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DIRECTORATE-GENERAL FOR HEALTH AND FOOD SAFETY
Food and feed safety, innovation

DIRECTORATE-GENERAL JOINT RESEARCH CENTRE
Health Consumers and Reference Materials

Summary Report of the Joint DG JRC- DG SANTE SYMPOSIUM

Nanomaterials in Food: Reliability of measurement results, 3-4 May 2017, Ispra, Italy

The one and one half days Symposium was co-organised by DG JRC and DG SANTE at the JRC premises in Ispra, Italy on 3-4 May 2017. Attending the meeting were about 80 participants coming from the Member States (MS), the Commission (SANTE, JRC, ENV), EFSA, and from society at large (food industry, academia).

The main objectives of the Symposium were to:

- Map the needs for nanomaterial risk assessment, risk management, regulation and enforcement and the state of play in the corresponding area of nanomaterials characterisation (analytical methods, standards, etc.);
- Hear the stakeholder (industry, consumers), risk assessor, and Member State perspectives and expectations;
- Establish the basis and a roadmap for future activities and collaboration;

The Symposium programme was divided into five sessions: four thematic sessions comprising of short presentations and short discussions with questions and answers, and one final concluding session consisting of two parts, first, the presentation of the responses of the Member States to a questionnaire focusing mainly on analytical capacities and needs, and second, a more general Panel discussion and conclusions part.

First day: Three sessions were organised as follows:

- **Session 1** focused on EU legislation and risk assessment (5 presentations). There were two presentations by the Commission services, one on the latest developments concerning the revision of the definition of nanomaterial and a second one on nanomaterials in the Food and Food Contact Material (FCM) regulatory context. The third presentation from EFSA provided an overview of the evolution of their work to update the 2011 guidance for the risk assessment of nanomaterials in Food. The last two presentations of the session were by industry representatives, who provided the sectors' points of view on the nanomaterial definition, and on the need and development of analytical methods for nanomaterial labelling and risk assessment.

- **Session 2** dealt with the analytical challenges in the identification and characterisation of nanomaterials on the ingredient level, as well as in complex matrices. There were four presentations from the JRC, BE, NL and AT experts, the latter three focusing on food and food additives and on non-foods (cosmetics). The presentations provided a critical review of available methodologies, highlighting their strengths and their limitations but also identifying the needs for more work to develop and validate standardised methodologies and reference materials and matrices.

- **Session 3** examined, via a series of three presentations from FR, ES and DE experts, the analytical challenges in the detection and quantification of nanomaterials in food and food contact materials. The availability of methodologies to identify and characterise nanomaterials in the various food matrices, the migration behaviour of some nanomaterials in food contact matrices, and the need for agreed methods and reference materials were highlighted.

At the end of the first day, participants were guided through the JRC Nanobiotechnology laboratory. The JRC has up-to-date laboratories for the detection, identification and characterisation of nanomaterials in food and consumer products. Its work focuses on the understanding of nanomaterial properties and effects. In addition, the JRC presented its Open Lab initiative which aims to make the JRC nanobiotechnology facilities available to outside researchers and industry (especially SMEs) and will be associated to the European Strategic Forum for Research Infrastructures. Access will be granted through open calls, and proposals will be evaluated by a Selection Panel, with priority topics being defined by a Steering Committee. JRC staff will provide expert assistance to visiting users.

Second day: two sessions were organised as follows:

- **Session 4** on the development of harmonised analytical methods and reference materials), covered via a series of four presentations from JRC, DE, DK and UK experts on their experiences with and challenges facing the development and validation of analytical methodologies, and for the production of stable and homogeneous reference materials (certified and non-certified ones).

- **The final Session** (Session 5) consisted of two parts. In the first part, the JRC and SANTE presented the results of a survey conducted among Member States on their experience, capacities and needs with the analysis and characterisation of nanomaterials in foods and FCM. Briefly, few MS have had experience with the analysis of nanomaterials in food and FCMs or consider that they are ready to conduct analyses for enforcement purposes, while the vast majority of MS considered of high importance the need for (ranked from high to medium-high priority):
    - Networking of labs for information exchange;
    - Access to state of the art methods and protocols;
    - Collaborative work for method development;
    - Availability of reference nanomaterials and reference food matrices;
    - Education/training or personnel;
    - Access to specialized labs;

The second part, which was also the concluding session for the Symposium, involved a Panel discussion on the key messages and learnings which emerged from the Symposium. Those can be summarised in the following conclusions:

1. A **scientifically sound nanomaterial definition** and **appropriate methodologies** to support it are two essential pillars to ensure the enforcement of the EU legislation for nanomaterials in the food and food contact material domain, for an effective functioning of the internal market, and for maintaining and strengthening consumer confidence.
2. Collaboration, cooperation and communication must be the operating principles for all involved in the process.
3. **Efforts are needed to** combine critical technical mass at **EU level (COM, MS, and relevant stakeholders)** to develop, validate and standardise methods and to produce reference materials to ensure comparable results/data quality.
4. The **role of MS** designated enforcement **laboratories** will be critical and capacity building will be needed. A **network** of enforcement laboratories together with reference laboratories could be desirable.
5. **Stakeholders and economic operators are called upon to share knowledge and expertise** on nanomaterials, analytical/detection and characterisation methods, matrices and reference materials.
6. The **JRC** may play a **coordinating role** to help MS laboratories to be in a better position to enforce food and food contact material legislation on nanomaterials in terms of:
    a. Access to state of the art methodologies
    b. Provide (certified) reference materials for analytical quality control (incl. inter-laboratory method validation studies);
    c. Education and training; organise proficiency tests;
    d. Ensuring uptake of EU and MS nano-project results (e.g. NanoDefine, NanoLyse).

In terms of concrete follow-up, the JRC and DG SANTE are at present considering the establishment and operation of a core expert group from EU and MS projects and institutions which will develop a specific road map of actions and activities to implement the Symposium conclusions.