adequate blending and other preparation e.g. cleaning/screening to ensure as much homogeneity as possible (P)

All ring check samples produced must be:

- Of sufficient volume to enable accurate testing
- Packaged to maintain their stability and integrity
- Uniquely labelled and identifiable
- Homogenous
 - to check the preparation procedure produces homogenous samples; homogeneity testing is required to be carried out a minimum of once every 6 months during the PT Scheme year.
 - 10% (or 4 samples, whichever is the larger), of the samples prepared for each commodity must be checked for homogeneity.
 - A minimum of two parameters must be checked on each sample and meet the repeatability figures as given in Appendix 17.

Data collation

The scheme must have a documented recording and reporting system for results and a reliable communication method

It is recommended that standardised report sheets are used which obtain the following information:

- Participant name or reference number
- Samples and tests requested

- Method
- Results
- Signed and dated by participant
- Submission deadline
- Submission details, e.g. address/fax number

The scheme must have a target turnaround from dispatch to reporting to enable participants to react to results within a month

Reporting

The scheme must report results in a clear and unambiguous manner and must include the use of z-scores to indicate acceptable performance.

The assigned values for each parameter should be calculated in one or both of the following ways:

- Mean reference result (minimum x3)
- Participants robust mean of results (minimum x8)

Where both calculations are used then an explanation on how to interpret the results must be given to the participant.

The mean reference result is the mean result from a minimum of three Testing Facilities that have performed the test by the reference method. Testing Facilities may or may not be participants of the scheme but all must hold appropriate accreditation e.g. TASCC, GAFTA, UKAS for the method used.

Where KERN reference data is being used to produce the mean reference result for Specific Weight, KERN equipment must meet the requirements of BS ISO EN 7971-2:2009 (Determination of bulk density, called mass per hectolitre. Part 2: Method of traceability for measuring instruments through reference to the international standard instrument).

The participants robust mean result is the robust mean result calculated from a minimum of 8 participants of the scheme whatever test method is used. Where results of participants fall outside of acceptable tolerances as defined by the scheme, these need not be used for mean calculations.

Where results are available from both methods, providers should report both results, but it must be clearly stated which results are used for z-score calculation.

A participant's z-score must be calculated using the following:

$$\text{Z-score} = \frac{\text{Facility's result} - \text{Assigned value}}{\text{Established standard deviation}}$$

Standard deviation values no greater than those given in the *AHDB Cereals & Oilseeds Grain Testing – Standard Values* must be used for the calculation of z-scores.

PT Scheme Providers

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UK Grain Testing Network

Sciantec Analytical Services Ltd

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CAWOOD

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YO8 3SD

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Commodities: Barley, Oats, Oilseed Rape, Wheat, Beans

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Commodities: Barley, Beans, Oats, Oilseed Rape, Peas, Wheat (others on request)

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Commodities: Barley

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