METHOD 7.0

Effective 1st January 2018

VOLATILE NITROGENOUS BASES

1. Scope and Field of Application

This method is to be used for those feeding stuffs for which a declaration of protein content is required and which are believed to contain ammoniacal nitrogen. This method makes it possible to determine the content of volatile nitrogenous bases, expressed as ammonia. It is applicable to ammonia contents of less than 0.25%.

2. Principle

The sample is extracted with water and the solution clarified and filtered. The volatile nitrogenous bases are displaced at boiling point by adding magnesium oxide and collected in a specific quantity of sulphuric acid, the excess of which is back-titrated with a solution of sodium hydroxide.

3. Reagents

3.1 Trichloroacetic acid, solution 20% (w/v)

3.2 Magnesium oxide.

3.3 Anti-foaming emulsion (e.g. silicone).

3.4 Sulphuric acid 0.05 mol/litre.

3.5 Sodium hydroxide solution 0.1 mol/litre.

3.6 Methyl red solution 0.3% in 95-96% (v/v) ethanol.

4. Apparatus

4.1 Mixer (tumbler): approximately 35-40 revolutions per minute.

4.2 Distilling apparatus of the Kjeldahl type.

5. Procedure

5.1 Weigh 10g of the sample to the nearest 1mg and place with 100ml of water in a 200ml graduated flask. Mix or stir in the tumbler for 30 minutes. Add 50ml of trichloroacetic acid solution (3.1), make up to volume with water, shake vigorously and filter through a pleated filter.

5.2 Take a quantity of clear filtrate appropriate for the presumed content of volatile nitrogenous bases (100ml is usually suitable). Dilute to 200ml and add 2g of magnesium oxide (3.2) and a few drops of anti-foaming emulsion (3.3). The solution must be alkaline to litmus paper; otherwise add some magnesium oxide (3.2).

5.3 Proceed according 5.2 and 5.3 of Gafta Method 4.0 for the determination of the crude protein content.

Carry out a *blank test* using the same procedure but without a sample to be analysed.

6. Expression of the Results

Calculate the amount of Volatile Nitrogenous Bases (expressed as Ammonia), as a percentage of the sample, as follows:

1ml of H_2SO_4 0.05mol/litre corresponds to 1.7mg of ammonia.
Express the result as a percentage of the sample

7. Repeatability

The difference between the results of two parallel determinations carried out on the same sample shall not exceed, in relative value, 10% of ammonia.

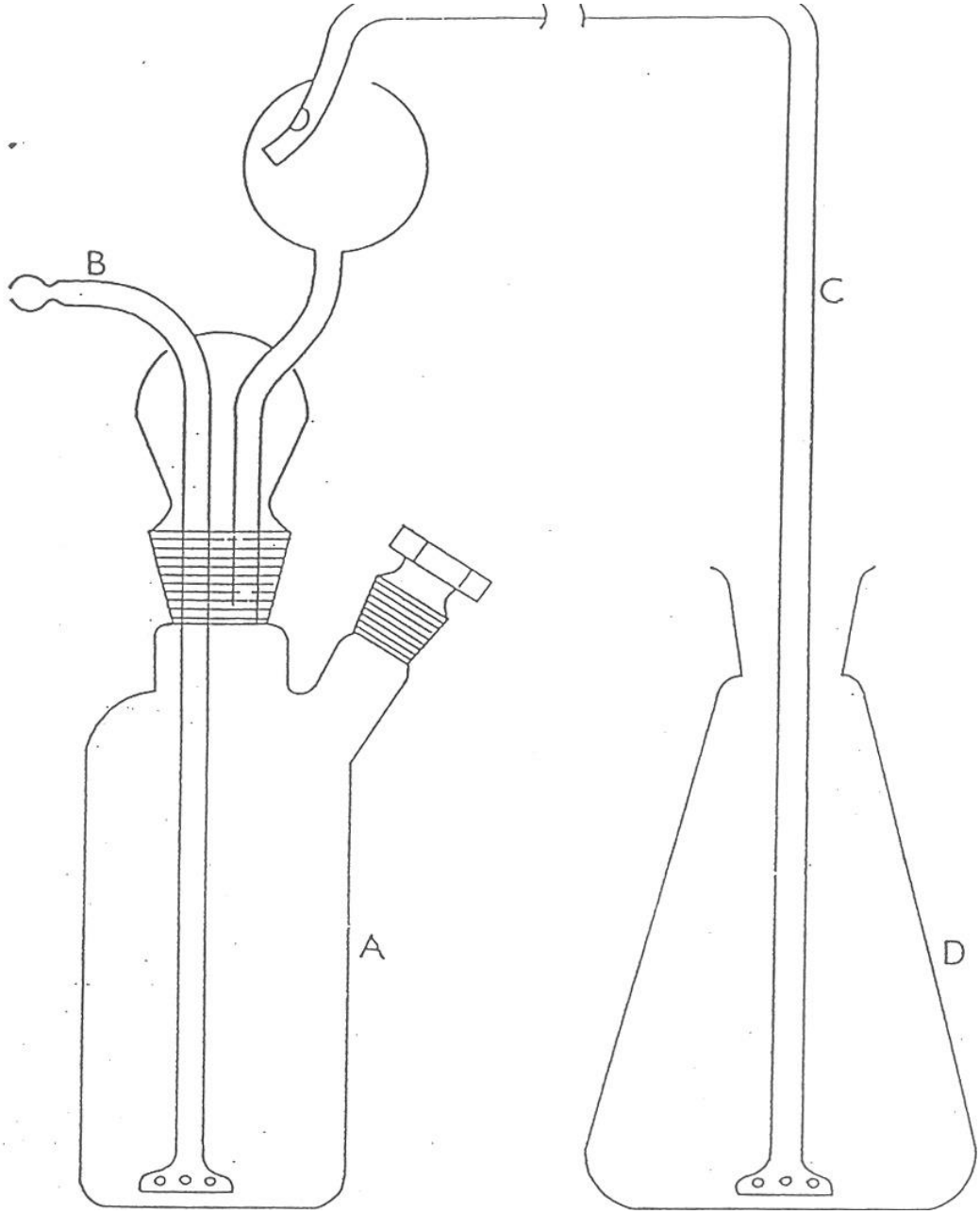

Fig 1

A = Reaction vessel, 350-400ml capacity.
B = Tube for introduction of air.
C = Delivery tube with splash head.
D = Conical Flask, 500ml capacity.