8.2 Determination of neutral detergent fibre (NDF) - Fibertec system

Apparatus

- Fibertec system
- Sintered glass crucible (Porosity 2: 40-90 microns)
- Glass rod
- Enamel tray
- Muffle furnace

Procedure

1. Record the weight of a sintered glass crucible
2. Record the weight of the crucible along with approximately 1 g of feed sample.
3. Attach the crucible in a Fibertec system and reflux the sample for one hour with 100ml of neutral detergent solution.

Composition of neutral detergent solution (g per litre of distilled water)

• Sodium lauryl sulphate	30
• Disodium ethylene diamine tetra-acetate	18.61
• Sodium borate decahydrate	6.81
• Disodium hydrogen phosphate (anhydrous)	4.56
• Ethoxy ethanol	10 ml

Then 2 ml of decahydrogenaphthalene and 0.5 g of sodium sulphite are to be added and heated to boiling in 5-10 minutes. Adjust boiling to an even level and refluxed for 60 minutes from the onset of boiling. Apply vacuum to drain the fluid. The sample is then rinsed with minimum of hot water. Break the mat formed in the bottom of the crucible by applying pressure and filled the crucible with hot water. Filter the liquid by applying vacuum. Wash the residue twice with acetone in the same manner and suck dry. Dry the crucibles at 100ºC overnight and weigh.

Calculation

$$\% \text{ NDF} = \frac{\text{Weight of crucible with NDF residue} - \text{weight of empty crucible}}{\text{Weight of substance}} \times 100$$

Reference: Goering,H.K. and P.J. Van Soest, 1970. Forage fibre analyses. Agric. Handbook No.379., ARS, USDA.