PRODUCT INFORMATION SHEET

Dietary Fiber, soluble / insoluble Fiber and Inulin in Cereal Product

PT originated REFERENCE MATERIAL (RM)

Description of the RM

Name / Material of related PT	*DLA ptAU01 (2022) Dietary Fiber, soluble / insoluble Fiber and Inulin in Cereal Product - Sample B*
Identifier / LOT	*RM 2022-AU01 B*
Expiry date	*May 2027*
Matrix	*Bread Baking Mix*
Physical description	*Powder*
Packaging / weight	*Sealed foil pouche / 40 g*
Storage conditions	*room temperature, long term cooled 2 - 10°C (dry and dark)*
Name and address manufacturer	***DLA - Proficiency Tests GmbH*** *Hauptstr. 80, 23845 Oering, Germany* *Tel. ++49-(0)4532-9183358, Fax. ++49(0)4102-9944976* *eMail. pt@dla-lvu.de, website. www.dla-lvu.de*

Composition of Material

Ingredients	**Amounts***
Bread Baking Mix, organic Ingredients: Wholemeal wheat flour 61%, wholemeal rye flour 33%, wholemeal rye sour-dough powder 4%, sea salt Nutrients** per 100 g: Fat 1,7 g, carbohydrates 59 g therof sugar 0,8 g, protein 10 g, salt 1,7 g	95,0 g/100 g
- thereof fiber (13 %) **	12,4 g/100 g **
Inulin	4,98 g/100 g

* Contents according to gravimetric mixture
** Contents according to label

Minimum Sample Size
A minimum sample size of 5 g is recommended for sample preparation.

The homogeneity tests were performed with sample sizes of 5 g (Microtracer analysis)
The mixture homogeneity before bottling was examined 8-fold by microtracer analysis. Homogeneity was sufficient with a probability of ≥ 25% (excellent mixture) and a HorRat value in the range of acceptance (0,3 to 1,3) (for more details see final report of PT).

The calculation of the repeatability standard deviations S_r of the participants was also used as an indicator of homogeneity. The coefficient of variation (CV_r) for total dietary fiber without inulin (method 1) is approx. 1,1% and for inulin (methods 5, 6) it is 4,0%. Thus, they were similar to the repeatability standard deviations of the corresponding official methods (e.g. ASU methods / EN ISO methods ASU L 00.00-18 / L 16.08-1 / L 17.03-1 and ASU L 00.00-94).

Reference Values
All reference values were derived from the related PT round (for more details see final report).

Reference Values quantitative in g/100g

Parameter	Total Dietary Fiber without Inulin	Total Dietary Fiber with Inulin
	Methods: 1	Methods: 2, 3
Number of results	10	9
Number of outliers	-	0
Assigned Value (Xpt)	10,9	18,0
Robust standard deviation	0,935	1,58
Standard uncertainty	0,370	0,658
Target standard deviation σpt	1,27	2,84
Target range	8,32 – 13,4	12,3 – 23,7

Methods:
(1) enzymatic-gravimetric methods like ASU L 00.00-18 (ASU L 17.03-1) or AOAC 991.43 and AOAC 985.29, in which lower results of inulin can occur
(2) enzymatic-gravimetric methods combined with liquid chromatography like AOAC 2009.01, which include inulin
(3) Total Dietary Fiber, as Sum of Insoluble DF, High Molecular Weight Soluble DF, and Low Molecular Weight Soluble DF (AOAC 2017.16)

Parameter	Insoluble Dietary Fiber	Soluble Dietary Fiber
	Methods: 1a, 2a, 3a	Methods: 1b, 2b
Number of results	10	5°
Number of outliers	0	2
Assigned Value (Xpt)	9,41	2,24
Robust standard deviation	1,50	0,557
Standard uncertainty	0,592	0,311
Target standard deviation σpt	1,30	0,407
Target range	6,82 – 12,0	1,43 – 3,06

° without outliers
Methods:
(1a) Insoluble dietary fiber (enzymatic-gravimetric methods like ASU L 00.00-18 (ASU L 17.03-1) or AOAC 991.43 and AOAC 985.29, in which an inulinase-reaction is included)
(2a) Insoluble dietary fiber (enzymatic-gravimetric methods combined with liquid chromatography like AOAC 2009.01, without an inulinase-reaction)
(3a) Insoluble dietary fiber (AOAC 2017.16)
(1b) enzymatic-gravimetric methods like ASU L 00.00-18 (ASU L 17.03-1) or AOAC 991.43 and AOAC 985.29, in which lower results of inulin can occur, e.g. inulinase-reaction included
(2b) enzymatic-gravimetric methods combined with liquid chromatography like AOAC 2009.01, which include inulin, e.g. without inulinase-reaction

Parameter	Inulin/Fructans
	Methods: 5, 6
Number of results	7
Number of outliers	0
Assigned Value (Xpt)	6,30
Robust standard deviation	0,304
Standard uncertainty	0,143
Target standard deviation σpt	0,467
Target range	5,36 – 7,23

Methods:
(5) Inulin (enzymatic methods e.g. ASU L 00.00-94)
(6) Fructans (liquid-chromatography methods after enzymatic treatment, e.g. ISO 22579 (IDF 241):2020/AOAC 2016.14))

Intended Use

- for laboratory use only, no food!
- validation of analytical methods
- control sample for quality control charts
- test material for inter-laboratory comparisons
- no medical use

Storage Instructions and Handling Information

The material should be stored as stated on page 1. Before use of the material should be warmed up to room temperature. The content should be mixed thoroughly prior to subsampling (see minimum sample size above). The material should be weighed immediately after opening of the foil pouche/bottle and closed again afterwards in order to avoid uptake of moisture. Frequent freezing and thawing should be avoided as this can lead to changes in the properties of the material. The expiry date of this RM is based on the current knowledge and applies only for proper storage conditions in the originally closed foil pouche/bottle.

Safety Precautions

The usual laboratory safety precautions should be applied when working with the RM considering the type of ingredients, parameters and its concentration.

Data Source

The material was analyzed by 13 laboratories within the related proficiency test (PT). Different analytical methods have been used.

Various

The user must determine the suitability of this RM for its particular purpose. DLA makes no warranty of any kind, expressed or implied, other than its products meet all quality control standards set by DLA. We do not guarantee this product can be used for a special application.

Date: 6 August 2024

Dr. Matthias Besler-Scharf (PT-Coordinator)
- signed U. Vorreiter

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