

METHOD SPECIFICATION

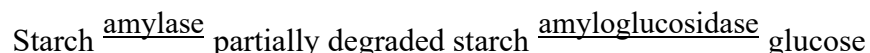
Faculty of Biosciences, NMBU

Method name: Starch

BIOVIT no.: Msp1159

1. Method of analysis / Principle / Main instrument

This method is intended for analyzing starch in grain products / fertilizers / rumen and intestinal contents, etc. In grain products, starch makes up the largest part of the carbohydrates. Starch is made up of maltose units. The three-dimensional structure of the starch is broken down into water-soluble shorter chains by the addition of α -amylase. In the next step, amyloglucosidase enzymes are used to convert the shorter chains to glucose. The concentration of glucose is finally determined as a color reaction with a spectrophotometer (RX4041 RX Daytona +, England).



Main instrument: RX Daytona + (Randox Laboratories Ltd, UK).

2. Reference and any modifications

AACC Method 76-13-01: Total Starch Assay Procedure

- Megazyme Amyloglucosidase / Alpha-Amylase Method

(Also Corresponds to AOAC method 996.11- Starch (Total) in Cereal Products)

3. Requirements for the degree of grinding

For the analysis, 100 mg \pm 5 mg sample is required.

Samples with > 8% fat must first be extracted with acetone to remove fat.

Samples with > 4% sugar must first be extracted with 80% ethanol to remove free sugar.

If the sample is to be acetone- or ethanol-treated, a 120 mg \pm 5 mg sample is needed.

Degree of grinding: 0.5 mm.

Dry samples are stored at room temperature.

4. Contact persons:

Lab leader: Hanne Kolsrud Hustoft

Responsible for analysis: Milena Bjelanovic / Elin Follaug Johnsen

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5. Additional literature

- ★ McCleary, B.V., Solah, V., Gibson, T.S. (1994) Quantitative Measurements of Total Starch in Cereal Flours and Products. *Journal of Cereal Science* 20: 51-58.
- ★ McCleary, B.V. Gobson, T.S., Solah, V., Mugford, D.C. (1994) Total Starch Measurement in Cereal Products: Interlaboratory Evaluation of a Rapid Enzymic Test Procedure. *Cereal Chemistry* 71: 501-505.

6. History - instrument transitions and method modifications

Instrument transition 1995: from Encore to Cobas Mira S spectrophotometer (March-1995)

- Modified 11.01.00 after transition from Roche to ABX reagents.
- Modified 12.02.04 after transition from ABX reagents to Pentra reagents.

Instrument transition 2010: from Cobas Mira to MaxMat (August-2010)

- Method modification after transition to MaxMat spectrophotometer with reagents, controls and standard from ILS Laboratories ScandinaviaAS.

Instrument transition 2018: from MaxMat to RX Daytona + (October-2018)

- Method modification after transition to RX Daytona + with reagents, controls and calibrators from Randox Laboratories Ltd, United Kingdom.

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