

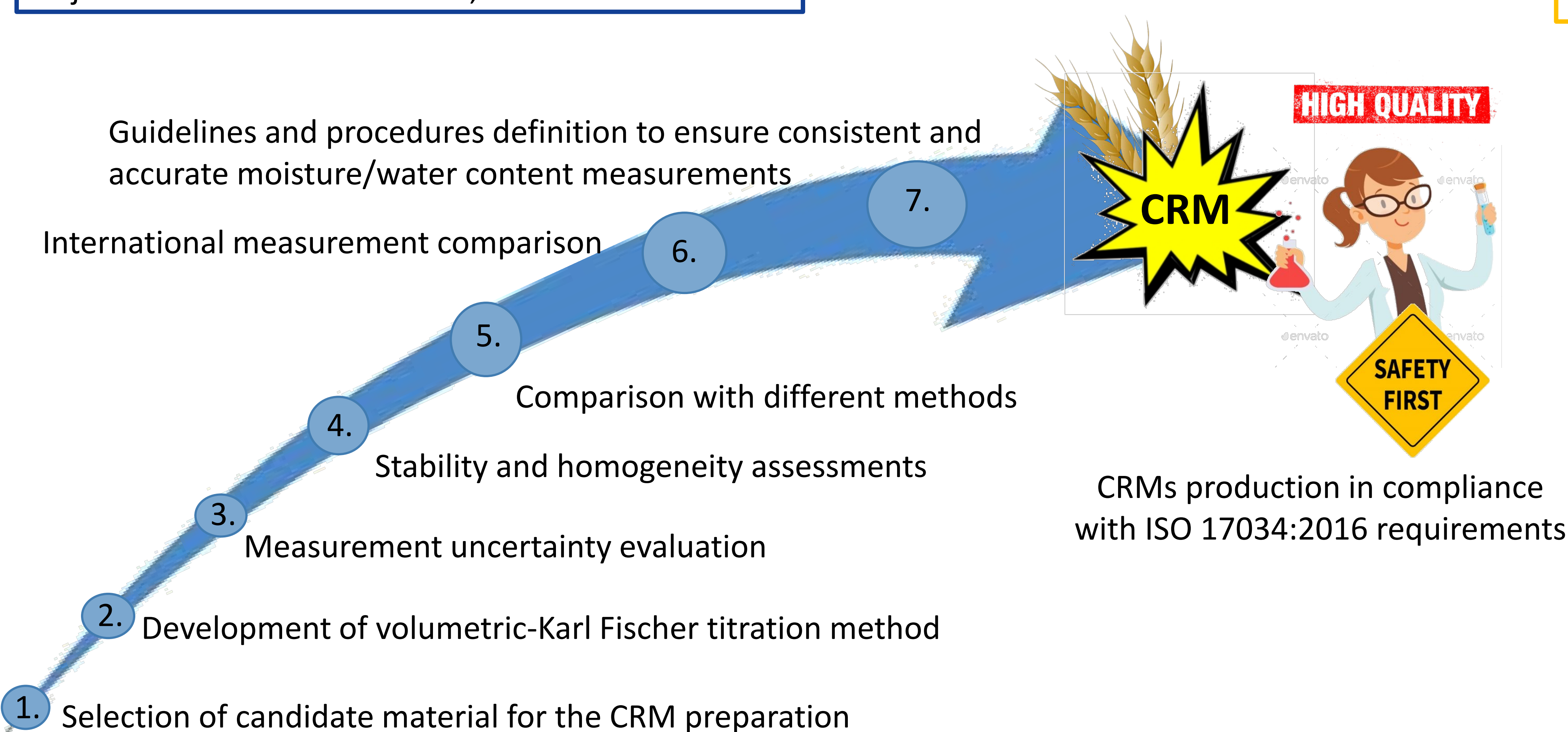
The EPM Project 23RPT03 GrainMet for the development of CRMs characterised for water content constituted of plant-origin bulk materials

F. Durbiano, F. Rolle, S. Pavarelli, M. Segal, A. İşleyen, H. Nasibli, E. A. Klahn, I. Leito, B. Tallawi, O. Melnykov, S. Kulyk, A. Petrenko, L. Ovchar, O. Shcherbakova, A. Popov, A. Rusu, A. Curdov, T. Kolesnikova, L. Moritz, L. Prochaska, Z. Pálková

