# PRODUCT INFORMATION SHEET

## *Response PT Hazelnut: 5 Processed Samples Hazelnut (not roasted), Nut Butter (roasted), Nut Spread with Cocoa, Nut Nougat and Nut Crocant*

*PT originated REFERENCE MATERIAL (RM)*

**Description of the RM**

| | |
|---|---|
| Name / Material of related PT | *DLA 14-2018 Response PT Hazelnut: 5 Processed Samples Hazelnut (not roasted), Nut Butter (roasted), Nut Spread with Cocoa, Nut Nougat and Nut Crocant* |
| Identifier / LOT | *RM 2018-14 Set (1-6)* |
| Expiry date | *November 2026* |
| Matrix | *Potato Powder / Maltodextrin* |
| Physical description | *Powder* |
| Packaging / weight | *Sealed foil pouche / 6 x 20 g* |
| Storage conditions | *2 - 10°C, long term < -18°C (dry and dark)* |
| Name and address manufacturer | ***DLA - Proficiency Tests GmbH***<br>*Hauptstr. 80, 23845 Oering, Germany*<br>*Tel. ++49-(0)4532-9183358, Fax. ++49(0)4102-9944976*<br>*eMail. pt@dla-lvu.de, website. www.dla-lvu.de* |

**Composition of Material**

(see next page)

**Composition of Material**

| **PT-Sample series** | **Sample 1** Hazelnut, unroasted | **Sample 2** Hazelnut, roasted | **Sample 3** Nut Crocant | **Sample 4** Nut Spread with Cocoa | **Sample 5** Nut Nougat | **Sample 6** „blank“ |
|---|---|---|---|---|---|---|
| **Ingredients** | **g/100 g** | **g/100g** | **g/100g** | **g/100g** | **g/100g** | **g/100g** |
| Potato powder<br>Ingredients: potato, E471, E304, E223, E100 | 75 | 75 | 75 | 75 | 75 | 75 |
| Maltodextrin | 25 | 25 | 25 | 25 | 25 | 25 |
| Allergen-Premixes<br>Ingredients: maltodextrin (75% - 92%), sodium sulfate (< 6%), silicon dioxide (< 3%), processed allergen products (each 1,0% - 10% hazelnut) | 0,051 | 0,054 | 0,11 | 0,50 | 0,16 | - |
| **Allergen-Contents** | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| *Hazelnut, unroasted** <br>Protein 13,0% ** (10 products, Europe) | 50,4 | - | - | - | - | - |
| *Hazelnut, roasted** <br>Protein 14,1% ** *(10 products, Europe)* | - | 53,7 | - | - | - | - |
| *Nut Crocant** (20% Hazelnut and sugar/glucose)<br>Protein 3,8% ** *(5 products, Europe)* | - | - | 53,6 | - | - | - |
| *Nut Spread with Cocoa** (12% Hazelnut and other ingredients)<br>Total protein 5,4 % *** *(7 products, Europe)* | - | - | - | 51,0 | - | - |
| *Nougat** (33% Hazelnut and other ingredients)<br>Total protein 6,7 % *** *(6 products, Europe)* | - | - | - | - | 53,2 | - |
| – *as Hazelnut* | 50,4 | 53,7 | 53,6 | 51,0 | 53,2 | - |
| *Extended combined uncertainty (k=2) of hazelnut-content (= ± 11 %)* | ± 5,54 | ± 5,91 | ± 5,90 | ± 5,61 | ± 5,85 | - |

*Allergen contents as „total food“ as described in column ingredients according to gravimetric mixture
** Protein contents according to laboratory analysis of raw material mixtures (total nitrogen according to Kjeldahl with F=5,30 for hazelnut protein)
***Protein content calculated according to the declaration of the products (besides hazelnut, other protein sources are included)

**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).

## Reference Values

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

## Reference Values qualitative ELISA

| | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 | Sample 6 |
|---|---|---|---|---|---|---|
| Number positive | 9 | 9 | 9 | 9 | 9 | 0 |
| Number negative | 0 | 0 | 0 | 0 | 0 | 9 |
| Percent positive | 100 | 100 | 100 | 100 | 100 | 0 |
| Percent negative | 0 | 0 | 0 | 0 | 0 | 100 |
| Consensus value | positive | positive | positive | positive | positive | negative |
| Spiking | positive | positive | positive | positive | positive | negative |

