

Method specification
Faculty of Biosciences, NMBU

Method name: Water soluble carbohydrates (WSC)

BIOVIT No: Msp1014

1. Analysis method / principle / main instrument

Carbohydrates are extracted in a weak acetate buffer. Sucrose and fructose in the extract are hydrolyzed to glucose and fructose using weak sulfuric acid. Glucose and fructose are converted to glucose-6-phosphate and fructose-6-phosphate which in turn reduces NADP to NADPH. The absorbance of NADPH before and after the reaction is measured spectrophotometrically. The increase in absorbance is directly proportional to the glucose and fructose concentration.

Main instrument: UV/VIS spectrophotometer

2. Reference and any modifications

Randby, Å.T., Nørgaard P. and M.R. Weisbjerg, 2010. Effect of increasing plant maturity in timothy-dominated grass silage on the performance of growing/finishing Norwegian Red bulls. Blackwell Publishing Ltd. Grass and Science, 65: 273-286.

3. Requirements for grinding and storage

Fresh or frozen feed is homogenized as good as possible

4. Contact persons

Lab manager: Hanne Kolsrud Hustoft

Responsible for analysis: Elin F. Johnsen and Heidi Askerud

Researcher: Åshild Taksdal Randby

5. Other literature

1. Determination of readily available carbohydrates in plant material, SLL method 22, 1983-07-01, Larsson & Bengtsson
2. Assay procedure: D-Fructose and D-Glucose (K-FRUGL) from megazyme

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