

**Auswertung VDLUFA-Ringversuch Silomais
NIRS-Methode 2022:
Report for VDLUFA Proficiency Test Forage Maize
NIRS method 2022:**



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Raps
Erbsen
Silomais
Grassilage
Maissilage
Braugerste
Backweizen

Nur für den internen Gebrauch der Teilnehmer an diesem Ringversuch

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1 Abkürzungen / Abbreviations

CV_r	Wiederholvariationskoeffizient Coefficient of variation for repeatability
CV_R	Vergleichsvariationskoeffizient Coefficient of variation for reproducibility
m	Mittelwert mean value
n	Einzelwerte single results
n_1	gültige Einzelwerte in der Auswertung valid single results in report
p	Labore im Ringversuch laboratories in proficiency test
p_1	gültige Labore in der Auswertung valid laboratories in report
r	Wiederholbarkeit (-grenze) repeatability (limit)
R	Vergleichbarkeit (-sgrenze) reproducibility (limit)
s_r	Wiederholstandardabweichung repeatability standard deviation
s_R	Vergleichsstandardabweichung reproducibility standard deviation
SD	Standardabweichung standard deviation
tol_{up}	obere Toleranzgrenze upper tolerance level
tol_{low}	untere Toleranzgrenze lower tolerance level
x_a	"Wahrer Wert", (s. Kap. 2) "true value", (s. chap. 2)
Δ	Differenz difference

2 Aufbau des Ringversuchs / Design of Proficiency Test

Material/Materials : 6 Proben/Samples: Silomais

	2201	2202	2203	2204	2205	2206
Trockenmasse / dry matter						
[%]	91.10	91.03	91.12	91.63	90.99	90.83
Rohprotein / XP						
[% TM]	5.79	6.61	6.73	6.63	6.01	6.09
Rohfaser / XF						
[% TM]	20.04	15.56	15.82	17.20	16.14	18.66
Rohfett / XL						
[% TM]	2.35	2.74	2.55	3.04	2.82	2.19
Stärke / XS						
[% TM]	30.04	39.83	34.11	37.37	39.35	29.87
Zucker / XZ						
[% TM]	9.50	7.43	11.79	5.45	7.15	11.05
aNDFom [% TM]	42.72	35.56	36.14	39.39	37.10	40.76
ADFom [% TM]	24.32	18.76	19.05	20.87	18.94	22.37
ADL [% TM]	2.26	1.90	1.68	2.01	1.76	2.17
NDF [% TM]	43.24	35.90	36.20	39.29	37.07	41.19
ADF [% TM]	25.25	19.77	19.56	21.66	20.11	23.38
Elos / Cellulase						
[% TM]	67.79	74.05	74.45	71.86	74.32	69.93

Für die Beschreibung der Proben wurden die Mittelwerte der Analysen dargestellt. Weil aber je nach Merkmal eine unterschiedliche Anzahl an Laboren in die Mittelwertberechnung eingehen, sind die dargestellten Werte unter Umständen rechnerisch nicht passend. D.h. logische oder rechnerische Schlussfolgerungen - z.B. ADFom < ADF oder CH₄-Gehalt = Methan-Ertrag/Biogas-Ertrag - müssen hier nicht stimmen.

In the previous table the mean of the analyses from this proficiency test are listed. Because the outliers are determined per constituent different number of lab results were used to calculate the mean, which might result in inappropriate results in the above table. I.e. logical or mathematical conclusions - e.g. ADFom < ADF or methane content = methane yield / biogas yield - might not been fulfilled.

Versand / Distribution : vorvermahlen als Pulver / preground as powder

Methoden / Methods : alle Merkmale / VDLUFA 31.3

Merkmal	Ausreißer- durchläufe	C-Ausreißer ignorieren
Trockenmasse / dry matter	1	x
Rohprotein / XP	1	x
Rohfaser / XF	1	x
Rohfett / XL	1	x
Stärke / XS	1	x
Zucker / XZ	1	x
aNDFom	1	x
ADFom	1	x
ADL	1	x
NDF	1	x
ADF	1	x
Elos / Cellulase	1	x

Diese Vorgaben entsprechen den Empfehlungen der "VD-LUFA FG Futtermittel" (VDLUFA 2015).

According to a recommendation of "VDLUFA FG Futtermittel" no C outliers are removed from the report (VDLUFA 2015).

Terminologie / Terminology : Gemäß ISO 5725 werden Einzelwerte als Ausreißer bestimmt, die nicht zu den übrigen Werten dieses Labors passen. (Typ A)

Ferner werden alle Werte eines Labors markiert, wenn der Labormittelwert dieses Labors statistisch signifikant von dem Mittelwert aller Labore abweicht (Typ B) oder die laborinterne Streuung erhöht ist (Typ C).

Bei allen drei Typen von Ausreißern wird unterschieden, ob diese Ausreißer signifikant auf dem 1%-Niveau sind (Typ A, B und C) — dann werden diese Messergebnisse aus der Auswertung herausgenommen — oder ob die Signifikanz nur auf dem 5%-Niveau gegeben ist (Typ a, b, und c) — dann werden diese Werte markiert und in der weiteren Berechnung berücksichtigt.

D-Ausreißer werden per Hand, ohne statistische Berechnungen aus der Auswertung herausgenommen.

Die HORRAT-Zahl macht eine Aussage über die Güte des Ringversuchs. Dazu wird die Vergleichbarkeit relativ zum Mittelwert des Ringversuchs gesetzt und dann mit einer empirischen Verteilung verglichen. Streng genommen gilt die

HORRAT-Zahl nur für chemisch eindeutig definierte Parameter (d.h. nicht für Konventionenmethoden) und auch nicht bei Mengenbestandteilen.

Die z-Scores wurden nach DIN 38402-45 berechnet. Die Toleranzgrenzen wurden mit $m \pm 2 * s_R$ bzw. $x_a \pm 2 * s_R$ bestimmt, wenn ein "wahrer Wert" den Proben zu geordnet wurde.

According to ISO 5725 single values are marked as A outliers, if these single values don't fit to the remaining values of that laboratory (type A).

All values from a single laboratory are marked as outliers, if the laboratory mean does not fit the mean across all labs (type B) or if the the standard deviations between single labs in a laboratory is significantly increased (type C).

For all types of outliers the test is done on a significance level of 1% (type A, B, C) – the samples are removed from the report – and on the 5% level (type a, b, c) – the data are retrieved in the report.

D outliers are removed by hand, without a statistical test from the report.

The HORRAT value makes a statement about the quality of the proficiency test. The reproducibility is calculated as a fraction of the mean in the proficiency test and compared to a empirical distribution. The HORRAT value is only valid for chemically defined parameter (i.e. not for conventional methods) and not for major components.

*The z scores are calculated according to DIN 38402-45. The tolerance levels were calculated with $m \pm 2 * s_R$ and $x_a \pm 2 * s_R$, if the samples were assigned a "true value".*

Verweise / Literature : DIN 38402-45 (2003): Ringversuche zur externen Qualitätskontrolle von Laboratorien (A45). DEV zur Wasser-, Abwasser- und Schlammuntersuchung.

DIN ISO 13528 (2009): Statistische Verfahren für Eignungsprüfungen durch Ringversuche. Beuth-Verlag, B.

FAO (2015): Things to know about the ring text. FAO about the FAO-IAG Ring Text. Verfügbar unter: http://www.fao.org/ag/againfo/home/documents/2015_Announcement_Ring_test.pdf (abgerufen am 5. Mai 2020).

ISO 5725 (1994): Precision of Test Methods. ISO, Genf, CH.

4 Laborbeurteilung nach DIN ISO 13528 / Proficiency test according to DIN ISO 13528

4.1 Kriterien für die Laborbeurteilung / Criteria for proficiency test

Zur Berechnung der z-Werte wurde die folgenden Vergleichbarkeiten herangezogen. Als Grenzwerte gelten bei der Laborbeurteilung für bestanden:

$$-2 \leq z - Wert \leq 2$$

For calculation of the z scores the following reproducibilities were used. The limits for a successful participating in the proficiency test is:

$$-2 \leq zscore \leq 2$$

Pos.	Merkmal Constituent	s_R	Einheit Unit	Quelle Source
2	Rohprotein / XP	0.38	% TM	VDLUFA ASR
3	Rohfaser / XF	1.00	% TM	VDLUFA ASR
4	Rohfett / XL	0.30	% TM	VDLUFA ASR
5	Stärke / XS	1.50	% TM	VDLUFA ASR
6	Zucker / XZ	0.75	% TM	VDLUFA ASR
7	aNDFom	1.75	% TM	VDLUFA ASR
8	ADFom	1.10	% TM	VDLUFA ASR
10	NDF	1.75	% TM	VDLUFA ASR
11	ADF	1.10	% TM	VDLUFA ASR
12	Elos / Cellulase	1.75	% TM	VDLUFA ASR

Falls in der obigen Tabelle kein Eintrag zu einem Merkmal gemacht wurde, wurde zur Berechnung der z-Werte die Vergleichbarkeit, wie sie in diesem Ringversuch bestimmt worden ist, herangezogen.

In case of no entry in the above table for a constituent for calculation of the z scores the reproducibility as determined in this ring test was used.

4.2 Zusammenfassung der Laborbeurteilung / Summary of proficiency test

Die Beurteilung in der folgenden Tabelle, ob für eine Probe und ein Merkmal der Ringversuch bestanden wurde, richtet sich nach den Kriterien zum z-Wert im vorigen Abschnitt.

The criterium in the next table whether a lab was successful for a single sample was given in the previous section.

Labor	Trockenmasse / dry matter	Rohprotein / XP	Rohfaser / XF	Rohfett / XL	Stärke / XS	Zucker / XZ	aNDFom	ADFom	ADL	NDF	ADF	Elos / Cellulase
3	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6
4	6/6	6/6	6/6	6/6	4/6	6/6	6/6	6/6	4/6	6/6	6/6	6/6
5	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6
6	2/6	6/6	6/6	6/6	4/6	6/6	6/6	6/6	5/6	6/6	6/6	5/6
7	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6
9	1/6	6/6	6/6	6/6	4/6	4/6	6/6	6/6	6/6	6/6	6/6	6/6
10	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6
11	5/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6
12	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6
13	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6
14	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6
15	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6
16	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6
22	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6
23	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6
24	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6
25	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6
26	4/6	6/6	6/6	6/6	5/6	5/6	6/6	6/6	6/6	6/6	6/6	6/6
27	6/6	0/6	4/6	6/6	6/6	3/6	6/6	3/6	0/6	6/6	6/6	0/6
29	6/6	6/6	6/6	6/6	6/6	6/6	5/6	5/6	5/6	5/6	6/6	6/6
30	6/6	6/6	6/6	6/6	2/6	6/6	6/6	0/6	6/6	6/6	6/6	6/6
34	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6
112	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6
113	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6
125	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6
134	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	5/6
212	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6

In der vorigen Tabelle sind die Analysen der verschiedenen Labore



Trockenmasse / dry matter

als "bestandene Proben von allen Proben" (bestanden/alle) angegeben. Wenn alle Proben bestanden sind, wird das Feld für dieses Labor für dieses Merkmal grün hinterlegt. Wenn **mindestens 80% aller Proben** bestanden sind oder bei mehr als einer Probe im Ringversuch **genau eine Probe nicht bestanden ist**, gelb, wenn weniger bestanden sind, rot hinterlegt.

*In the previous table the analyses of each lab is described as "successful samples of all samples" (successfull/all). If all samples are analysed successfully, the color for this lab and constituent is marked green. If **at least 80% of all samples** are analysed successfully or for at least two samples in the proficiency test **exactly one sample was not analysed successfully**, yellow, if less, the cell is marked red.*

4.3 Einzelne Merkmale / Constituents

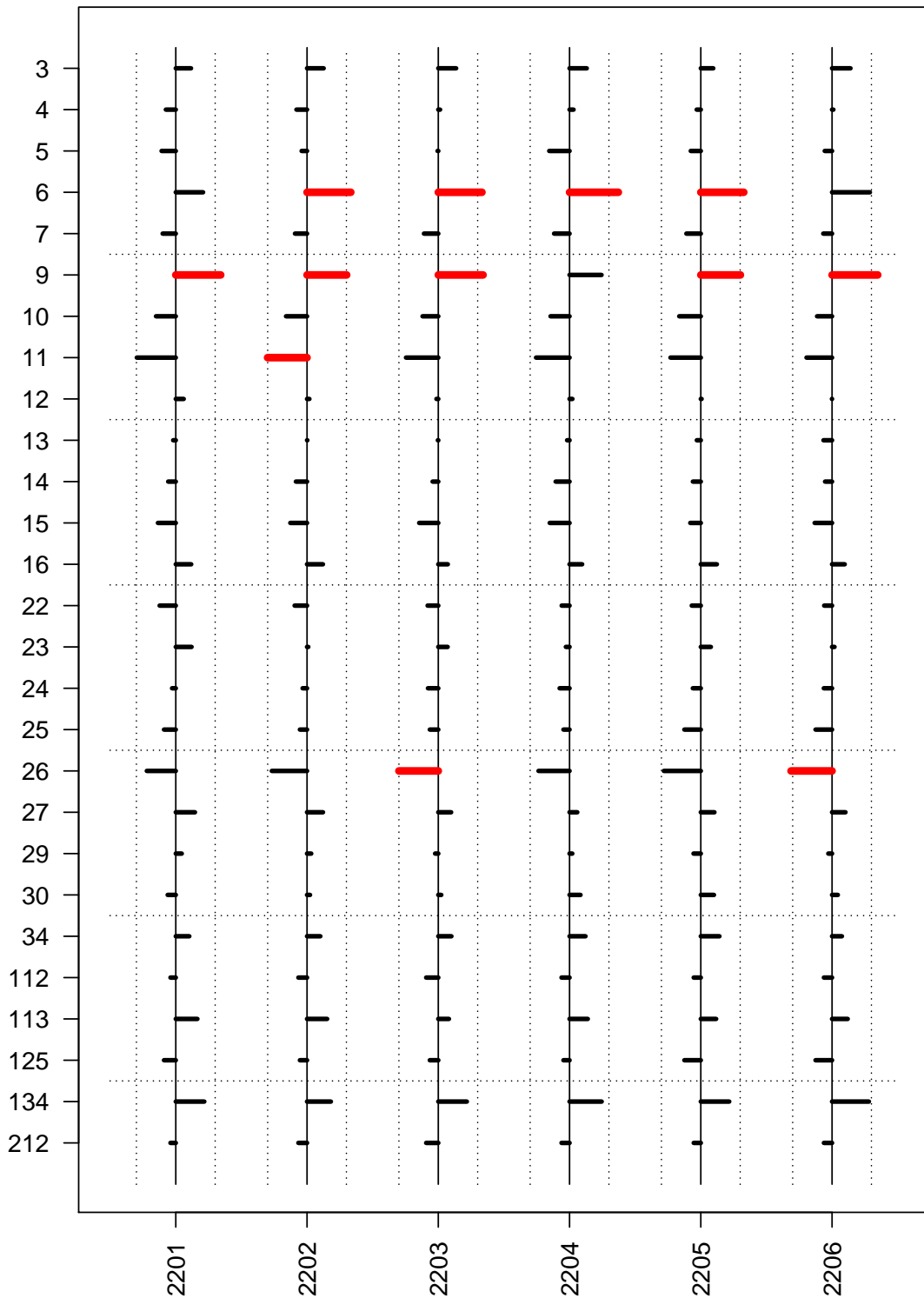
4.3.1 Merkmal / Constituent: Trockenmasse / dry matter

Vergleichbarkeit / reproducibility Zur Berechnung der z-Werte wird die Vergleichbarkeit, wie sie in diesem Ringversuch bestimmt worden ist, herangezogen.

