

POSTGRADUATE COURSE ON SOIL AND PLANT ANALYSIS AND DATA HANDLING

Wageningen, The Netherlands

Cancelled

5 November – 30 November, 2012



INTRODUCTION

In the fields of soil fertility, soil chemistry and soil hygiene knowledge and understanding of the behaviour of nutrients and pollutants have augmented substantially in recent years. This has resulted in the application of improved and more advanced analytical methods for soils, plants and sediments, often requiring the use of increasingly sophisticated instrumentation. These developments, together with the growing numbers of samples many laboratories are presented with, make high demands on analytical and computing skills. To keep abreast of developments, staff charged with laboratory work in soil and plant analysis should upgrade their knowledge and skills in these new areas.

The Department Soil Quality of the Wageningen University (WU) offers its regular students courses on soil and plant analysis at a postgraduate level. Parts of these courses are now available to others through the establishment of this Short Postgraduate Course (4 weeks) on Soil and Plant Analysis and Data Handling.

The course is a possible tool towards better laboratory performance, insight in procedures, and management. Improvements may be expected in efficiency and quality. Improved quality control can minimize errors and ensure customer satisfaction, whereby the reputation of the laboratory could be enhanced.

OBJECTIVES

The course aims to provide participants with up-to-date knowledge, practical experience and insights in instrumental analysis, soil and plant analysis, laboratory management and data handling.

TARGET GROUP

The course is designed for senior staff who are responsible for, or engaged in laboratory work on soil and plant analysis and have at least a B.Sc. degree (or its equivalent).

ORGANIZATION

The International Postgraduate Course on Soil and Plant Analysis and Data Handling is organized by the Wageningen University (WU), the Netherlands. The course will be held on the premises of the WU and will be conducted in the English language.

Course directors are Dr. E.J.M. Temminghoff (e-mail: erwin.temminghoff@wur.nl) and Drs. A. Eijgenraam (e-mail: bram.eijgenraam@wur.nl) of the Department Soil Quality of the Wageningen University. For more information see also our website: www.soq.wur.nl/UK/education/courses

COURSE PROGRAMME

The programme comprises lectures, tutorials, practicals and some excursions and can be summarized as follows:

- 1. Instrumental analysis** (1 week): Introduction to various analytical techniques (mainly spectrometry) including flame AAS and graphite tube AAS (with different background correction systems), ICP-AES, HR-ICP-MS. Besides refreshing basic knowledge, emphasis is laid on understanding the principles of the techniques, recognizing possible interferences and eliminating these. A variety of equipment is used in order to demonstrate and practise these techniques. All these activities are supported by a syllabus, review articles, research reports, and other written material, handed out on the first day.
- 2. Plant analysis** (1 week): Practical exercises on various digestion and extraction techniques for plant material and on determination a variety of chemical components, using manual as well as automated methods.
The analytical procedures used are discussed here in more detail with respect to their applicability on plant material, including the interferences brought about by the plant tissue matrix. Attention is also paid to aspects of sampling and pre-treatment. An extensive plant analysis procedures manual is provided.
- 3. Soil analysis** (1 week): Practical exercises on various digestion and extraction techniques for soil and on determination of a variety of chemical components and soil characteristics, using manual as well as automated methods. The choice of the different soils for this purpose depends on the interest of the participants. The suitability of the different analytical procedures for the determination of the required parameters (soil characteristics or availability indices) form the subject of discussions. Attention is also paid to aspects of sampling and pretreatment. An extensive soil analysis procedures manual is provided.

4. **Data handling and laboratory management** (1 week): Aspects of quality control of analytical results. Good (Automated) Laboratory Practice (GALP), and of organization and operation of a routine laboratory are discussed. The basic principles of a Laboratory Information Management System (LIMS) are treated. Use of reference materials and participation in a proficiency testing scheme as organised by Wageningen Evaluating Programmes for Analytical Laboratories; see also www.wepal.nl). A textbook on quality assurance is included.
5. **Excursions:** Several research institutes and industries will be visited with particular attention to their laboratories.

Instead of 1 week plant and 1 week soil analysis also 2 weeks plant analysis or 2 weeks soil analysis is possible.

CERTIFICATE

A Certificate will be awarded to successful participants.

REQUIREMENTS FOR ADMISSION

Applicants should meet the following requirements:

1. at least a BSc degree or its equivalent in agriculture, biology or chemistry;
2. basic laboratory work experience or proof that the candidate is going to be engaged in soil and plant analysis; and
3. proficiency in the English language.

FEES/ACCOMMODATION

Tuition fees amount to € 4,000; this amount includes administration fees, the costs of lecture materials, use of instruments, excursions, etc. in so far as they are included in the programme. The fees do not include international travel, board and lodging. The course is **residential**. Participants will be accommodated in the hotel 'Hof van Wageningen' on the basis of full board and lodging are about € 105 per day. The organizers reserve the right to cancel the course without indemnity subject to the return of the course fee already paid.

INFORMATION AND APPLICATION FORM

For more information about the course and application form please have a look at: www.sog.wur.nl/UK/education/courses or contact Dr. E.J.M. Temminghoff (e-mail: erwin.temminghoff@wur.nl).