**Methods:**

AQ = AgraQuant, RomerLabs

BF = MonoTrace ELISA, BioFront Technologies

EF = SensiSpec ELISA Kit, Eurofins

ES = ELISA-Systems

IL = Immunolab

RS-F= Ridascreen® Fast, R-Biopharm

VT = Veratox, Neogen

## Reference Values qualitative PCR

| | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 | Sample 6 |
|---|---|---|---|---|---|---|
| Number positive | 6 | 6 | 5 | 6 | 6 | 0 |
| Number negative | 0 | 0 | 1 | 0 | 0 | 6 |
| Percent positive | 100 | 100 | 83 | 100 | 100 | 0 |
| Percent negative | 0 | 0 | 17 | 0 | 0 | 100 |
| Consensus value | positive | positive | positive | positive | positive | negative |
| Spiking | positive | positive | positive | positive | positive | negative |

**Methods:**

ASU = ASU §64 Methode/method

SFA = Sure Food Allergen, R-Biopharm / Congen

## Reference Values qualitative LC/MS

| | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 | Sample 6 |
|---|---|---|---|---|---|---|
| Spiking | positive | positive | positive | positive | positive | negative |

**Methods:**

LC/MS = Liquid chromatography–mass spectrometry

**Median of Recovery Rates: Samples 1-3**

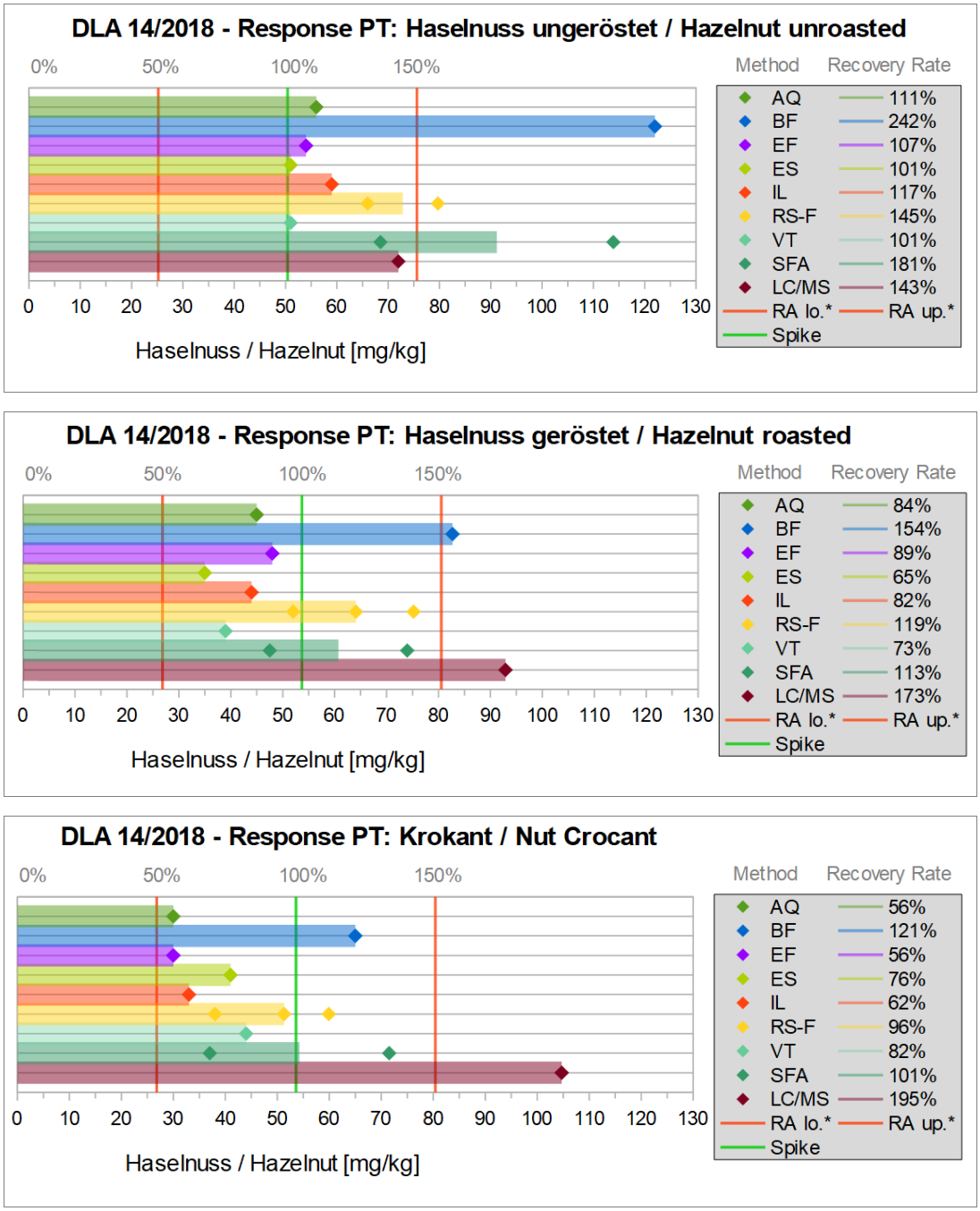
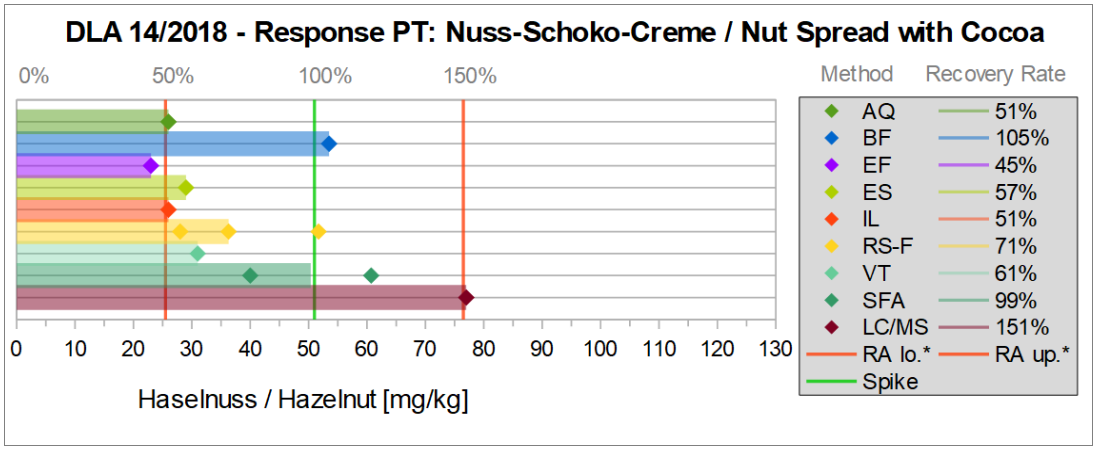



