



## **8. Activity Report of the Proficiency Test (Referee) Committee 2003/2004**

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### **Membership**

Chairperson:	Mr. Doug Ashton	CA-Canada
Vice-Chairperson:	Dr. Günter Müller	DE-Germany
Members:	Mr. Ken Allison	CA-Canada
	Mrs. Patricia Brownfield	US-United States
	Mrs. Sharon K. Davidson	US-United States
	Mr. Didier Demilly	FR-France
	Mr. Alexander B. Ednie	CA-Canada
	Mr. Tim Gutormson	US-United States
	Mr. Joël Léchappé	FR-France
	Mrs. Jette Nydam	DK-Denmark
	Dr. Rita Zecchinelli	IT-Italy

### **Activity Report**

This report addresses the terms of reference established for the period 2001-2004.

- 1. Prepare, distribute, analyse and report nine referee rounds.** Since the 2001 meeting in Angers, eight Rounds have been distributed, with the ninth, 04-2 *Helianthus annuus*, scheduled for June 2004. In addition to the statistical analysis of purity, germination and other seed determination results, a review of reporting procedures using the Orange Certificate was conducted for 03-1 *Trifolium incarnatum*. Delays were experienced in the feedback to participants starting with 02-3 *Pisum sativum*, with diminishing delays through 04-1, due to implementation of a new software system for analysis of the data and rating of laboratory performance (see item 8, below). We apologise for these delays. We fully expect to be back on schedule with Round 04-2 to be distributed in June.
- 2. Collaborate with the Moisture Test Committee to prepare a moisture test referee for cereals in 2003.** The Moisture Test Committee, Secretariat and Proficiency Test Committee collaborated to design, prepare and distribute the first moisture proficiency test with Round 03-1 *Trifolium incarnatum*. Further information is provided in the activity report of the Moisture Test Committee and in Seed Testing International (October 2003, No 126). A second moisture PT was distributed with Round 04-1 wheat (*Triticum aestivum*). These same wheat lots were used for a first Tetrazolium proficiency test prepared by the Tetrazolium Committee. A pilot proficiency test on conductivity of *Pisum sativum* was distributed by the Vigour Test Committee in 2003. The PT committee also provided advice to the Seed Health, Flower and Forest tree and shrub committees, on the procedures for setting up proficiency tests.



3. **Institute the "General Conditions for Participation in the ISTA Referee Test Programme", starting with Round 02-1 and using results from 97-1 forward.** The "General Conditions", first published in 2001, elaborated the method for using proficiency test data to assign a performance rating to laboratories for purity, germination and other seed determination. This rating method was integrated into the new statistical analysis software, and implemented starting with Round 02-3, germination of *Pisum sativum*. The Committee, in consultation with the Executive Committee, decided not to include earlier Round data because laboratories were not previously aware of this use of their results. In addition to the in-Round rating system, a method was developed to combine the performance over six Rounds to provide an overall lab rating for each test method. The rating system has been designed to be applicable to all test methods in order to offer participants a consistent measure of performance.
4. **Carry out mini referees as required.** Mini-referees allow the 3-year proficiency test program to be condensed into a single testing exercise in order to provide the laboratory auditors information on the laboratory's testing proficiency. Two "mini-referees" for member laboratories applying for accreditation were completed in July, 2002. No further requests for this service have been received.
5. **Collaborate with the Purity Committee to develop an objective method to evaluate other seed determination performance.** Other Seed Determination performance has been integrated into the laboratory rating system and is based on the percentage correct retrieval and identification of impurities added to the samples. The Purity Committee completed a survey to determine the most commonly encountered crop and weed species and the Proficiency Test Committee is now using this list as the basis for selecting impurities for use in proficiency tests.
6. **Complete preparation of a protocol which details the Referee Test Committee procedures.** The procedures of the Proficiency Test Committee are given in two documents. The first, *Proficiency Test Sample Preparation Instruction*, provides detailed step-by-step instructions to the test leaders, from selection of appropriate seed lots through packaging for distribution to participating laboratories. The second document, *The ISTA Proficiency Test Programme*, defines the programme and explains the steps and framework in which it is operated, including design, obligations of participants, statistical evaluation method and the laboratory rating system. This document was distributed in November, 2003, and is posted on the ISTA Web site. Members are encouraged to read it carefully.
7. **Compare the existing referee procedures with the ISO43 international guidelines for proficiency testing, to determine if improvements should be made.** At the time of writing this report (December, 2003), comparison of the ISTA PT programme with ISO Guide 43 had not been initiated. This work should be complete by the time of the ISTA Congress, May 2004. A report on the comparison findings will be published in Seed Testing International.
8. **Review the statistical analysis software system to determine if it can be improved.** Until Round 02-3, the proficiency test data had been evaluated using an SAS statistical analysis software application designed specifically for the ISTA Referee Test Programme. While this software served the PT programme well over many years, it had the disadvantage of requiring knowledge of the original programming in order to make changes. This knowledge was not readily available which hampered modification and development. Consequently, starting in 2002, the Secretariat initiated development of a new computer program to evaluate and report the proficiency test data. The new software became functional in 2003 and underwent validation testing by double-entry of results and comparison of output using the new and old systems. The new system, using Microsoft Access, is more user friendly than the old system and should allow improved flexibility to



adapt to developments in the proficiency test programme. The first output report was distributed with results from Round 02-3 in November 2003.

### **Future Aims**

The following are proposed Terms of Reference for the period 2004-2007. These will be discussed and amended as appropriate by the new Proficiency Test Committee at the 2004 Congress:

1. Prepare, distribute, analyse and report nine proficiency test rounds.
2. Collaborate with the Vigour, Flower, Seed Health, Tetrazolium and Forest Tree and Shrub Committees to develop proficiency test pilots with the aim of integrating these tests into the programme.
3. Continue to refine the statistical analysis procedures for analysis of the PT data.
4. Carry out mini referees as required.
5. Review the groupings of crop kinds and representative genera to determine if these continue to be appropriate.
6. Hold a workshop for PT test leaders, Committee members and Secretariat staff, to review the sample preparation procedures.

### **Acknowledgements**

I wish to take this opportunity to express sincere thanks to the Committee members, and their employers, who have contributed significantly to make the ISTA Proficiency Test Programme work. Each test leader has devoted a lot of time and resources to finding, testing and preparing the samples and reviewing the results. Prof. Dr. Michael Kruse wrote the new software application for analysis of the data and continues to provide support to the Secretariat and Committee when technical issues arise. Mr. Sandy Ednie, the previous Committee Chair, provided valuable advice to ensure continuity in the programme. The staff of the Secretariat's Accreditation Department, namely Martina Rösch, Gerhard Schuon and Ana María Vazquez not only keep the programme running with great dedication and hard work, but have been key to its ongoing development.