unambiguous translations in many different languages, where the local metrological idioms may be expressed differently, a major difficulty.

The core of VIM3, i.e. its main basic terms, which are those currently used in metrology, are identified as being: “Quantity” vs. “Amount”, “Magnitude”; “Quantity” vs. “Property”; “Value” vs. “Scale”. Their current meaning will be recalled, together with the rationale of having chosen them. The above illustration is compared with recently proposed changes of several of them, including some terms to be newly introduced.

The analysis will also take into account that, for the basic terms, any substantial change in their meaning, or the suppression of some of them, should be carefully pondered for being strictly necessary, because it may entail unnecessary confusion for many Dictionary users. In fact, it is possible and reasonable that in other disciplines the same terms might express different concepts and in a different way according to the specific idiom of those disciplines – e.g., according to an idiom basically originating from branches of philosophy of science or from set theory, where important differences in their meaning could be inappropriate or difficult to understand in measurement science, and metrology in particular.

PROCESSING RESULTS OF MEASUREMENT WHEN DETERMINING THE RAPESEED OIL DENSITY

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The high-quality products indicators include purpose indicators, aesthetic indicators, safety indicators, and identification indicators (density, refraction factor, fatty acid composition, etc.).

Today, there is a need to develop an updated reference table for the density of unrefined rapeseed oil vs. temperature within the temperature range of 273-373 deg K (with the step of 1 deg K), because the existing tables are incomplete. The currently existing tables include the density readings every 5 ºC, which is not sufficient for technological calculations, and they also contain the outdated data (the oil is obtained from rapeseed breeds and hybrids that are no longer used in production).

There was a random impersonal aggregate of five samples was formed. The samples were provided by a different supplier. The abovementioned population was used as a representative sample to conduct the studies.

Measurements were conducted within the temperature range from 0 deg C to 100 deg C, through a 10 deg C step. Each measurement was conducted in five parallels at each point. Additionally, in order to increase the accuracy of measurements, there were additional measurements conducted at 273 deg K (0 deg C), 298 deg K (25 deg C), 323 deg K (50 deg C), 348 deg K (75 deg C), 373 deg K (100 deg C). The abovementioned measurements were conducted in five groups of five parallels in each group.

Statistical processing of the measurement results was performed in Mathcad software including the following factors: evaluation of statistical data for combined processing, verification of a significant systematic error with the method of successive differences (Abbe's criterion), detection of abnormal results according to the Grubbs, Dixon-Gardner and Irwin criteria, calculation of mean value, dispersion, mean square deviation, estimation of absolute and relative errors, estimation of absolute and relative standard measurements uncertainties of type A.

The relative expanded measurement uncertainty of unrefined rapeseed oil density measurements was 7.2×10^{-5}, the absolute expanded measurement uncertainty of density measurements was 6.48×10^{-2}. The obtained data were approximated by a linear function. The maximum deviation of the tabular data from the approximate dependence was no more than 1.8×10^{-4} kg/m3. Errors in determining the approximation coefficients were no more than 10^{-4} kg/m^3.

Therefore, based on the abovementioned studies, tables of the dependence of the density of unrefined rapeseed oil vs. temperature within the temperature range of 273-373 deg K were developed. Those tables were approved as standard reference data in the Ministry of Economic Development, Trade and Agriculture of Ukraine.

NIST DECISION TREE FOR KEY COMPARISONS IN MEASUREMENT SCIENCE AND FOR META-ANALYSES IN MEDICINE

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The NIST Decision Tree, available at https://decisiontree.nist.gov, makes recommendations for how to model and reduce the measurement results obtained in key comparisons (and interlaboratory comparisons generally) conducted in measurement science, and in meta-analyses carried out in medicine [1].

The presentation will illustrate applications of the NIST Decision Tree to key comparisons involving measurements of the mass fraction of nickel in bovine liver (CCQM-K145) [2], and of the equivalent activity of zinc-65 (BIPM.RI(II)-K1) [3].

The meta-analysis of the effect of rosiglitazone (Avandia) on the risk of myocardial infarction, in the breakthrough study that Steven Nissen and Kathy Wolsky published in the New England Journal of Medicine in 2007 [4], will be revisited to illustrate the application of conventional statistical procedures, and also as an example of model selection aided by the NIST Decision Tree.

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