For calculation of the z scores the reproducibility as determined in this ring test was used

Trockenmasse / dry matter

z-Werte / z Scores



Senkrecht finden sich die Labore, waagrecht jeweils die Proben.

Trockenmasse / dry matter

Die Balken für die verschiedenen Proben liegen auf einer Ebene nebeneinander. Rote Balken markieren Labore, deren Labormittelwert für diese Probe einen z-Wert kleiner -2 oder größer 2 aufweist.

Die senkrechten, gestrichelten Linien markieren einen z-Wert von -2.0 bzw. 2.0 . Die waagerechten, gestrichelten Linien sind Hilfslinien zur waagerechten Orientierung. Die numerische Darstellung der z-Werte findet sich im Anhang.

Laboratories are listed vertically, samples horizontally. The bars for all samples from one lab are listed horizontally. Red bars are used to mark labs, which lab mean for this samples have a z score smaller than -2 or larger than 2 .

The vertical dashed lines mark a z score of -2.0 and 2.0 . The horizontal dashed lines are reading aids. The numerical z scores are listed in the appendix.

Rohprotein / XP

4.3.2 Merkmal / Constituent: Rohprotein / XP

Vergleichbarkeit / reproducibility Zur Berechnung der z-Werte wurde die Vergleichbarkeit der Methode, wie sie in der Norm VDLUFA ASR beschrieben ist, herangezogen.

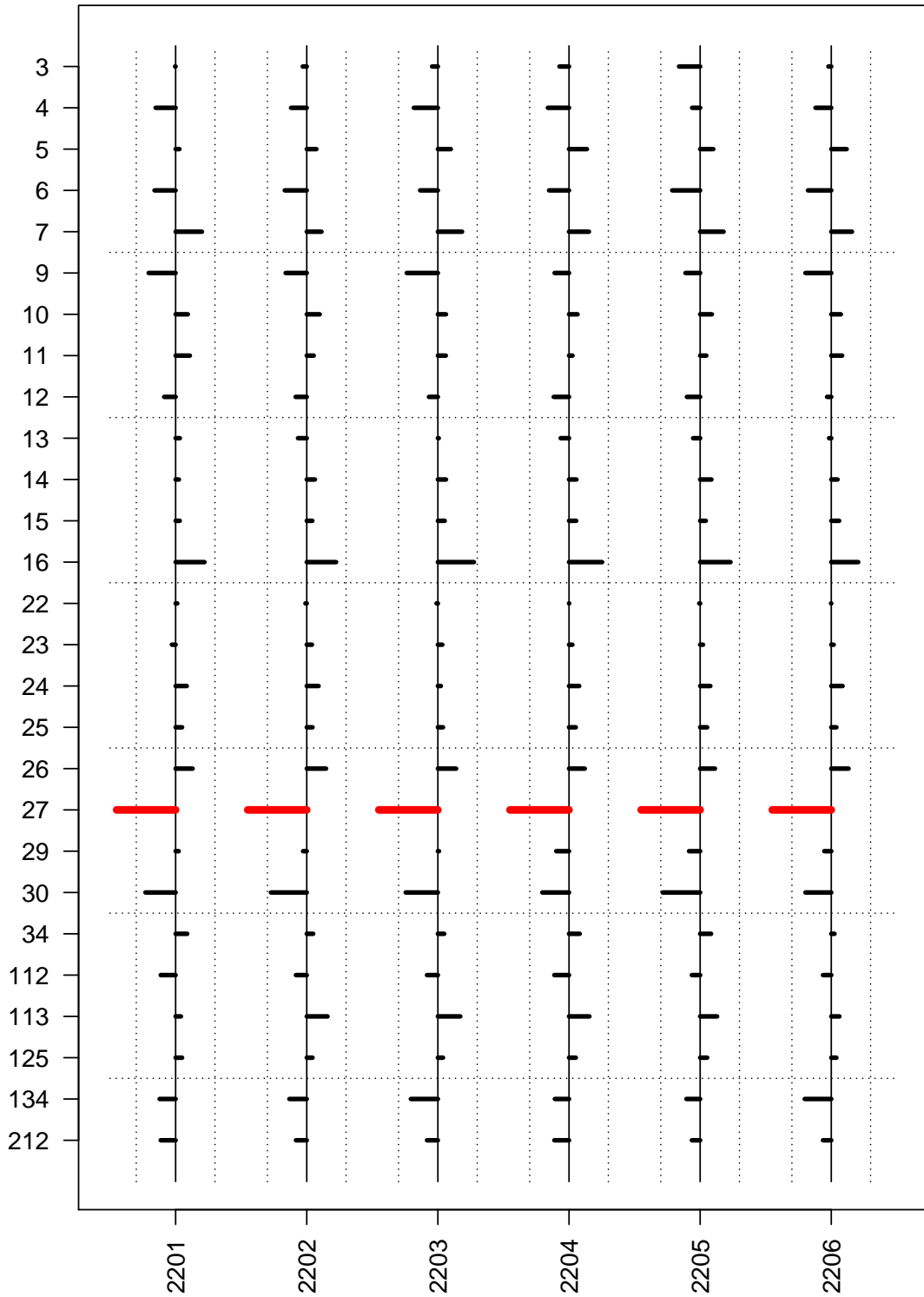
For calculation of the z scores the reproducibility of the method describe in VDLUFA ASR was used.

Vergleichsstandardabweichung / Reproducibility standard deviation s_R : 0.38 % TM

Quelle / Source: VDLUFA ASR

Rohprotein / XP

z-Werte / z Scores



Senkrecht finden sich die Labore, waagrecht jeweils die Proben.

Rohprotein / XP

Die Balken für die verschiedenen Proben liegen auf einer Ebene nebeneinander. Rote Balken markieren Labore, deren Labormittelwert für diese Probe einen z-Wert kleiner -2 oder größer 2 aufweist.

Die senkrechten, gestrichelten Linien markieren einen z-Wert von -2.0 bzw. 2.0. Die waagerechten, gestrichelten Linien sind Hilfslinien zur waagerechten Orientierung. Die numerische Darstellung der z-Werte findet sich im Anhang.

Laboratories are listed vertically, samples horizontally. The bars for all samples from one lab are listed horizontally. Red bars are used to mark labs, which lab mean for this samples have a z score smaller than -2 or larger than 2.

The vertical dashed lines mark a z score of -2.0 and 2.0. The horizontal dashed lines are reading aids. The numerical z scores are listed in the appendix.

Systematische Labordifferenz / lab bias

Probe/Sample Labor/Lab	2201		2202		2203		2204		2205		2206		Differenz m ³ SD ⁴
	m ¹	Δ ²	m ¹	Δ ²	m ¹	Δ ²	m ¹	Δ ²	m ¹	Δ ²	m ¹	Δ ²	
3	5.78	-0.01	6.54	-0.08	6.62	-0.11	6.44	-0.18	5.60	-0.40	6.03	-0.05	-0.14 0.21
4	5.41	-0.38	6.31	-0.30	6.28	-0.46	6.22	-0.40	5.85	-0.15	5.79	-0.30	-0.33 0.38
5	5.86	0.07	6.80	0.18	6.98	0.25	6.97	0.34	6.26	0.25	6.38	0.29	0.23 0.27
6	5.39	-0.40	6.19	-0.42	6.40	-0.34	6.25	-0.38	5.47	-0.53	5.64	-0.44	-0.42 0.46
7	6.29	0.50	6.89	0.28	7.20	0.46	7.01	0.38	6.45	0.45	6.48	0.39	0.41 0.46
9	5.28	-0.51	6.21	-0.40	6.14	-0.59	6.35	-0.27	5.73	-0.28	5.60	-0.49	-0.43 0.49
10	6.02	0.23	6.86	0.25	6.89	0.15	6.79	0.16	6.23	0.22	6.27	0.18	0.20 0.22
11	6.06	0.27	6.75	0.13	6.89	0.15	6.69	0.07	6.12	0.12	6.30	0.21	0.16 0.19
12	5.57	-0.22	6.40	-0.21	6.56	-0.17	6.33	-0.29	5.75	-0.25	6.01	-0.08	-0.20 0.24
13	5.87	0.08	6.45	-0.17	6.73	0.00	6.47	-0.16	5.87	-0.13	6.05	-0.04	-0.07 0.13
14	5.85	0.06	6.77	0.16	6.89	0.15	6.77	0.14	6.22	0.22	6.21	0.12	0.14 0.16
15	5.87	0.08	6.72	0.11	6.86	0.13	6.76	0.14	6.12	0.11	6.24	0.15	0.12 0.13
16	6.34	0.55	7.17	0.56	7.42	0.69	7.26	0.63	6.59	0.58	6.60	0.51	0.59 0.65
22	5.82	0.03	6.59	-0.03	6.71	-0.02	6.63	0.00	5.99	-0.02	6.09	-0.00	-0.01 0.02
23	5.72	-0.07	6.71	0.10	6.82	0.08	6.69	0.06	6.06	0.05	6.14	0.05	0.05 0.08
24	6.00	0.21	6.84	0.23	6.79	0.06	6.82	0.19	6.20	0.19	6.30	0.22	0.18 0.21
25	5.91	0.12	6.72	0.11	6.83	0.10	6.75	0.13	6.14	0.13	6.19	0.10	0.12 0.13
26	6.11	0.32	6.98	0.37	7.08	0.35	6.93	0.30	6.29	0.28	6.42	0.33	0.33 0.36
27	3.68	-2.11	3.97	-2.64	4.57	-2.17	4.08	-2.55	3.33	-2.68	3.50	-2.59	-2.46 2.70
29	5.85	0.06	6.54	-0.07	6.76	0.02	6.38	-0.24	5.79	-0.21	5.96	-0.13	-0.10 0.16
30	5.21	-0.58	5.93	-0.68	6.12	-0.61	6.12	-0.51	5.29	-0.71	5.60	-0.49	-0.60 0.66
34	6.01	0.22	6.74	0.12	6.85	0.12	6.83	0.20	6.22	0.21	6.15	0.06	0.16 0.18
112	5.51	-0.28	6.41	-0.21	6.53	-0.21	6.35	-0.28	5.85	-0.16	5.93	-0.16	-0.22 0.24
113	5.89	0.10	7.01	0.40	7.16	0.43	7.01	0.39	6.33	0.32	6.24	0.16	0.30 0.35
125	5.91	0.12	6.72	0.11	6.83	0.10	6.75	0.13	6.14	0.13	6.19	0.10	0.12 0.13
134	5.48	-0.31	6.28	-0.33	6.22	-0.52	6.36	-0.27	5.75	-0.26	5.58	-0.51	-0.37 0.42
212	5.51	-0.28	6.41	-0.21	6.53	-0.21	6.35	-0.28	5.85	-0.16	5.93	-0.16	-0.22 0.24

¹ Mittelwert der Analysen dieses Labores / *Mean of analyses of this lab*

² Differenz zum "wahren Wert" / *Differences to "true value"*

³ Mittelwert der Differenzen / *Mean of differences*

⁴ Standardabweichung der Differenzen / *Standard deviations of differences*

Rohfaser / XF

4.3.3 Merkmal / Constituent: Rohfaser / XF

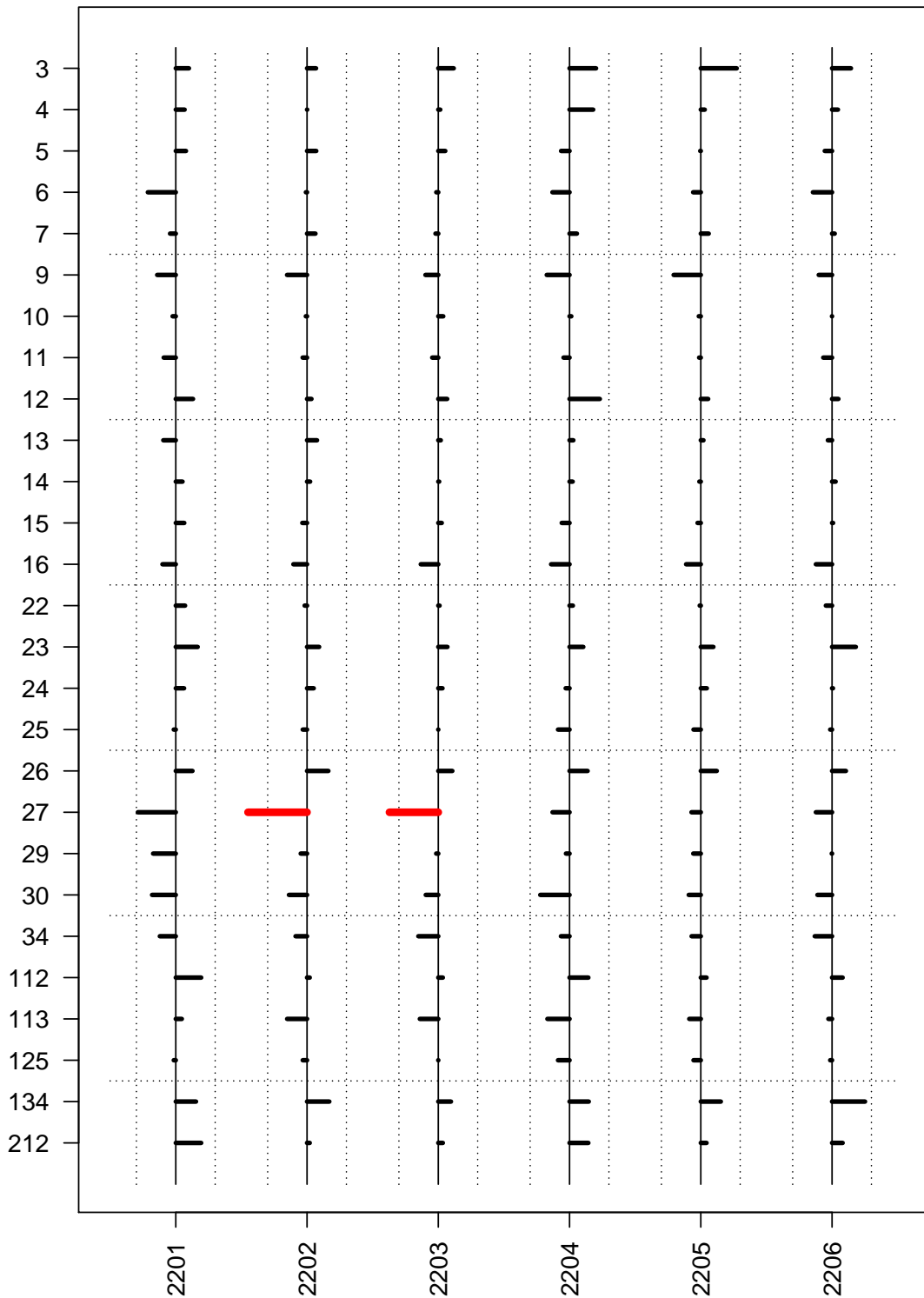
Vergleichbarkeit / reproducibility Zur Berechnung der z-Werte wurde die Vergleichbarkeit der Methode, wie sie in der Norm VDLUFA ASR beschrieben ist, herangezogen.