**Abb./Fig. 1:** Graphs of single results (Samples 1-3) separated by methods with corresponding mean recovery rates, lower scale hazelnut content in mg/kg, upper scale recovery rate in % with * range of acceptance from 50% - 150% (* range of acceptance: RA lower limit to RA upper limit)

**Median of Recovery Rates: Samples 3-5**



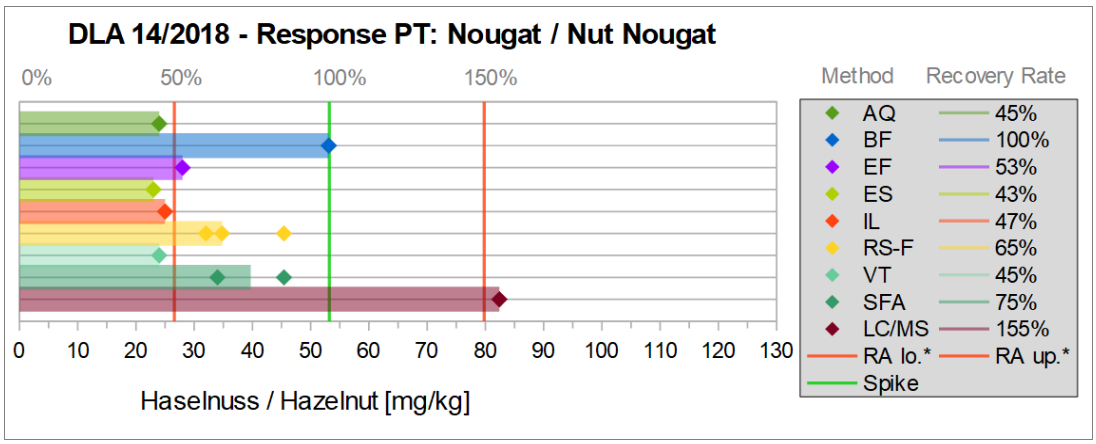




**Abb./Fig. 2:** Graphs of single results (Samples 4-5) separated by methods with corresponding mean recovery rates, lower scale hazelnut content in mg/kg, upper scale recovery rate in % with * range of acceptance from 50% - 150% (* range of acceptance: RA lower limit to RA upper limit)

**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 11 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.

DLA Proficiency Tests

**Date:** 3 December 2025

Ulrike Vorreiter
*- signed U. Vorreiter*