

# DATA BULLETIN

## *Determination of the N/protein content of grain products with the rapid N exceed*

The N/protein content is a determining factor concerning the quality of grain products. It must be measured accurately in order to assess the nutritional quality. The rapid N exceed is a fully automated analyzer for fast, precise and environmentally friendly analyses of N/Protein. The innovative EAS REGAINER® technology allows the analysis of several thousands of samples with minimum maintenance. This results in a reduction of the costs per analysis with more than a factor two compared to similar instruments on the market.

The samples were weighed into tin boats without pre-treatment and pressed to pellets using the manual pressing tool. Analyses were run using a standard method implemented in the instrument software, with a total analysis time of about 5 minutes. A protein factor of 6.25 was applied to calculate the average protein content.

SAMPLE	N [%]	PROTEIN [%]	RSD [%] of 10 analyses	DIFF. N [%] of 2 analyses
wheat flour	1.88	11.7	0.66	0.017
rye flour	1.33	8.33	0.50	0.008
buckwheat flour	1.60	10.0	0.58	0.014
grape seed flour	1.88	11.7	1.82	0.036
wheat bran	2.56	16.0	0.82	0.030
gluten-free flour	0.55	3.43	1.20	0.010

All samples have been analyzed ten times. The average difference between two successive analyses was calculated to compare to international standard ISO 16634-2 (diff. N < 0.1%) and the relative standard deviation (RSD) to compare to international standard AOAC 992.23 (RSD < 2%).

The results clearly demonstrate the excellent analytical performance of the rapid N exceed. All samples could be analyzed well within the required precision of the international standards ISO 16634-2 and AOAC 992.23.

**INSTRUMENT:**  
rapid N exceed

**DETAILS:**  
carrier gas: carbon dioxide  
sample: 300 mg grain products



**Elementar Analysensysteme GmbH**  
Elementar-Straße 1  
63505 Langenselbold (Germany)  
phone: +49 (0) 6184 9393-0  
info@elementar.de | www.elementar.de

