

Response to CIPAC's Horwitz Presentation

Historical

The Horwitz Ratio (HorRat) has been used for years for many different types of collaborative studies on many different matrices. It is applicable to a wide concentration range, ie., 50 ppm to 100%. It has been used for pesticide formulation collaborative studies, pesticide residue collaborative studies, veterinary drugs in Type A, B and C medicated animal feed articles, veterinary drug residues in tissues, etc. The AOACI has spreadsheets developed that calculate the various statistics needed for single laboratory validations, as well as, collaborative studies. Both spreadsheets are easy to use and make the elimination of outliers effortless by flagging them.

Usage

The ratio is still used extensively for both SLV's and collaborative studies. It has been used and accepted by the following organizations: International Union of Pure and Applied Chemistry, Nordic Analytical Committee, International Commission for Uniform Methods of Sugar Analysis, and the European Committee for Standardization. It is also important to mention that authorities of the EU have included the HorRat as an acceptance criteria. The Australian accreditation body National Association of Testing Authorities and the Codex Alimentarius Commission recognize the Equation as a source of variance as a source of variance and accept the expression of uncertainty by its values.

Interpretation

Generally, HorRat value interpretation guidelines are very straight forward and have worked well for my own collaborative study, as well as, others I have participated in. The HorRat ranges presented on slide 6 of the PPT are what is now accepted at AOAC as well. It used to be $0.5 \leq \text{HorRat} \leq 1$ was fully acceptable. Upon examination, there have been several instances where the ration is ≤ 0.5 , and the collaborative laboratories have been that good with that particular sample pair. Conversely, there have been instances where one sample pair has given HorRat's > 2 , but have been explained and the samples were sent out and the analysis repeated.

Overall, it would be in CIPAC's and the pesticide formulation community to adopt the DAPA proposal.