

INAB Guidance on the use of Stubbs and More method for reporting “Apparent Total Meat Content

The calculation of the meat content of meat products via the Stubbs & More method has been undertaken since 1919. The calculation is based on known average nitrogen contents of particular species and cuts of meat, and depends on the analytical determination of water, fat, nitrogen (protein) and ash in the finished product. Deductions from the analysed nitrogen content must be made for other sources of nitrogen in the product. These are typically rusk, soya and milk protein, each of which can be measured in the sample directly or indirectly, and an appropriate deduction made for nitrogen contributed by each ingredient. In most cases, the above process was sufficient to give a reliable estimate of the meat content of a meat product. The situation has changed significantly with the new definition of meat introduced at EC level for the quantitative declaration of meat content of a food. The new definition has introduced several complicating factors;

- 1.1) Ingredients derived from animals which could well be present, but which are no longer included within the definition of meat, may be included in the process given in the first paragraph as “meat”. There is presently no reliable way of quantifying these ingredients (e.g. liver, kidney, heart, MRM).
- 1.2) Maximum connective tissue to protein ratios are set for commonly used meats. The declared meat content must not include more than the set amounts of such tissues.
- 1.3) Maximum fat levels are set for commonly used meats. The declared meat content must not include more than the set amounts of fat.
- 1.4) The QUID percentages must be in terms of each meat present, and not a total meat content. Thus a pork & beef sausage will have to declare “pork (x%), beef (y%)”. While qualitative testing is possible for species present, it appears that there is no reliable quantitative methodology at present for one species in the presence of another.

An analyst testing a sausage or a burger might therefore run water, fat, nitrogen, ash, soya protein, casein, hydroxyproline tests (all quantitative) and can calculate a maximum figure for the total meat content (EC definition) of the sample. What is not known is whether (and if so how much of) any of the excluded animal ingredients are present. A routine analysis of meat for the food industry would not reveal any of the excluded ingredients.

This statement outlines the Irish National Accreditation Board's guidance to both applicant and accredited laboratory organisations when using the Stubbs & More method for calculating the apparent meat content to ensure that the reported results are not subsequently used for the EU/QUID labelling scheme.

For laboratories that wish to have the "Apparent Meat Content" by the Stubbs and More calculation accredited, the following approach should be adopted by INAB laboratories for this test method:

Contract Review

The laboratory should ask the client at the contract review stage what the filler is and make the appropriate allowance for non-meat nitrogen in the calculation.

Test Method

Include in the test method exclusions from the calculation e.g. that it is not to be used for QUID labelling, identifying other sources of nitrogen (non meat nitrogen) and any other information required to clarify the test method.

Reporting

The laboratory should report as 'Apparent Total Meat Content' and add a note at the bottom of the report stating the allowance made for the filler. The data should not be used for the EU/QUID labelling scheme.

Individual component analysis such as water, ash, nitrogen, fat remain creditable tests.