For calculation of the z scores the reproducibility of the method describe in VDLUFA ASR was used.

Vergleichsstandardabweichung / Reproducibility standard deviation s_R : 1.00 % TM

Quelle / Source: VDLUFA ASR

z-Werte / z Scores



Senkrecht finden sich die Labore, waagrecht jeweils die Proben.

Rohfaser / XF

Die Balken für die verschiedenen Proben liegen auf einer Ebene nebeneinander. Rote Balken markieren Labore, deren Labormittelwert für diese Probe einen z-Wert kleiner -2 oder größer 2 aufweist.

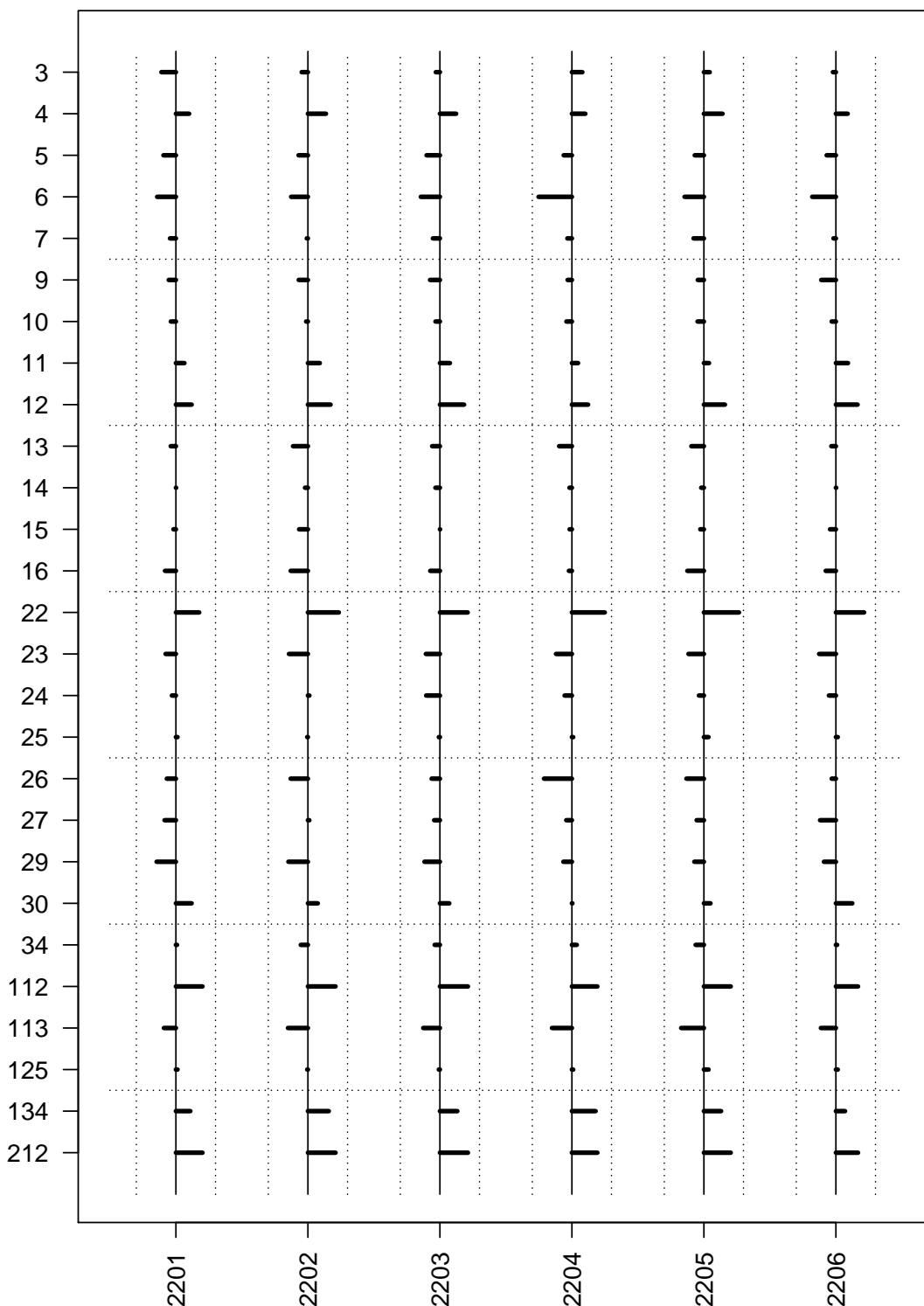
Die senkrechten, gestrichelten Linien markieren einen z-Wert von -2.0 bzw. 2.0. Die waagerechten, gestrichelten Linien sind Hilfslinien zur waagerechten Orientierung. Die numerische Darstellung der z-Werte findet sich im Anhang.

Laboratories are listed vertically, samples horizontally. The bars for all samples from one lab are listed horizontally. Red bars are used to mark labs, which lab mean for this samples have a z score smaller than -2 or larger than 2.

The vertical dashed lines mark a z score of -2.0 and 2.0. The horizontal dashed lines are reading aids. The numerical z scores are listed in the appendix.

Rohfett / XL

z-Werte / z Scores



Senkrecht finden sich die Labore, waagrecht jeweils die Proben.

Rohfett / XL

Die Balken für die verschiedenen Proben liegen auf einer Ebene nebeneinander. Rote Balken markieren Labore, deren Labormittelwert für diese Probe einen z-Wert kleiner -2 oder größer 2 aufweist.

Die senkrechten, gestrichelten Linien markieren einen z-Wert von -2.0 bzw. 2.0. Die waagerechten, gestrichelten Linien sind Hilfslinien zur waagerechten Orientierung. Die numerische Darstellung der z-Werte findet sich im Anhang.

Laboratories are listed vertically, samples horizontally. The bars for all samples from one lab are listed horizontally. Red bars are used to mark labs, which lab mean for this samples have a z score smaller than -2 or larger than 2.

The vertical dashed lines mark a z score of -2.0 and 2.0. The horizontal dashed lines are reading aids. The numerical z scores are listed in the appendix.

Systematische Labordifferenz / lab bias

Probe/Sample Labor/Lab	2201		2202		2203		2204		2205		2206		Differenz m ³ SD ⁴
	m ¹	Δ^2	m ¹	Δ^2	m ¹	Δ^2	m ¹	Δ^2	m ¹	Δ^2	m ¹	Δ^2	
3	2.13	-0.22	2.65	-0.09	2.49	-0.06	3.20	0.16	2.91	0.09	2.15	-0.05	-0.03 0.14
4	2.55	0.20	3.02	0.27	2.80	0.25	3.24	0.20	3.10	0.28	2.37	0.18	0.23 0.26
5	2.16	-0.19	2.60	-0.14	2.35	-0.20	2.91	-0.12	2.68	-0.14	2.05	-0.14	-0.16 0.17
6	2.06	-0.28	2.49	-0.25	2.26	-0.29	2.53	-0.51	2.52	-0.29	1.83	-0.36	-0.33 0.37
7	2.26	-0.09	2.73	-0.02	2.45	-0.11	2.97	-0.07	2.66	-0.16	2.16	-0.04	-0.08 0.10
9	2.24	-0.11	2.60	-0.14	2.40	-0.15	2.97	-0.06	2.73	-0.09	1.97	-0.22	-0.13 0.15
10	2.27	-0.08	2.72	-0.03	2.49	-0.07	2.96	-0.08	2.72	-0.10	2.13	-0.06	-0.07 0.08
11	2.48	0.13	2.92	0.18	2.70	0.15	3.13	0.09	2.89	0.08	2.38	0.18	0.14 0.15
12	2.59	0.24	3.09	0.34	2.92	0.37	3.28	0.24	3.14	0.32	2.52	0.33	0.31 0.34
13	2.27	-0.08	2.52	-0.23	2.44	-0.12	2.85	-0.19	2.63	-0.19	2.12	-0.07	-0.15 0.17
14	2.35	0.00	2.70	-0.04	2.49	-0.07	3.00	-0.04	2.78	-0.04	2.20	0.00	-0.03 0.04
15	2.31	-0.04	2.61	-0.13	2.56	0.00	3.00	-0.03	2.76	-0.05	2.10	-0.09	-0.06 0.08
16	2.18	-0.17	2.48	-0.26	2.41	-0.15	2.99	-0.05	2.57	-0.25	2.04	-0.15	-0.17 0.20
22	2.70	0.35	3.21	0.47	2.97	0.42	3.54	0.50	3.35	0.53	2.62	0.43	0.45 0.50
23	2.19	-0.16	2.46	-0.29	2.34	-0.21	2.80	-0.24	2.58	-0.23	1.94	-0.25	-0.23 0.26
24	2.29	-0.06	2.76	0.02	2.35	-0.21	2.93	-0.11	2.74	-0.07	2.09	-0.11	-0.09 0.12
25	2.37	0.02	2.73	-0.01	2.54	-0.02	3.06	0.02	2.89	0.07	2.22	0.03	0.02 0.04
26	2.21	-0.14	2.48	-0.26	2.43	-0.13	2.62	-0.42	2.55	-0.26	2.13	-0.06	-0.21 0.27
27	2.18	-0.17	2.76	0.02	2.47	-0.09	2.95	-0.09	2.71	-0.11	1.95	-0.24	-0.11 0.15
29	2.06	-0.29	2.45	-0.30	2.32	-0.23	2.91	-0.13	2.67	-0.15	2.01	-0.18	-0.21 0.24
30	2.58	0.24	2.89	0.15	2.70	0.14	3.05	0.01	2.92	0.10	2.44	0.25	0.15 0.18
34	2.36	0.02	2.63	-0.11	2.47	-0.08	3.11	0.07	2.69	-0.13	2.21	0.02	-0.03 0.09
112	2.75	0.40	3.16	0.42	2.98	0.42	3.42	0.39	3.22	0.41	2.53	0.34	0.40 0.43
113	2.17	-0.18	2.44	-0.30	2.30	-0.25	2.74	-0.30	2.47	-0.34	1.97	-0.23	-0.27 0.30
125	2.37	0.02	2.73	-0.01	2.54	-0.02	3.06	0.02	2.89	0.07	2.22	0.03	0.02 0.04
134	2.57	0.22	3.06	0.32	2.82	0.26	3.40	0.36	3.08	0.26	2.33	0.14	0.26 0.29
212	2.75	0.40	3.16	0.42	2.98	0.42	3.42	0.39	3.22	0.41	2.53	0.34	0.40 0.43

¹ Mittelwert der Analysen dieses Labores / *Mean of analyses of this lab*

² Differenz zum "wahren Wert" / *Differences to "true value"*

³ Mittelwert der Differenzen / *Mean of differences*

⁴ Standardabweichung der Differenzen / *Standard deviations of differences*

Stärke / XS

4.3.5 Merkmal / Constituent: Stärke / XS

Vergleichbarkeit / reproducibility Zur Berechnung der z-Werte wurde die Vergleichbarkeit der Methode, wie sie in der Norm VDLUFA ASR beschrieben ist, herangezogen.

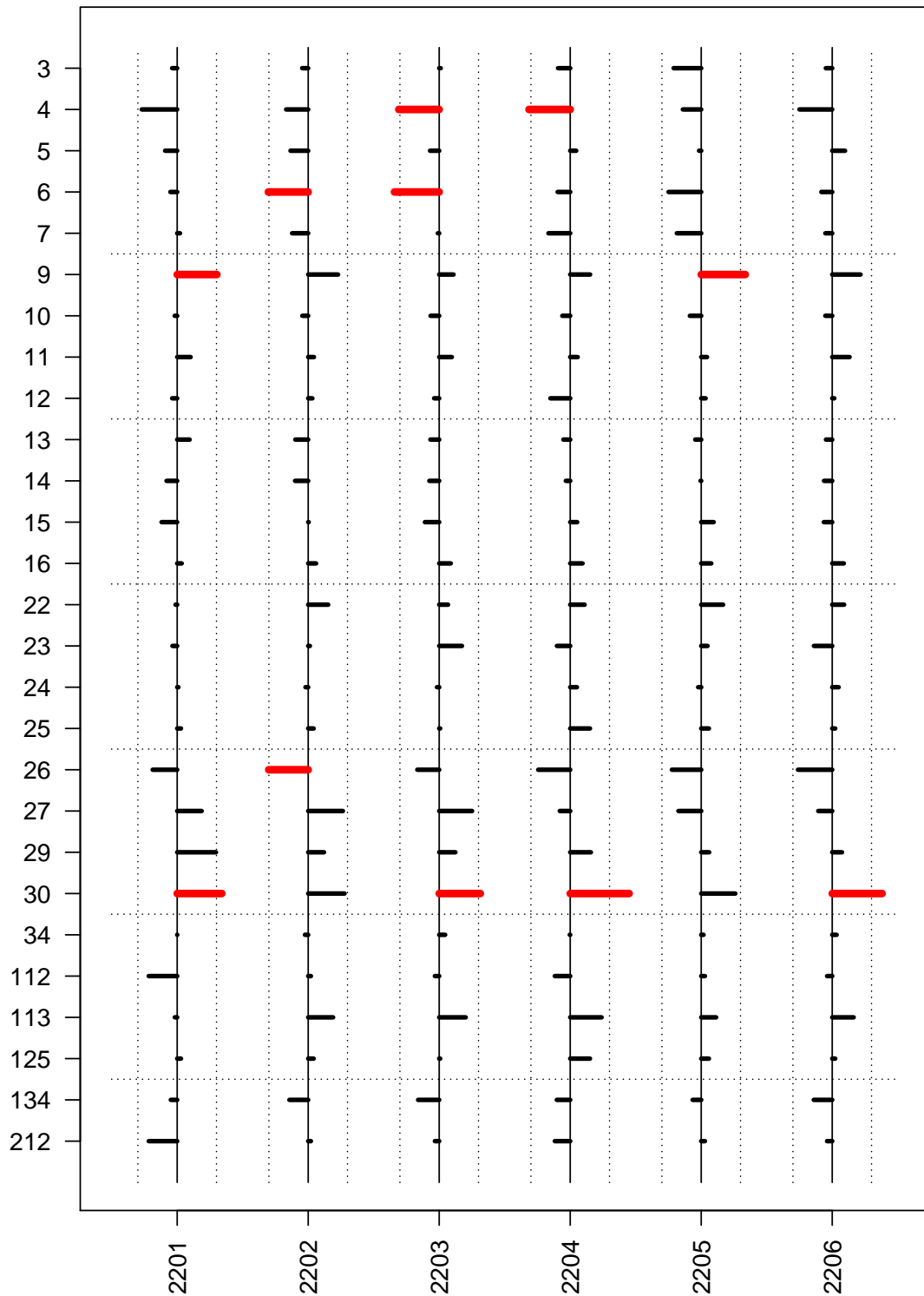
For calculation of the z scores the reproducibility of the method describe in VDLUFA ASR was used.

