

Recently developed food matrix CRMs from EC-JRC

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The presentation focuses on some of the recently developed and released food matrix certified reference materials (CRMs), namely the mass fractions of short- and medium-chain chlorinated paraffins in an existing fish tissue CRM, the mass fraction of fipronil in egg, the mass fractions of pesticides in wheat flour, the identity (genetic identification) of *Hippoglossus hippoglossus* (Atlantic halibut), and the alcoholic strength, carbon-13 and deuterium isotope ratios in ethanol from grape sugar fermentation (96 % vol.).

Raw materials were converted into suitably homogeneous and stable candidate reference materials using various techniques such as milling, mixing and freeze-drying. For some materials, the analytes were either spiked into the blank matrices or naturally contaminated raw materials were used. For the ethanol CRM, commercially available ethanol was used, and for the fish identity CRM, Atlantic halibut filet served as raw material. Expert laboratories operating their methods under ISO/IEC 17025 accreditation and/or adhering to this ISO standard performed measurements in the characterisation studies, and after technical and statistical data scrutiny, reference values were assigned to the materials and their respective uncertainties calculated. All projects were operated in compliance with ISO 17034.

Novel food matrix CRMs were developed, which have certified values for the mass fractions of chlorinated paraffins in fish, fipronil in egg, pesticides in wheat, the taxon (genetic identity) of Atlantic halibut, and the alcoholic strength, carbon-13 and deuterium isotope ratios in ethanol.

The intended use for these CRMs is method performance verification and method validation (trueness determination). The CRMs will enable laboratories to establish and safeguard reliable measurements in the respective application fields.

Keywords: Certified reference materials (CRMs), chlorinated paraffins, pesticides, Atlantic halibut, fipronil

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