Announcement of a European Inter-Laboratory Comparison Study on the Quantitation of Polycyclic Aromatic Hydrocarbons (PAHs) in Primary Smoke Condensate

Organised by the Institute for Reference Materials and Measurements of the European Commission's Directorate-General Joint Research Centre

Background

In 2002, the European Commission's Scientific Committee on Food (SCF) assessed 33 polycyclic aromatic hydrocarbons (PAHs) and found that due to their toxic properties 15 of them were of major concern for human health and should be monitored to enable long-term exposure assessments (SCF 2002). In November 2003 a new regulation came into force defining maximum permitted concentrations for benzo[*a*]pyrene (10 µg/kg) and benz[*a*]anthracene (20 µg/kg) in materials to be used for the production of smoke flavourings for human consumption (EU 2003). The regulation requires the registration of those materials before their introduction on the European internal market. In 2005 the Joint FAO/WHO Expert Committee on Food Additives identified one additional compound that should be monitored as well (JECFA 2005). These 15+1 analytes (16 EU priority PAHs) are targeted by this collaborative trial (see below).

Objective

The aim of this study is to provide to expert laboratories the possibility to assess their performance for the analysis of PAHs in primary smoke condensates (PSC). From the list of analytes given below, at least benzo[*a*]pyrene and benz[*a*]anthracene have to be analysed as both are regulated for PSC.

Test Materials and Analytes

Two individual samples of a liquid smoke condensate mixture spiked with the 16 PAHs of concern will be supplied to the participants for analysis.

The target analytes are:

benzo[*c*]fluorene, benzo[*a*]anthracene, benzo[*b*]fluoranthene, benzo[*j*]fluoranthene , benzo[*k*]fluoranthene, benzo[*ghi*]perylene, benzo[*a*]pyrene, cyclopenta[*cd*]pyrene, dibenzo[*a,h*]anthracene, dibenzo[*a,e*]pyrene, dibenzo[*a,h*]pyrene, dibenzo[*a,i*]pyrene, dibenzo[*a,l*]pyrene, indeno[*1,2,3-cd*]pyrene, chrysene, and 5-methylchrysene.

General Outline of the Exercise

The participants are requested to perform replicate analyses on the samples applying a method of their own choice. Methods based on GC/MS as well as LC/FLD have been recently validated by collaborative trial (Palme *et al.* 2005; Simon *et al.* 2006a, b).

As one of the PAHs has shown to be unstable, the given period of time for analysis will be very narrow, max. 10 days after **dispatch date** that is scheduled for **20 June 2006**. The dispatch date will be confirmed one week in advance.

Registration and reporting of results have to be done via the WEB based interface of DG JRC-IRMM:

http://www.irmm.jrc.be/imepapp/registerForComparison.action?comparison=75

Please fax the confirmation form to +32 (0)14 571 343.

DEADLINE FOR REGISTRATION: 15 May 2006.

Literature

EU (2003). *"Regulation (EC) No 2065/2003 of the European Parliament and of the Council of November 2003 on smoke flavourings used or intended for use in or on foods."* Official Journal of the European Union L 309 of 26 November 2003 p.1-8. http://europa.eu.int/eur-lex/lex/LexUriServ/LexUriServ.do?uri=CELEX:32003R2065:EN:HTML

JECFA (2005). *Joint FAO/WHO Expert Committee on Food Additives, Sixty Fourth Meeting*, Rome, JECFA.

Palme, S., R. Simon and E. Anklam (2005). "*Validation of two Methods for the Quantification of Polycyclic Aromatic Hydrocarbons in Primary Smoke Condensates: Report on the Collaborative Trial*." Report EUR 21679 EN.

SCF (2002). *Opinion of the Scientific Committee on Food on the risks to human of Polycyclic Aromatic Hydrocarbons in food*. Brusseles, European Commission.

Simon, R., S. Palme and E. Anklam (2006a). "*Single-laboratory validation of a gas-chromatography mass-spectrometry method for quantification of 15 European priority polycyclic aromatic hydrocarbons in spiked smoke condensates*." Journal of Chromatography A 1103: 307–313.

Simon, R., S. Palme and E. Anklam (2006b). "*Determination of the 15 European Priority PAHs in Primary Smoke Condensates by GC-MS: Collaborative Validation*." Journal of AOAC International *in press*.