Vergleichsstandardabweichung / Reproducibility standard deviation s_R : 1.50 % TM

Quelle / Source: VDLUFA ASR

Stärke / XS

z-Werte / z Scores



Senkrecht finden sich die Labore, waagrecht jeweils die Proben.

14. Februar 2023

29. Seite

Zucker / XZ

4.3.6 Merkmal / Constituent: Zucker / XZ

Vergleichbarkeit / reproducibility Zur Berechnung der z-Werte wurde die Vergleichbarkeit der Methode, wie sie in der Norm VDLUFA ASR beschrieben ist, herangezogen.

For calculation of the z scores the reproducibility of the method describe in VDLUFA ASR was used.

Vergleichsstandardabweichung / Reproducibility standard deviation s_R : 0.75 % TM

Quelle / Source: VDLUFA ASR

Zucker / XZ

Die Balken für die verschiedenen Proben liegen auf einer Ebene nebeneinander. Rote Balken markieren Labore, deren Labormittelwert für diese Probe einen z-Wert kleiner -2 oder größer 2 aufweist.

Die senkrechten, gestrichelten Linien markieren einen z-Wert von -2.0 bzw. 2.0. Die waagerechten, gestrichelten Linien sind Hilfslinien zur waagerechten Orientierung. Die numerische Darstellung der z-Werte findet sich im Anhang.

Laboratories are listed vertically, samples horizontally. The bars for all samples from one lab are listed horizontally. Red bars are used to mark labs, which lab mean for this samples have a z score smaller than -2 or larger than 2.

The vertical dashed lines mark a z score of -2.0 and 2.0. The horizontal dashed lines are reading aids. The numerical z scores are listed in the appendix.

Systematische Labordifferenz / lab bias

Probe/Sample Labor/Lab	2201		2202		2203		2204		2205		2206		Differenz m ³ SD ⁴
	m ¹	Δ^2	m ¹	Δ^2	m ¹	Δ^2	m ¹	Δ^2	m ¹	Δ^2	m ¹	Δ^2	
3	10.23	0.73	8.43	1.00	12.06	0.28	5.51	0.06	7.96	0.81	11.17	0.12	0.50 0.67
4	9.84	0.33	7.88	0.45	12.50	0.72	5.57	0.11	7.35	0.21	11.41	0.36	0.36 0.45
5	8.97	-0.53	7.08	-0.35	10.91	-0.88	5.42	-0.03	6.54	-0.61	9.99	-1.05	-0.58 0.73
6	10.05	0.54	8.50	1.07	12.84	1.06	6.31	0.86	8.09	0.94	11.70	0.65	0.85 0.96
7	8.39	-1.11	6.31	-1.12	10.67	-1.11	4.99	-0.46	5.97	-1.18	10.12	-0.93	-0.99 1.11
9	8.19	-1.31	5.82	-1.61	10.66	-1.13	4.20	-1.25	5.48	-1.67	9.86	-1.19	-1.36 1.51
10	8.77	-0.73	6.99	-0.44	11.13	-0.65	5.08	-0.38	6.50	-0.65	10.42	-0.62	-0.58 0.65
11	8.64	-0.86	6.52	-0.91	10.89	-0.89	4.94	-0.52	6.34	-0.81	10.16	-0.88	-0.81 0.90
12	9.75	0.24	7.91	0.48	12.46	0.68	5.95	0.50	7.71	0.56	11.61	0.57	0.50 0.57
13	9.04	-0.46	7.17	-0.27	11.47	-0.32	5.06	-0.39	6.61	-0.54	10.84	-0.20	-0.36 0.42
14	9.26	-0.24	7.32	-0.11	11.76	-0.02	5.34	-0.11	6.86	-0.29	11.00	-0.05	-0.14 0.18
15	9.69	0.19	7.44	0.00	12.14	0.36	5.38	-0.07	6.95	-0.19	11.05	-0.00	0.05 0.20
16	9.82	0.31	7.18	-0.26	11.88	0.09	5.34	-0.11	6.75	-0.40	11.42	0.37	0.00 0.31
22	10.05	0.55	7.54	0.11	12.47	0.68	6.01	0.55	7.54	0.40	11.89	0.85	0.52 0.63
23	8.87	-0.63	6.48	-0.95	10.72	-1.06	5.18	-0.28	6.61	-0.54	10.25	-0.80	-0.71 0.83
24	9.63	0.13	7.51	0.08	12.03	0.25	5.44	-0.01	7.03	-0.12	10.89	-0.16	0.03 0.16
25	9.61	0.11	7.55	0.12	11.85	0.06	5.37	-0.08	7.25	0.10	11.32	0.27	0.10 0.15
26	7.90	-1.60	6.36	-1.07	10.39	-1.40	4.77	-0.68	6.30	-0.85	9.94	-1.11	-1.12 1.27
27	10.18	0.68	8.72	1.29	12.96	1.18	8.00	2.55	9.46	2.31	13.05	2.00	1.67 1.97
29	8.98	-0.52	7.06	-0.37	11.45	-0.33	4.78	-0.67	6.94	-0.21	10.84	-0.20	-0.39 0.46
30	10.49	0.98	8.67	1.24	12.24	0.45	6.11	0.66	8.46	1.31	11.50	0.45	0.85 1.01
34	10.16	0.66	7.98	0.55	12.37	0.58	5.98	0.52	7.76	0.61	11.51	0.46	0.56 0.62
112	10.36	0.85	7.84	0.41	12.40	0.61	6.18	0.73	7.55	0.40	11.63	0.58	0.60 0.68
113	9.67	0.17	6.85	-0.58	11.17	-0.61	4.88	-0.57	6.38	-0.77	10.36	-0.69	-0.51 0.65
125	9.61	0.11	7.55	0.12	11.85	0.06	5.37	-0.08	7.25	0.10	11.32	0.27	0.10 0.15
134	10.08	0.58	8.15	0.72	12.52	0.74	6.43	0.98	7.81	0.66	11.41	0.37	0.67 0.76
212	10.36	0.85	7.84	0.41	12.40	0.61	6.18	0.73	7.55	0.40	11.63	0.58	0.60 0.68

¹ Mittelwert der Analysen dieses Labores / *Mean of analyses of this lab*

² Differenz zum "wahren Wert" / *Differences to "true value"*

³ Mittelwert der Differenzen / *Mean of differences*

⁴ Standardabweichung der Differenzen / *Standard deviations of differences*

aNDFom

4.3.7 Merkmal / Constituent: aNDFom

Vergleichbarkeit / reproducibility Zur Berechnung der z-Werte wurde die Vergleichbarkeit der Methode, wie sie in der Norm VDLUFA ASR beschrieben ist, herangezogen.

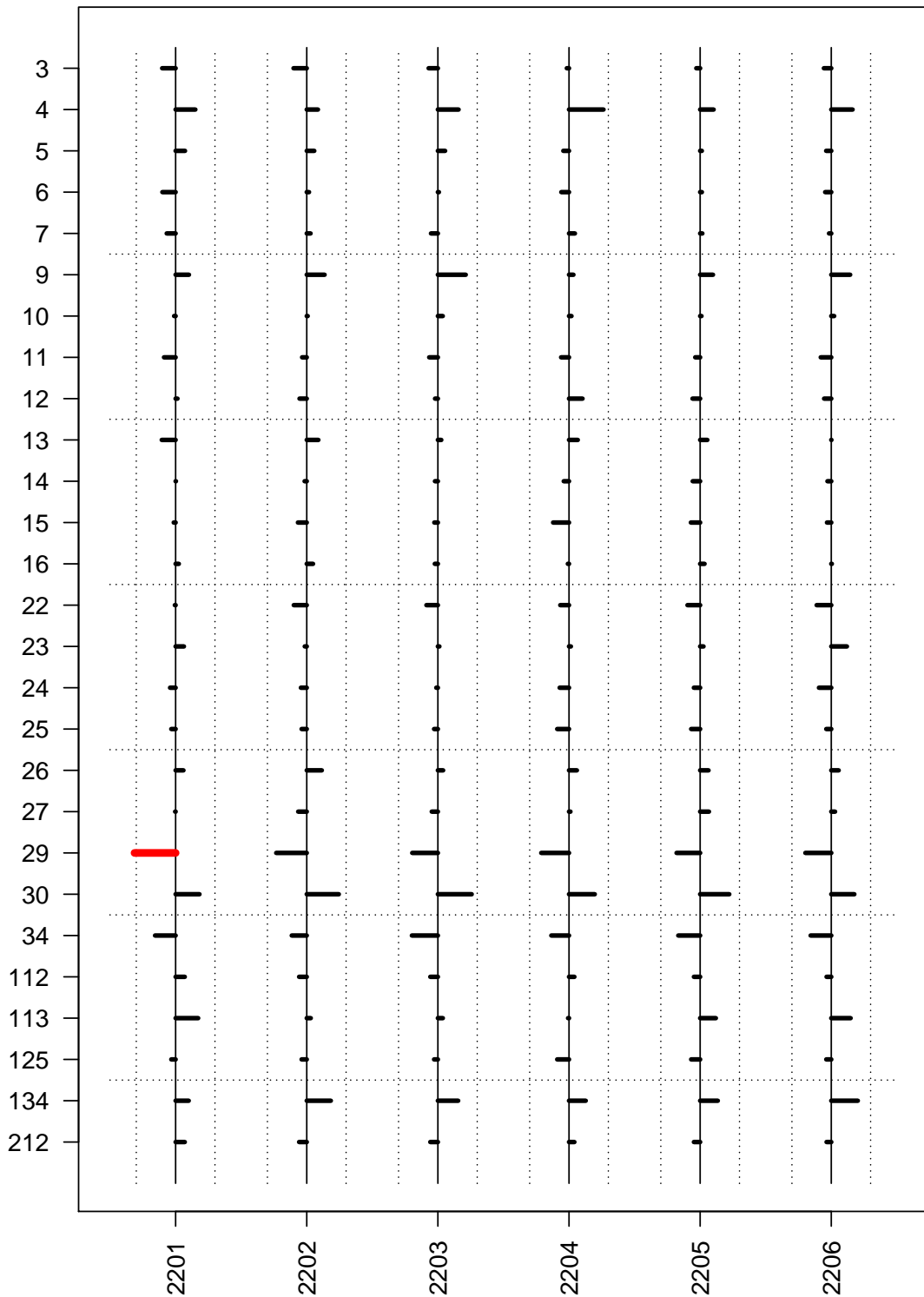
For calculation of the z scores the reproducibility of the method describe in VDLUFA ASR was used.

Vergleichsstandardabweichung / Reproducibility standard deviation s_R : 1.75 % TM

Quelle / Source: VDLUFA ASR

aNDFom

z-Werte / z Scores



Senkrecht finden sich die Labore, waagrecht jeweils die Proben.

aNDFom

Die Balken für die verschiedenen Proben liegen auf einer Ebene nebeneinander. Rote Balken markieren Labore, deren Labormittelwert für diese Probe einen z-Wert kleiner -2 oder größer 2 aufweist.

Die senkrechten, gestrichelten Linien markieren einen z-Wert von -2.0 bzw. 2.0. Die waagerechten, gestrichelten Linien sind Hilfslinien zur waagerechten Orientierung. Die numerische Darstellung der z-Werte findet sich im Anhang.

Laboratories are listed vertically, samples horizontally. The bars for all samples from one lab are listed horizontally. Red bars are used to mark labs, which lab mean for this samples have a z score smaller than -2 or larger than 2.

The vertical dashed lines mark a z score of -2.0 and 2.0. The horizontal dashed lines are reading aids. The numerical z scores are listed in the appendix.

Systematische Labordifferenz / lab bias

Probe/Sample Labor/Lab	2201		2202		2203		2204		2205		2206		Differenz m ³ SD ⁴
	m ¹	Δ ²	m ¹	Δ ²	m ¹	Δ ²	m ¹	Δ ²	m ¹	Δ ²	m ¹	Δ ²	
3	41.53	-1.20	34.38	-1.18	35.32	-0.82	39.19	-0.19	36.76	-0.34	40.10	-0.66	-0.73 0.90
4	44.48	1.75	36.55	0.99	37.98	1.84	42.46	3.07	38.30	1.20	42.66	1.90	1.79 2.09
5	43.56	0.83	36.22	0.67	36.78	0.64	38.88	-0.50	37.25	0.15	40.31	-0.45	0.22 0.64
6	41.55	-1.18	35.76	0.20	36.23	0.09	38.70	-0.68	37.25	0.15	40.22	-0.54	-0.33 0.67
7	41.93	-0.79	35.89	0.34	35.53	-0.61	39.91	0.52	37.29	0.20	40.56	-0.20	-0.09 0.54
9	43.91	1.19	37.14	1.59	38.61	2.48	39.78	0.39	38.24	1.14	42.44	1.68	1.41 1.69
10	42.59	-0.13	35.64	0.08	36.57	0.43	39.61	0.22	37.22	0.12	41.02	0.26	0.16 0.26
11	41.69	-1.03	35.14	-0.41	35.37	-0.77	38.69	-0.70	36.66	-0.44	39.82	-0.94	-0.72 0.82
12	42.89	0.16	34.92	-0.64	35.89	-0.25	40.59	1.20	36.42	-0.68	40.12	-0.64	-0.14 0.75
13	41.49	-1.23	36.59	1.03	36.44	0.30	40.17	0.78	37.74	0.64	40.77	0.01	0.25 0.86
14	42.75	0.03	35.37	-0.19	35.88	-0.26	38.92	-0.47	36.44	-0.66	40.42	-0.34	-0.31 0.42
15	42.56	-0.17	34.77	-0.78	35.82	-0.32	37.98	-1.41	36.27	-0.82	40.38	-0.38	-0.65 0.84
16	43.01	0.28	36.11	0.56	35.86	-0.27	39.29	-0.10	37.49	0.39	40.81	0.05	0.15 0.35
22	42.66	-0.07	34.40	-1.15	35.12	-1.02	38.61	-0.78	35.97	-1.12	39.46	-1.30	-0.91 1.09
23	43.46	0.74	35.38	-0.17	36.27	0.13	39.55	0.17	37.39	0.30	42.15	1.39	0.42 0.73
24	42.23	-0.49	35.04	-0.52	36.00	-0.14	38.56	-0.83	36.54	-0.56	39.66	-1.10	-0.61 0.74
25	42.34	-0.38	35.10	-0.46	35.80	-0.34	38.34	-1.05	36.30	-0.80	40.32	-0.45	-0.58 0.69
26	43.42	0.69	36.90	1.34	36.60	0.46	40.09	0.70	37.84	0.74	41.42	0.66	0.77 0.89
27	42.68	-0.04	34.80	-0.76	35.59	-0.54	39.52	0.13	37.88	0.78	41.10	0.34	-0.02 0.57
29	39.07	-3.66	32.84	-2.71	33.86	-2.28	36.92	-2.47	35.00	-2.10	38.46	-2.30	-2.59 2.89
30	44.84	2.12	38.41	2.85	39.14	3.01	41.68	2.29	39.69	2.59	42.81	2.05	2.48 2.75
34	40.89	-1.83	34.22	-1.33	33.83	-2.31	37.82	-1.57	35.16	-1.94	38.93	-1.83	-1.80 2.00
112	43.54	0.81	34.88	-0.68	35.47	-0.67	39.86	0.48	36.54	-0.55	40.34	-0.42	-0.17 0.68
113	44.73	2.00	35.91	0.35	36.57	0.44	39.31	-0.08	38.49	1.40	42.48	1.72	0.97 1.36
125	42.34	-0.38	35.10	-0.46	35.80	-0.34	38.34	-1.05	36.30	-0.80	40.32	-0.45	-0.58 0.69
134	43.89	1.16	37.70	2.14	37.94	1.80	40.87	1.49	38.67	1.57	43.12	2.36	1.75 1.97
212	43.54	0.81	34.88	-0.68	35.47	-0.67	39.86	0.48	36.54	-0.55	40.34	-0.42	-0.17 0.68

