

## 12. Chemical Methods

### Determination of ash content (JECFA)

[“Compendium of food additive specifications”, Addendum 1, FAO Food and Nutrition Paper 52 (1992)]

#### 1 Principle of the method

A known amount of carob bean gum (CGB) is dried, charred, and ignited. Ignition is continued until constant weight. The weight after ignition constitutes the weight of the ash.

#### 2 Apparatus and auxiliary agents

- 2.1 Analytical balance, sensitivity 0.1 mg
- 2.2 Platinum or porcelain or silica crucible of suitable quality, about 50 mm in diameter and 25 mm deep.
- 2.3 Bunsen burner, tripod and pipe-clay triangle
- 2.4 Muffle furnace regulated at 800 °C
- 2.5 Desiccator with suitable drying agent

#### 3 Procedure

- 3.1 Dry the crucible in the furnace at 800 °C for 30 min
- 3.2 Allow the crucible to cool to room temperature in the desiccator and weigh.

3.3 Weigh 2.0 to 2.5 g of CGB accurately into the crucible.

3.4 Char carefully over the Bunsen burner (ignite cautiously to avoid spattering).

3.5 When the flame ceases, complete ignition in muffle at 800 °C until a white ash remains (for 3 to 4 hours).

3.6 Allow the crucible to cool in the desiccator and weigh

#### 4 Expression of result

Method of calculation:

$$\% \text{Ash content} = \frac{\text{weight of ash} \times 100}{\text{weight of sample}}$$

Accuracy of determination: The maximum deviation between duplicate determinations should not exceed 0.15 % ash.