Title

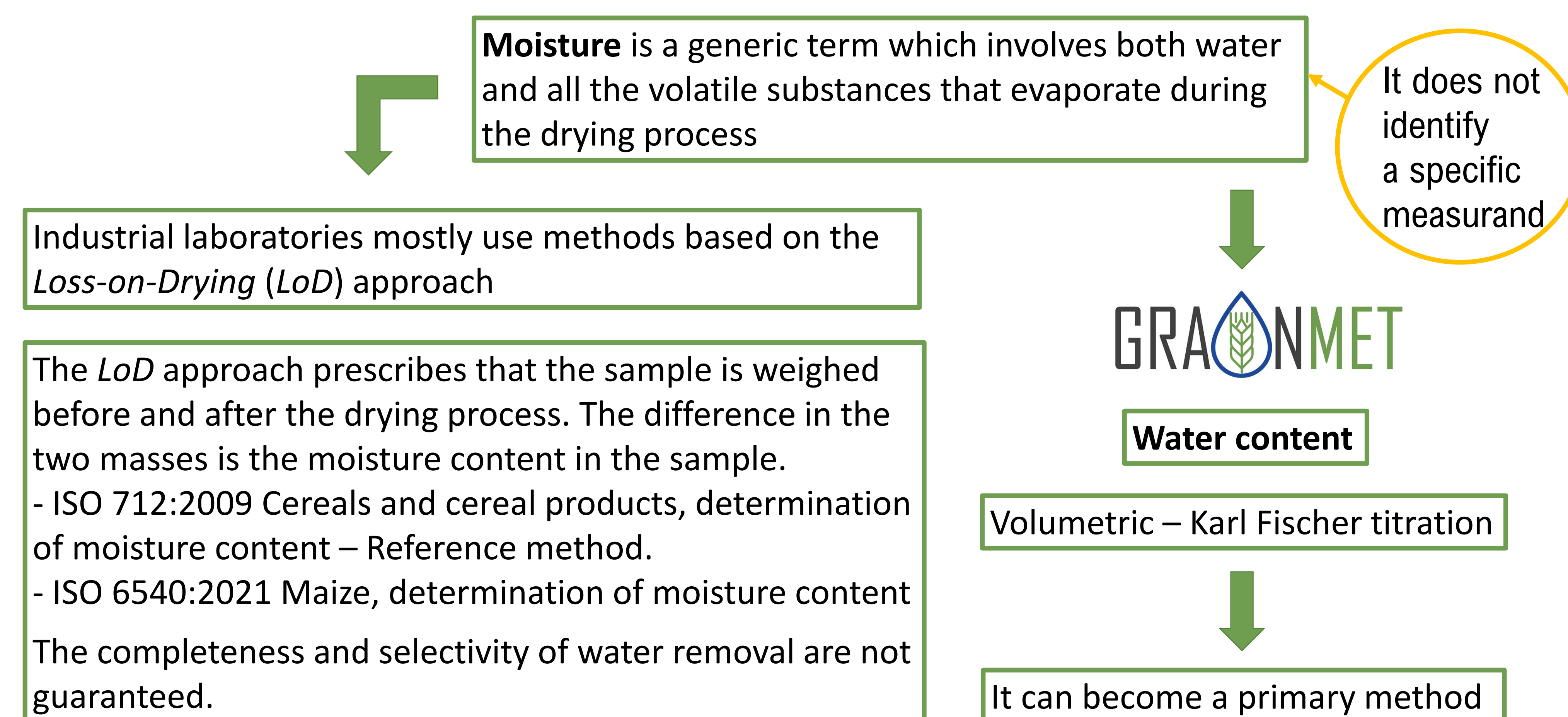
Metrology for standardised moisture content measurement in plant-origin bulk materials in support of International and European food safety and trade - **GrainMet**

Project start date: 01 June 2024, Duration: 36 months



Overview

Water content determination in plant-origin bulk materials is necessary to support quality and fair trade in the food sector. Regarding human health, water presence leads to microbial growth and chemical deterioration reactions, as well as changing the flavour, texture, and appearance of the food products. With accurate data, quality, storage conditions, pricing, and the safety of these materials can be evaluated.



Karl Fischer titration

Karl Fischer Titration is a common analytical method used for the determination of water content in a variety of substances: food, beverage, cosmetics, pharmaceuticals.

Water and iodine are consumed in a 1:1 ratio in the reaction. Once all of the water is consumed, the excess iodine is detected voltametrically by the titrator's indicator electrode. That signals the end-point of the titration.

In v-Karl Fischer, iodine is added mechanically. In c-Karl Fischer, iodine is generated electrochemically.

The selectivity to water allows high repeatability of the measurement.