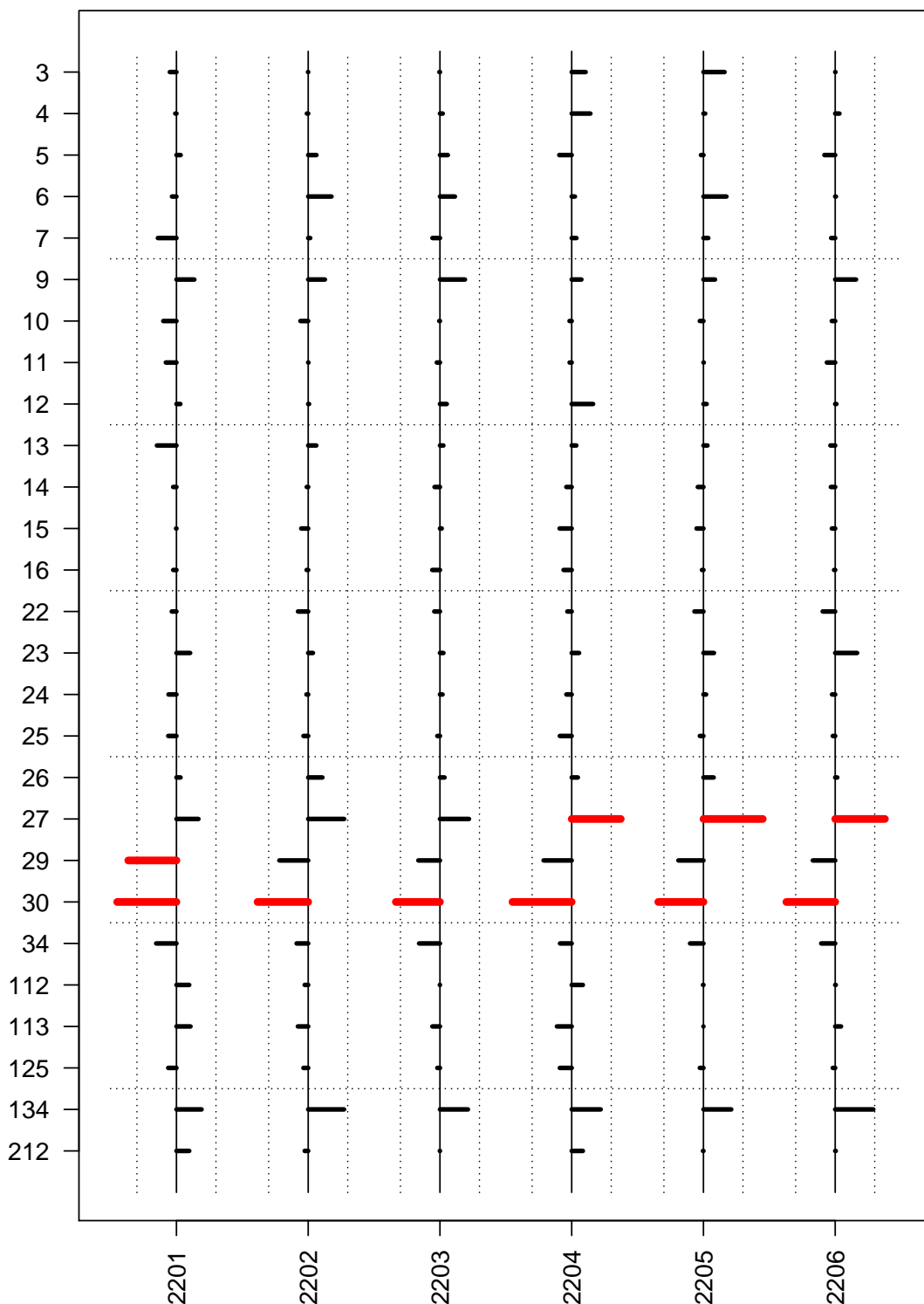
¹ Mittelwert der Analysen dieses Labores / *Mean of analyses of this lab*

² Differenz zum "wahren Wert" / *Differences to "true value"*

³ Mittelwert der Differenzen / *Mean of differences*

⁴ Standardabweichung der Differenzen / *Standard deviations of differences*

z-Werte / z Scores



Senkrecht finden sich die Labore, waagrecht jeweils die Proben.

ADFom

Die Balken für die verschiedenen Proben liegen auf einer Ebene nebeneinander. Rote Balken markieren Labore, deren Labormittelwert für diese Probe einen z-Wert kleiner -2 oder größer 2 aufweist.

Die senkrechten, gestrichelten Linien markieren einen z-Wert von -2.0 bzw. 2.0. Die waagerechten, gestrichelten Linien sind Hilfslinien zur waagerechten Orientierung. Die numerische Darstellung der z-Werte findet sich im Anhang.

Laboratories are listed vertically, samples horizontally. The bars for all samples from one lab are listed horizontally. Red bars are used to mark labs, which lab mean for this samples have a z score smaller than -2 or larger than 2.

The vertical dashed lines mark a z score of -2.0 and 2.0. The horizontal dashed lines are reading aids. The numerical z scores are listed in the appendix.

Systematische Labordifferenz / lab bias

Probe/Sample Labor/Lab	2201		2202		2203		2204		2205		2206		Differenz m ³ SD ⁴
	m ¹	Δ^2	m ¹	Δ^2	m ¹	Δ^2	m ¹	Δ^2	m ¹	Δ^2	m ¹	Δ^2	
3	23.95	-0.37	18.75	-0.01	19.01	-0.03	21.64	0.78	20.11	1.17	22.38	0.01	0.26 0.65
4	24.26	-0.07	18.69	-0.07	19.20	0.15	21.91	1.04	19.03	0.10	22.60	0.24	0.23 0.49
5	24.56	0.23	19.22	0.46	19.48	0.44	20.17	-0.69	18.80	-0.14	21.76	-0.60	-0.05 0.51
6	24.07	-0.25	20.06	1.30	19.88	0.83	21.04	0.18	20.21	1.28	22.41	0.04	0.56 0.91
7	23.29	-1.03	18.87	0.11	18.63	-0.42	21.13	0.26	19.20	0.27	22.14	-0.22	-0.17 0.54
9	25.32	1.00	19.69	0.93	20.44	1.39	21.41	0.54	19.58	0.64	23.52	1.16	0.94 1.08
10	23.59	-0.73	18.33	-0.43	19.00	-0.04	20.75	-0.12	18.73	-0.20	22.17	-0.19	-0.29 0.40
11	23.73	-0.59	18.77	0.01	18.87	-0.18	20.75	-0.12	18.95	0.02	21.90	-0.46	-0.22 0.35
12	24.54	0.22	18.76	0.00	19.43	0.38	22.06	1.19	19.12	0.18	22.43	0.07	0.34 0.57
13	23.24	-1.09	19.21	0.45	19.24	0.19	21.12	0.26	19.16	0.22	22.10	-0.27	-0.04 0.57
14	24.14	-0.18	18.68	-0.08	18.74	-0.30	20.57	-0.30	18.62	-0.31	22.12	-0.24	-0.24 0.27
15	24.30	-0.02	18.37	-0.39	19.14	0.10	20.19	-0.67	18.55	-0.38	22.18	-0.19	-0.26 0.40
16	24.14	-0.18	18.67	-0.09	18.62	-0.43	20.41	-0.46	18.85	-0.08	22.30	-0.06	-0.22 0.30
22	24.06	-0.26	18.19	-0.57	18.73	-0.31	20.62	-0.24	18.43	-0.50	21.67	-0.70	-0.43 0.51
23	25.09	0.76	19.03	0.26	19.24	0.19	21.28	0.41	19.52	0.59	23.59	1.22	0.57 0.73
24	23.88	-0.44	18.66	-0.10	19.19	0.15	20.57	-0.30	19.08	0.15	22.19	-0.18	-0.12 0.27
25	23.87	-0.46	18.50	-0.26	18.90	-0.15	20.21	-0.66	18.73	-0.20	22.23	-0.14	-0.31 0.40
26	24.55	0.23	19.55	0.79	19.30	0.26	21.21	0.34	19.50	0.57	22.48	0.12	0.38 0.49
27	25.55	1.22	20.76	2.00	20.66	1.62	23.60	2.73	22.58	3.64	25.13	2.77	2.33 2.70
29	21.64	-2.68	17.16	-1.61	17.84	-1.20	19.30	-1.56	17.54	-1.39	21.12	-1.25	-1.62 1.85
30	21.01	-3.31	15.94	-2.82	16.59	-2.46	17.54	-3.33	16.42	-2.52	19.65	-2.72	-2.86 3.16
34	23.19	-1.13	18.12	-0.65	17.88	-1.16	20.22	-0.65	18.19	-0.75	21.59	-0.78	-0.85 0.96
112	25.04	0.71	18.57	-0.20	19.04	-0.01	21.49	0.62	18.91	-0.03	22.40	0.03	0.19 0.43
113	25.11	0.78	18.18	-0.58	18.62	-0.42	20.04	-0.82	18.93	-0.00	22.69	0.32	-0.12 0.62
125	23.87	-0.46	18.50	-0.26	18.90	-0.15	20.21	-0.66	18.73	-0.20	22.23	-0.14	-0.31 0.40
134	25.72	1.40	20.76	1.99	20.60	1.56	22.48	1.61	20.48	1.55	24.48	2.12	1.71 1.89
212	25.04	0.71	18.57	-0.20	19.04	-0.01	21.49	0.62	18.91	-0.03	22.40	0.03	0.19 0.43

¹ Mittelwert der Analysen dieses Labores / *Mean of analyses of this lab*

² Differenz zum "wahren Wert" / *Differences to "true value"*

³ Mittelwert der Differenzen / *Mean of differences*

⁴ Standardabweichung der Differenzen / *Standard deviations of differences*

ADL

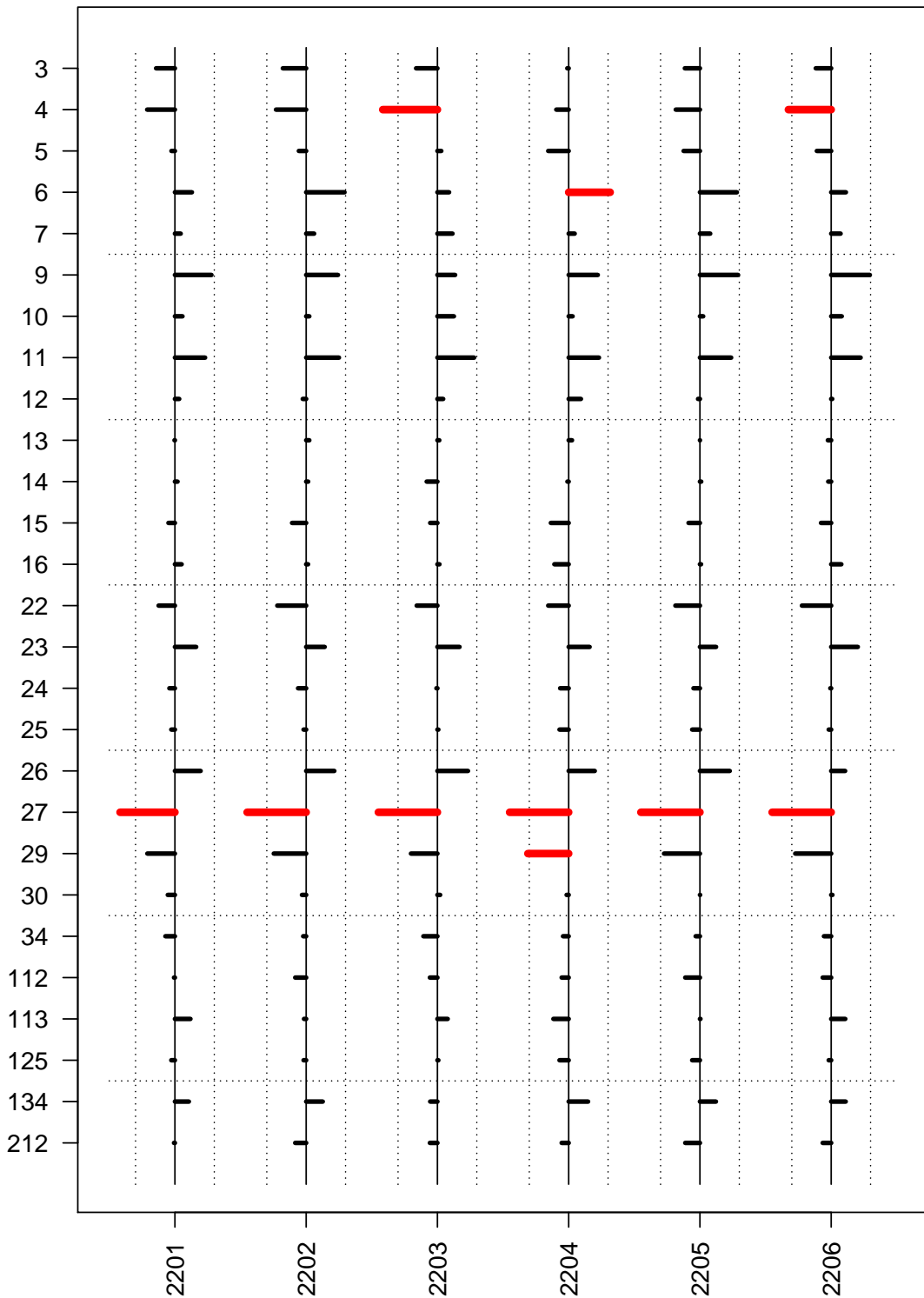
4.3.9 Merkmal / Constituent: ADL

Vergleichbarkeit / reproducibility Zur Berechnung der z-Werte wird die Vergleichbarkeit, wie sie in diesem Ringversuch bestimmt worden ist, herangezogen.

For calculation of the z scores the reproducibility as determined in this ring test was used

ADL

z-Werte / z Scores



Senkrecht finden sich die Labore, waagrecht jeweils die Proben.

