1. SCOPE AND PURPOSE:

This method is applicable to all product categories. The nitrogen value is converted to a crude protein value using the factor for the matrix undergoing analysis.

2. PRINCIPLE:

2.1. A finely ground portion of sample is mixed with oxidizing agents and a catalyst in a combustion tube. The tube is heated, oxidizing the sample to free nitrogen oxides that are catalyzed to elemental nitrogen gas. The nitrogen gas is carried into a thermal conductivity detector with helium gas. Nitrogen is converted to percent protein in the sample using the protein factor for the matrix.

2.2. Feed, food, grain ingredients, and unspecified matrices are tested using the PRCB test code to apply a protein factor of 6.25. PRCBW test code is used for wet samples to apply a protein factor of 6.25. Wheat and wheat products (cereals, bread, macaroni) are tested using the test code PRCBWH to apply a protein factor of 5.7. Milk and milk products (infant formula, cheese) are tested using test code PRCBCH to apply a protein factor of 6.38. Gelatin products are tested using test code PRCBG to apply a protein factor of 5.55.

2.3. Lowest confidence levels will vary based on different sample weights used for the different matrices. Using a 0.5 g sample, the lowest confidence level of this method is 0.1% protein (0.02% nitrogen).

2.4. Known Interferences: Nitrogen concentrates will overload the system and cannot be used with this method. Nitrogen from non-protein organo-nitrogen compounds and inorganic nitrites and nitrates will be included in the total nitrogen content of the sample. There is no assurance that matrices other than those listed can be assayed using this method.

3. PRECISION:

Records of method precision based on Method Validation and/or known control summaries are located in the QA Master file for this test method. Assay precision may vary with test matrix and analyte level. Terms used to describe method precision are defined in NPSOP3000, *Validation of Quantitative Chemical Tests*.

4. REFERENCES:

4.1. Nestle LI-00.557-2 Total Nitrogen & Protein by Combustion

4.2. Official Methods of Analysis of the AOAC International, Method 990.03