ADL

Die Balken für die verschiedenen Proben liegen auf einer Ebene nebeneinander. Rote Balken markieren Labore, deren Labormittelwert für diese Probe einen z-Wert kleiner -2 oder größer 2 aufweist.

Die senkrechten, gestrichelten Linien markieren einen z-Wert von -2.0 bzw. 2.0. Die waagerechten, gestrichelten Linien sind Hilfslinien zur waagerechten Orientierung. Die numerische Darstellung der z-Werte findet sich im Anhang.

Laboratories are listed vertically, samples horizontally. The bars for all samples from one lab are listed horizontally. Red bars are used to mark labs, which lab mean for this samples have a z score smaller than -2 or larger than 2.

The vertical dashed lines mark a z score of -2.0 and 2.0. The horizontal dashed lines are reading aids. The numerical z scores are listed in the appendix.

Systematische Labordifferenz / lab bias

Probe/Sample Labor/Lab	2201		2202		2203		2204		2205		2206		Differenz m ³ SD ⁴
	m ¹	Δ ²	m ¹	Δ ²	m ¹	Δ ²	m ¹	Δ ²	m ¹	Δ ²	m ¹	Δ ²	
3	2.02	-0.24	1.66	-0.24	1.48	-0.20	2.00	-0.01	1.61	-0.15	2.03	-0.14	-0.16 0.20
4	1.91	-0.35	1.59	-0.31	1.17	-0.51	1.89	-0.12	1.52	-0.24	1.78	-0.39	-0.32 0.37
5	2.22	-0.04	1.83	-0.08	1.71	0.04	1.82	-0.20	1.60	-0.16	2.04	-0.13	-0.10 0.13
6	2.48	0.21	2.30	0.39	1.78	0.11	2.41	0.40	2.13	0.37	2.30	0.13	0.27 0.32
7	2.33	0.07	1.99	0.08	1.82	0.14	2.07	0.06	1.86	0.10	2.25	0.09	0.09 0.10
9	2.72	0.46	2.23	0.33	1.84	0.16	2.29	0.28	2.14	0.38	2.52	0.35	0.33 0.37
10	2.36	0.10	1.94	0.03	1.83	0.15	2.05	0.04	1.79	0.03	2.26	0.10	0.07 0.10
11	2.64	0.38	2.24	0.34	2.02	0.34	2.31	0.29	2.07	0.31	2.44	0.27	0.32 0.35
12	2.32	0.05	1.87	-0.04	1.73	0.05	2.13	0.12	1.74	-0.02	2.18	0.01	0.03 0.07
13	2.26	-0.01	1.94	0.03	1.69	0.02	2.05	0.03	1.76	0.00	2.14	-0.03	0.01 0.03
14	2.29	0.03	1.92	0.02	1.58	-0.10	2.00	-0.01	1.77	0.01	2.14	-0.03	-0.01 0.05
15	2.18	-0.08	1.76	-0.15	1.61	-0.07	1.84	-0.17	1.65	-0.11	2.07	-0.09	-0.11 0.13
16	2.35	0.08	1.92	0.02	1.69	0.02	1.88	-0.14	1.77	0.01	2.26	0.09	0.01 0.08
22	2.05	-0.21	1.61	-0.30	1.48	-0.19	1.82	-0.20	1.52	-0.24	1.90	-0.27	-0.23 0.26
23	2.53	0.27	2.09	0.19	1.88	0.21	2.21	0.20	1.92	0.16	2.41	0.24	0.21 0.23
24	2.19	-0.07	1.82	-0.08	1.67	-0.01	1.93	-0.08	1.70	-0.06	2.16	-0.01	-0.05 0.07
25	2.22	-0.05	1.88	-0.03	1.68	0.01	1.93	-0.09	1.68	-0.08	2.14	-0.02	-0.04 0.06
26	2.59	0.32	2.19	0.29	1.96	0.28	2.26	0.25	2.06	0.29	2.29	0.13	0.26 0.30
27	1.57	-0.69	0.98	-0.92	0.87	-0.81	1.13	-0.88	0.97	-0.79	1.42	-0.75	-0.81 0.89
29	1.91	-0.35	1.57	-0.33	1.43	-0.25	1.62	-0.39	1.41	-0.35	1.84	-0.33	-0.33 0.37
30	2.17	-0.09	1.86	-0.04	1.70	0.03	1.99	-0.02	1.76	0.00	2.18	0.01	-0.02 0.05
34	2.14	-0.12	1.87	-0.03	1.55	-0.13	1.96	-0.05	1.72	-0.04	2.10	-0.07	-0.07 0.09
112	2.25	-0.01	1.79	-0.11	1.61	-0.07	1.95	-0.07	1.62	-0.15	2.09	-0.08	-0.08 0.10
113	2.46	0.20	1.88	-0.02	1.77	0.10	1.87	-0.15	1.77	0.00	2.30	0.13	0.04 0.13
125	2.22	-0.05	1.88	-0.03	1.68	0.01	1.93	-0.09	1.68	-0.08	2.14	-0.02	-0.04 0.06
134	2.44	0.18	2.07	0.17	1.61	-0.07	2.20	0.19	1.92	0.16	2.30	0.13	0.13 0.17
212	2.25	-0.01	1.79	-0.11	1.61	-0.07	1.95	-0.07	1.62	-0.15	2.09	-0.08	-0.08 0.10

¹ Mittelwert der Analysen dieses Labores / *Mean of analyses of this lab*

² Differenz zum "wahren Wert" / *Differences to "true value"*

³ Mittelwert der Differenzen / *Mean of differences*

⁴ Standardabweichung der Differenzen / *Standard deviations of differences*

NDF

4.3.10 Merkmal / Constituent: NDF

Vergleichbarkeit / reproducibility Zur Berechnung der z-Werte wurde die Vergleichbarkeit der Methode, wie sie in der Norm VDLUFA ASR beschrieben ist, herangezogen.

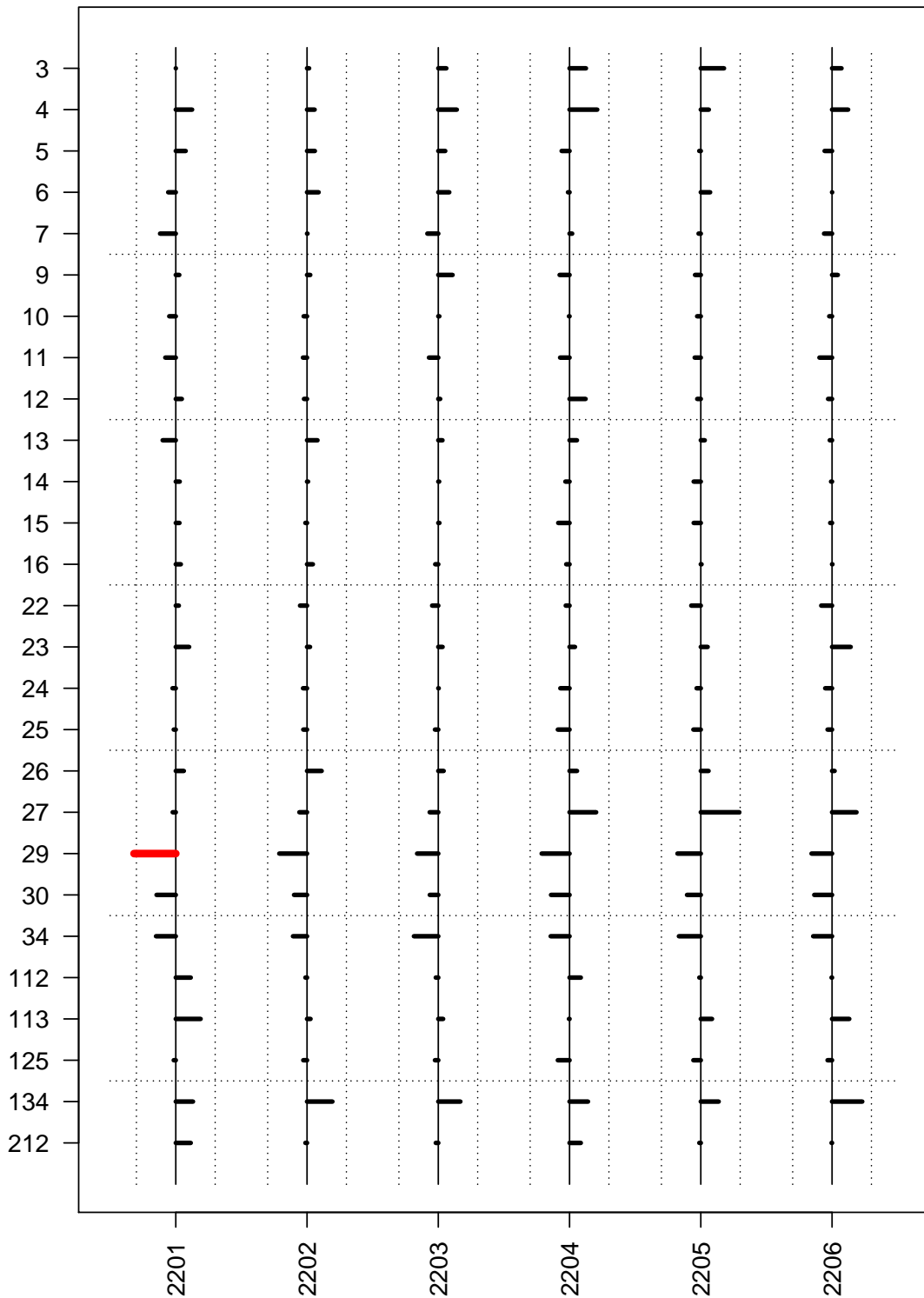
For calculation of the z scores the reproducibility of the method describe in VDLUFA ASR was used.

Vergleichsstandardabweichung / Reproducibility standard deviation s_R : 1.75 % TM

Quelle / Source: VDLUFA ASR

NDF

z-Werte / z Scores



Senkrecht finden sich die Labore, waagrecht jeweils die Proben.

NDF

Systematische Labordifferenz / lab bias

Probe/Sample Labor/Lab	2201		2202		2203		2204		2205		2206		Differenz m ³ SD ⁴
	m ¹	Δ^2	m ¹	Δ^2	m ¹	Δ^2	m ¹	Δ^2	m ¹	Δ^2	m ¹	Δ^2	
3	43.24	0.00	36.08	0.18	36.92	0.71	40.74	1.46	39.13	2.06	42.03	0.84	0.88 1.23
4	44.69	1.45	36.57	0.67	37.85	1.64	41.74	2.46	37.78	0.71	42.62	1.43	1.39 1.66
5	44.12	0.88	36.59	0.69	36.82	0.62	38.58	-0.70	36.94	-0.13	40.53	-0.66	0.11 0.72
6	42.57	-0.67	36.93	1.03	37.18	0.97	39.15	-0.14	37.90	0.83	41.20	0.01	0.34 0.80
7	41.84	-1.40	35.94	0.04	35.23	-0.97	39.52	0.23	36.87	-0.20	40.49	-0.71	-0.50 0.84
9	43.55	0.31	36.19	0.28	37.47	1.27	38.40	-0.88	36.56	-0.51	41.71	0.51	0.16 0.79
10	42.66	-0.58	35.60	-0.30	36.29	0.09	39.23	-0.05	36.75	-0.32	40.94	-0.25	-0.24 0.35
11	42.31	-0.93	35.54	-0.36	35.37	-0.83	38.45	-0.84	36.53	-0.54	40.07	-1.12	-0.77 0.89
12	43.78	0.54	35.63	-0.27	36.37	0.17	40.71	1.42	36.75	-0.32	40.84	-0.35	0.20 0.73
13	42.07	-1.17	36.83	0.93	36.57	0.37	39.94	0.65	37.42	0.35	40.99	-0.20	0.16 0.77
14	43.59	0.35	35.99	0.09	36.20	0.00	38.92	-0.37	36.44	-0.63	41.11	-0.09	-0.11 0.37
15	43.56	0.33	35.75	-0.15	36.30	0.10	38.28	-1.01	36.44	-0.63	41.03	-0.16	-0.25 0.56
16	43.69	0.45	36.42	0.52	35.93	-0.27	38.99	-0.29	37.14	0.07	41.23	0.03	0.08 0.36
22	43.51	0.27	35.28	-0.62	35.66	-0.55	38.95	-0.34	36.22	-0.85	40.23	-0.96	-0.51 0.71
23	44.42	1.18	36.16	0.26	36.58	0.38	39.77	0.48	37.68	0.61	42.85	1.65	0.76 1.00
24	42.95	-0.29	35.54	-0.36	36.24	0.04	38.47	-0.82	36.70	-0.37	40.59	-0.61	-0.40 0.53
25	43.06	-0.18	35.57	-0.33	35.91	-0.30	38.24	-1.04	36.41	-0.66	40.80	-0.40	-0.48 0.62
26	43.95	0.71	37.20	1.30	36.68	0.47	39.95	0.66	37.76	0.69	41.42	0.23	0.68 0.82
27	42.96	-0.27	35.22	-0.68	35.44	-0.76	41.65	2.36	40.49	3.42	43.37	2.17	1.04 2.15
29	39.53	-3.71	33.43	-2.47	34.32	-1.88	36.81	-2.48	35.00	-2.07	39.37	-1.82	-2.41 2.73
30	41.53	-1.71	34.75	-1.15	35.45	-0.75	37.64	-1.64	35.85	-1.22	39.61	-1.58	-1.34 1.52
34	41.48	-1.76	34.65	-1.25	34.04	-2.17	37.61	-1.68	35.13	-1.94	39.52	-1.68	-1.74 1.94
112	44.57	1.33	35.76	-0.14	35.98	-0.22	40.28	1.00	36.94	-0.13	41.15	-0.04	0.30 0.75
113	45.44	2.20	36.21	0.31	36.63	0.43	39.23	-0.05	38.07	1.00	42.72	1.53	0.90 1.30
125	43.06	-0.18	35.57	-0.33	35.91	-0.30	38.24	-1.04	36.41	-0.66	40.80	-0.40	-0.48 0.62
134	44.77	1.53	38.15	2.25	38.16	1.96	40.92	1.64	38.66	1.59	43.88	2.68	1.94 2.17
212	44.57	1.33	35.76	-0.14	35.98	-0.22	40.28	1.00	36.94	-0.13	41.15	-0.04	0.30 0.75

¹ Mittelwert der Analysen dieses Labores / *Mean of analyses of this lab*

² Differenz zum "wahren Wert" / *Differences to "true value"*

³ Mittelwert der Differenzen / *Mean of differences*

⁴ Standardabweichung der Differenzen / *Standard deviations of differences*

ADF

4.3.11 Merkmal / Constituent: ADF

Vergleichbarkeit / reproducibility Zur Berechnung der z-Werte wurde die Vergleichbarkeit der Methode, wie sie in der Norm VDLUFA ASR beschrieben ist, herangezogen.

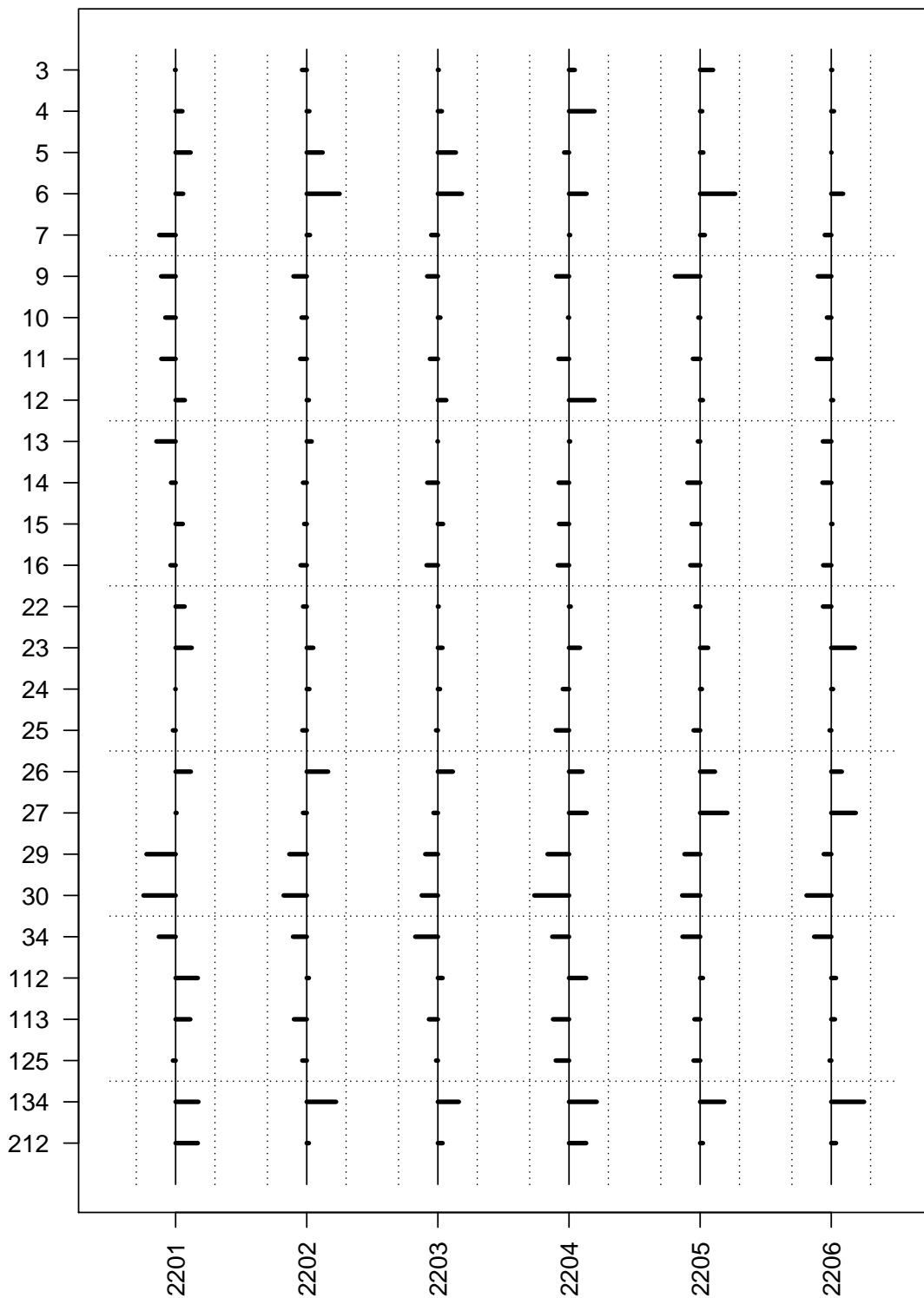
For calculation of the z scores the reproducibility of the method describe in VDLUFA ASR was used.

Vergleichsstandardabweichung / Reproducibility standard deviation s_R : 1.10 % TM

Quelle / Source: VDLUFA ASR

ADF

z-Werte / z Scores



Senkrecht finden sich die Labore, waagrecht jeweils die Proben.

Systematische Labordifferenz / lab bias

Probe/Sample Labor/Lab	2201		2202		2203		2204		2205		2206		Differenz m ³ SD ⁴
	m ¹	Δ ²	m ¹	Δ ²	m ¹	Δ ²	m ¹	Δ ²	m ¹	Δ ²	m ¹	Δ ²	
3	25.22	-0.03	19.51	-0.26	19.61	0.05	21.98	0.32	20.83	0.72	23.43	0.05	0.14 0.37
4	25.63	0.38	19.92	0.14	19.78	0.22	23.08	1.42	20.23	0.12	23.54	0.15	0.41 0.68
5	26.08	0.84	20.66	0.89	20.57	1.01	21.39	-0.27	20.29	0.18	23.39	0.01	0.44 0.72
6	25.67	0.42	21.61	1.84	20.90	1.34	22.64	0.98	22.07	1.96	24.04	0.66	1.20 1.45
7	24.33	-0.92	19.95	0.18	19.19	-0.37	21.72	0.06	20.38	0.26	23.02	-0.36	-0.19 0.49
9	24.44	-0.81	19.03	-0.74	18.96	-0.60	20.94	-0.71	18.70	-1.41	22.64	-0.75	-0.84 0.96
10	24.67	-0.57	19.49	-0.29	19.70	0.14	21.60	-0.05	20.01	-0.10	23.14	-0.24	-0.19 0.32
11	24.45	-0.80	19.41	-0.37	19.12	-0.44	21.07	-0.59	19.71	-0.40	22.58	-0.80	-0.57 0.65
12	25.76	0.51	19.89	0.12	20.03	0.47	23.08	1.42	20.26	0.15	23.48	0.10	0.46 0.71
13	24.17	-1.07	20.05	0.27	19.54	-0.02	21.72	0.06	19.99	-0.12	22.91	-0.47	-0.23 0.54
14	24.99	-0.25	19.56	-0.21	18.97	-0.59	21.08	-0.58	19.41	-0.71	22.89	-0.49	-0.47 0.55
15	25.64	0.40	19.63	-0.14	19.85	0.29	21.10	-0.55	19.64	-0.47	23.44	0.06	-0.07 0.40
16	24.96	-0.29	19.43	-0.34	18.93	-0.63	21.03	-0.62	19.56	-0.55	22.93	-0.45	-0.48 0.55
22	25.75	0.50	19.57	-0.21	19.60	0.04	21.75	0.09	19.85	-0.26	22.92	-0.46	-0.05 0.34
23	26.15	0.90	20.14	0.36	19.82	0.26	22.27	0.61	20.56	0.45	24.70	1.32	0.65 0.81
24	25.23	-0.01	19.92	0.14	19.68	0.12	21.31	-0.35	20.21	0.10	23.48	0.10	0.02 0.19
25	25.10	-0.15	19.53	-0.25	19.46	-0.10	20.92	-0.74	19.75	-0.36	23.29	-0.09	-0.28 0.40
26	26.10	0.85	20.96	1.19	20.40	0.84	22.41	0.75	20.94	0.83	23.97	0.59	0.84 0.94
27	25.30	0.05	19.56	-0.21	19.32	-0.24	22.64	0.98	21.63	1.52	24.75	1.37	0.58 1.03
29	23.62	-1.63	18.80	-0.97	18.86	-0.70	20.46	-1.20	19.24	-0.87	22.96	-0.42	-0.96 1.14
30	23.45	-1.80	18.48	-1.29	18.66	-0.90	19.72	-1.94	19.11	-1.00	22.00	-1.38	-1.39 1.57
34	24.31	-0.94	19.00	-0.77	18.30	-1.26	20.72	-0.93	19.13	-0.99	22.43	-0.95	-0.97 1.08
112	26.48	1.24	19.89	0.12	19.82	0.26	22.61	0.96	20.27	0.16	23.65	0.27	0.50 0.72
113	26.07	0.82	19.06	-0.71	19.06	-0.50	20.76	-0.89	19.80	-0.32	23.59	0.21	-0.23 0.69
125	25.10	-0.15	19.53	-0.25	19.46	-0.10	20.92	-0.74	19.75	-0.36	23.29	-0.09	-0.28 0.40
134	26.52	1.27	21.41	1.64	20.73	1.17	23.20	1.55	21.46	1.35	25.21	1.83	1.47 1.63
212	26.48	1.24	19.89	0.12	19.82	0.26	22.61	0.96	20.27	0.16	23.65	0.27	0.50 0.72

¹ Mittelwert der Analysen dieses Labores / *Mean of analyses of this lab*

² Differenz zum "wahren Wert" / *Differences to "true value"*

³ Mittelwert der Differenzen / *Mean of differences*

⁴ Standardabweichung der Differenzen / *Standard deviations of differences*



Elos / Cellulase

4.3.12 Merkmal / Constituent: Elos / Cellulase

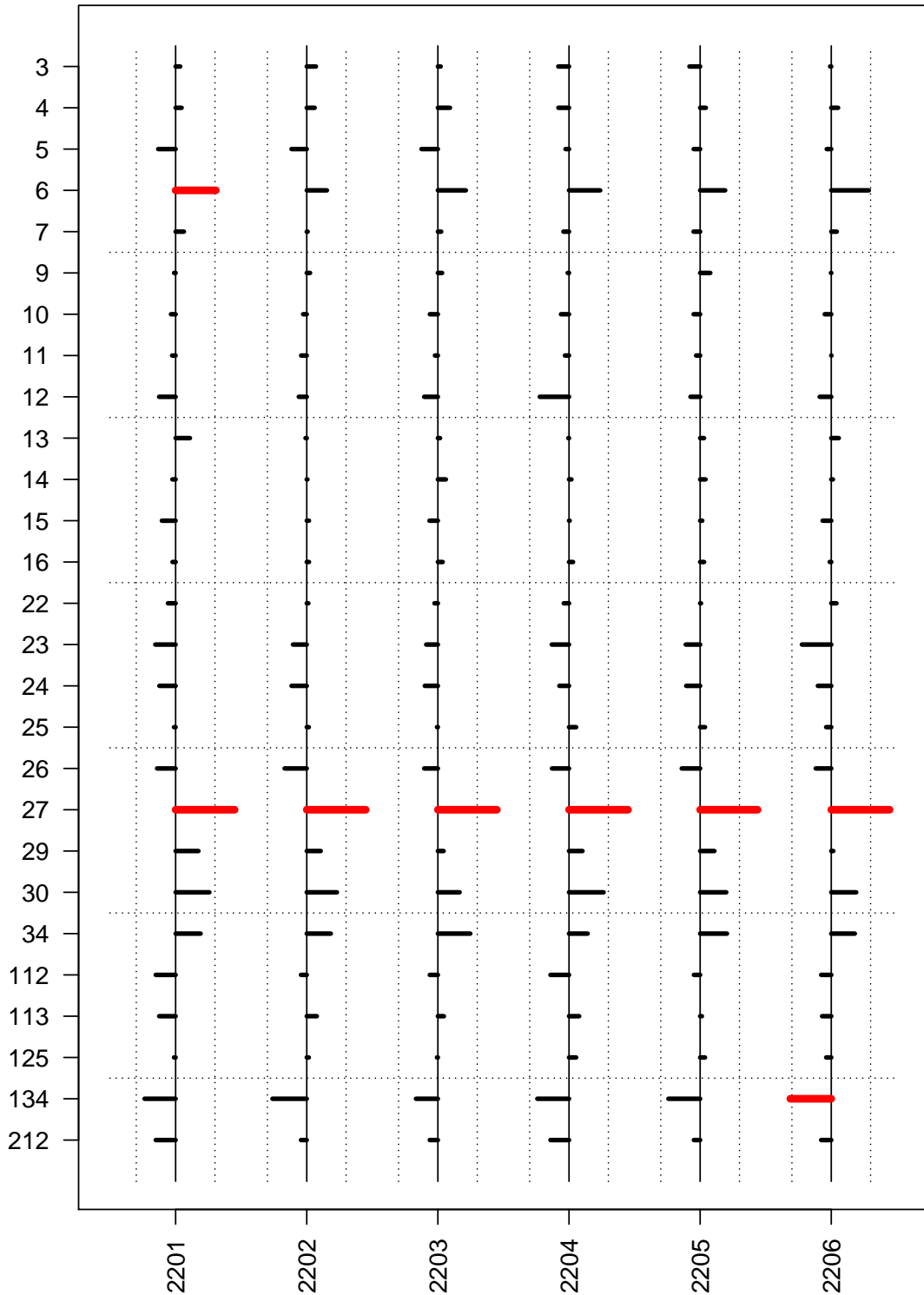
Vergleichbarkeit / reproducibility Zur Berechnung der z-Werte wurde die Vergleichbarkeit der Methode, wie sie in der Norm VDLUFA ASR beschrieben ist, herangezogen.

For calculation of the z scores the reproducibility of the method describe in VDLUFA ASR was used.

Vergleichsstandardabweichung / Reproducibility standard deviation s_R : 1.75 % TM

Quelle / Source: VDLUFA ASR

z-Werte / z Scores



Senkrecht finden sich die Labore, waagrecht jeweils die Proben.

Elos / Cellulase

Die Balken für die verschiedenen Proben liegen auf einer Ebene nebeneinander. Rote Balken markieren Labore, deren Labormittelwert für diese Probe einen z-Wert kleiner -2 oder größer 2 aufweist.

Die senkrechten, gestrichelten Linien markieren einen z-Wert von -2.0 bzw. 2.0. Die waagerechten, gestrichelten Linien sind Hilfslinien zur waagerechten Orientierung. Die numerische Darstellung der z-Werte findet sich im Anhang.

Laboratories are listed vertically, samples horizontally. The bars for all samples from one lab are listed horizontally. Red bars are used to mark labs, which lab mean for this samples have a z score smaller than -2 or larger than 2.

The vertical dashed lines mark a z score of -2.0 and 2.0. The horizontal dashed lines are reading aids. The numerical z scores are listed in the appendix.

Elos / Cellulase

Systematische Labordifferenz / lab bias

Probe/Sample Labor/Lab	2201		2202		2203		2204		2205		2206		Differenz m ³ SD ⁴
	m ¹	Δ ²	m ¹	Δ ²	m ¹	Δ ²	m ¹	Δ ²	m ¹	Δ ²	m ¹	Δ ²	
3	68.20	0.41	74.87	0.82	74.69	0.25	70.91	-0.95	73.37	-0.95	69.83	-0.10	-0.09 0.74
4	68.32	0.53	74.76	0.70	75.52	1.07	70.92	-0.94	74.82	0.51	70.53	0.61	0.41 0.83
5	66.24	-1.55	72.70	-1.35	72.99	-1.46	71.55	-0.31	73.74	-0.58	69.52	-0.40	-0.94 1.18
6	71.37	3.58	75.85	1.79	76.94	2.49	74.64	2.78	76.55	2.23	73.27	3.34	2.70 3.04
7	68.53	0.74	74.13	0.08	74.74	0.30	71.37	-0.50	73.73	-0.58	70.41	0.49	0.09 0.54
9	67.65	-0.14	74.35	0.30	74.82	0.38	71.75	-0.11	75.22	0.90	69.90	-0.03	0.22 0.46
10	67.38	-0.41	73.73	-0.32	73.73	-0.72	71.15	-0.71	73.74	-0.58	69.34	-0.58	-0.56 0.63
11	67.48	-0.31	73.55	-0.50	74.19	-0.26	71.50	-0.36	73.96	-0.36	69.94	0.02	-0.30 0.37
12	66.32	-1.47	73.34	-0.71	73.23	-1.22	69.26	-2.60	73.46	-0.86	68.90	-1.03	-1.31 1.59
13	69.06	1.27	73.94	-0.11	74.64	0.19	71.80	-0.06	74.66	0.34	70.59	0.67	0.38 0.67
14	67.50	-0.29	74.11	0.06	75.16	0.71	72.08	0.22	74.80	0.48	70.07	0.15	0.22 0.42
15	66.56	-1.23	74.25	0.20	73.70	-0.74	71.92	0.06	74.51	0.19	69.16	-0.77	-0.38 0.74
16	67.51	-0.27	74.25	0.20	74.87	0.43	72.22	0.36	74.67	0.35	69.79	-0.14	0.15 0.34
22	67.11	-0.68	74.20	0.14	74.14	-0.30	71.40	-0.47	74.32	0.00	70.39	0.47	-0.14 0.45
23	65.98	-1.81	72.83	-1.23	73.41	-1.04	70.33	-1.54	73.04	-1.28	67.31	-2.61	-1.58 1.83
24	66.34	-1.44	72.70	-1.35	73.28	-1.16	71.00	-0.86	73.08	-1.24	68.73	-1.19	-1.21 1.34
25	67.64	-0.14	74.24	0.18	74.37	-0.08	72.50	0.63	74.75	0.43	69.47	-0.45	0.10 0.41
26	66.14	-1.65	72.08	-1.97	73.22	-1.22	70.35	-1.52	72.68	-1.64	68.54	-1.39	-1.56 1.73
27	73.31	5.52	82.44	8.39	81.39	6.94	77.41	5.55	79.43	5.11	75.12	5.19	6.12 6.82
29	69.82	2.03	75.29	1.24	74.96	0.51	73.06	1.20	75.59	1.27	70.11	0.18	1.07 1.34
30	70.79	3.00	76.74	2.69	76.38	1.93	74.94	3.08	76.64	2.32	72.14	2.22	2.54 2.82
34	70.01	2.22	76.19	2.14	77.33	2.88	73.52	1.66	76.70	2.39	72.02	2.10	2.23 2.48
112	66.02	-1.77	73.54	-0.51	73.73	-0.72	70.21	-1.65	73.76	-0.56	69.03	-0.90	-1.02 1.24
113	66.32	-1.46	74.95	0.90	74.98	0.53	72.77	0.90	74.47	0.15	69.11	-0.82	0.03 0.97
125	67.64	-0.14	74.24	0.18	74.37	-0.08	72.50	0.63	74.75	0.43	69.47	-0.45	0.10 0.41
134	65.03	-2.76	71.00	-3.05	72.49	-1.95	69.05	-2.82	71.49	-2.82	66.28	-3.65	-2.84 3.16
212	66.02	-1.77	73.54	-0.51	73.73	-0.72	70.21	-1.65	73.76	-0.56	69.03	-0.90	-1.02 1.24

¹ Mittelwert der Analysen dieses Labores / Mean of analyses of this lab

² Differenz zum "wahren Wert" / Differences to "true value"

³ Mittelwert der Differenzen / Mean of differences

⁴ Standardabweichung der Differenzen / Standard deviations of differences

Trockenmasse / dry matter

5 Ringversuchsauswertung nach ISO 5725 / Ringtest evaluation according to ISO 5725

5.1 Merkmal / Constituent: Trockenmasse / dry matter

Einheit / Unit: %

5.1.1 Anmerkungen / Annotations

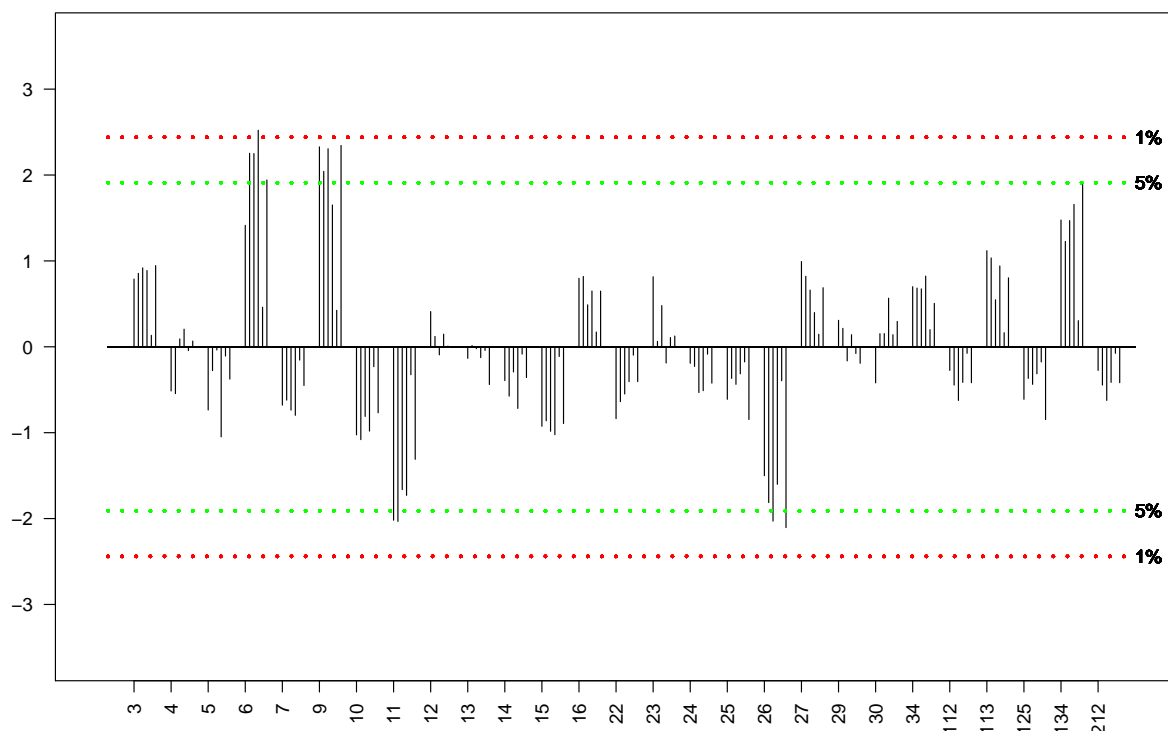
5.1.2 Methodenbeschreibung / Method Description

Probe/Sample	2201	2202	2203	2204	2205	2206
n	108	108	109	108	108	108
p	27	27	27	27	27	27
n ₁	108	108	109	108	108	108
p ₁	27	27	27	27	27	27
m	91.10	91.03	91.12	91.63	90.99	90.83
s _r	0.18	0.15	0.16	0.16	0.16	0.15
CV _r	0.20	0.16	0.18	0.17	0.17	0.16
r	0.52	0.42	0.46	0.45	0.45	0.42
s _R	0.80	0.78	0.84	0.77	0.79	0.90
CV _R	0.88	0.85	0.92	0.84	0.87	1.00
R	2.26	2.20	2.38	2.17	2.24	2.56
HORRAT ¹						

¹ siehe Anmerkung zu HORRAT im Vorspann, S. 8
remark to HORRAT in preamble, page 8

Trockenmasse / dry matter

Labormittelwertvergleich nach Mandels h / Lab mean comparison to Mandel's h



Oberste und unterste Linie 1%-Signifikanz-Niveau, mittlere Linien 5%-Signifikanz-Niveau.

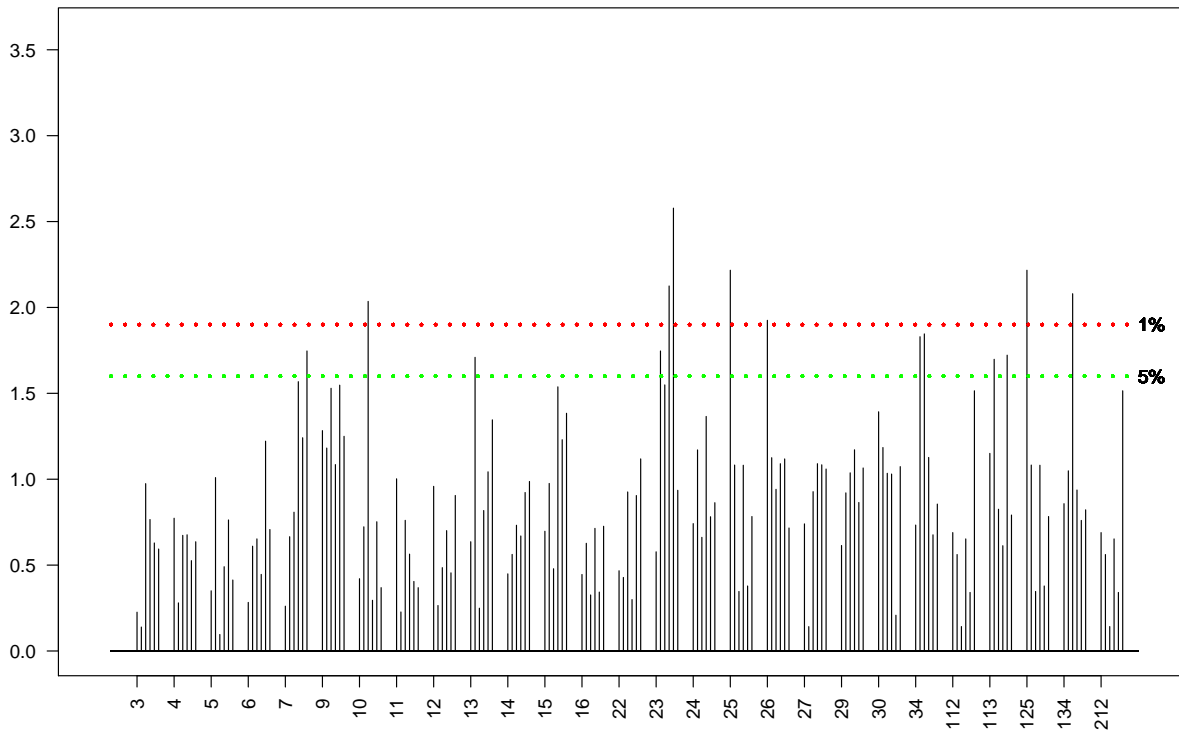
Waagrecht finden sich die Labore mit jeweils einem Balken für jede Probe. Balken nach unten sind negative Abweichungen des Messwertes dieser Proben, Balken nach oben positive Abweichungen. Die Länge der Balken ist normiert, so dass Proben mit unterschiedlichen Gehalten verglichen werden können.

Upper and lower lines 1% significance level, intermediate lines 5% significance level.

The labs are ordered horizontally with a bar for each sample. Bars oriented downwards represent negative deviations for a sample, bar oriented upwards positive deviations. The bar lengths are normed, to allow to compare samples with different concentrations.

Trockenmasse / dry matter

Vergleich der laborinternen Streuung nach Mandels k / Lab internal repeatability comparison Mandel's k



Obere Linie 1%-Signifikanz-Niveau, untere Linie 5%-Signifikanz-Niveau.

Waagrecht finden sich die Labore mit jeweils einem Balken für jede Probe. Die Balken für die einzelnen Proben beginnen immer bei der Markierung der ganzen Zahl, d.h. z.B. für Labor 5 bei 5.0.

Die Balkenlänge ist die normierte laborinterne Streuung für die Wiederholungen dieser Probe. Lange Balken kennzeichnen eine große laborinterne Streuung.

Upper line 1% significance level, lower line 5% significance level.

The labs are ordered horizontally with a bar for each sample. The bar for the first sample from one lab always starts at the whole number, i.e. for lab 5 at 5.0.

Bar lengths represent the lab internal repeatability. Long bars mark large deviations between repeats inside that laboratory.

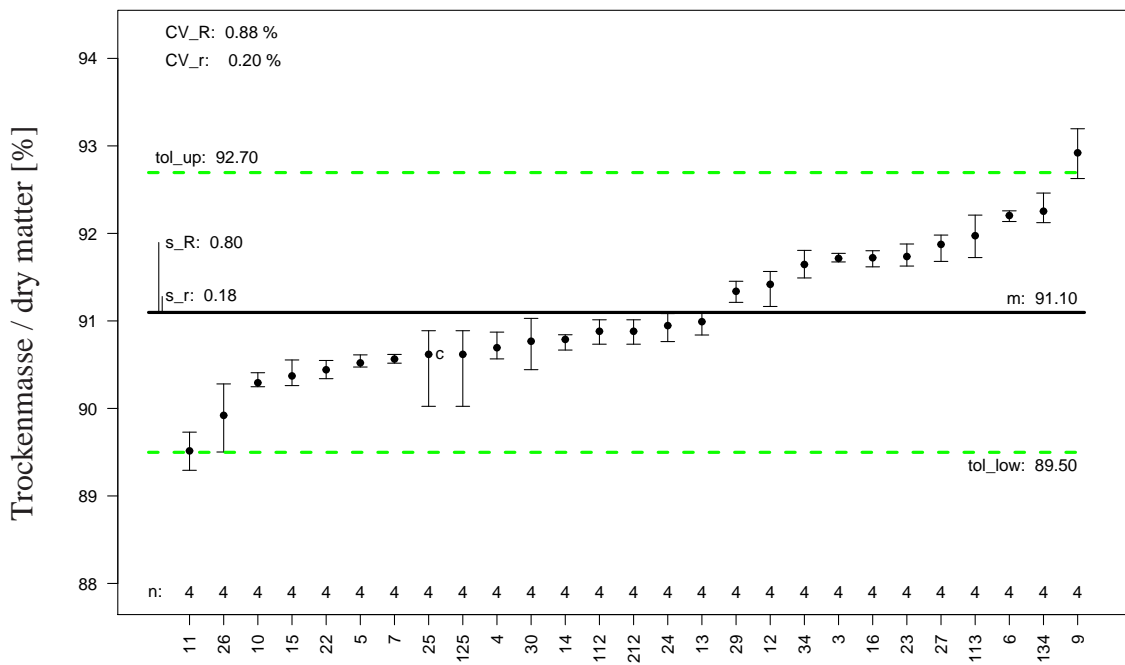
Einzelproben / Single Samples Die durchgezogene, schwarze, waagrechte Linie kennzeichnen den Mittelwert der Analysen für die Proben in diesem Ringversuch. Falls vorhanden, markieren die schwarzen, gestrichelten Linien den "wahren Wert" für die

Trockenmasse / dry matter

Proben. Die grünen, gestrichelten Linien markieren die Toleranzgrenzen ($2 \cdot s_R$) für die Analysen zu der Probe, die falls vorhanden mit der Vergleichsstandardabweichung der Methode nach Norm, sonst mit der Vergleichsstandardabweichung aus diesem Ringversuch berechnet wurden.

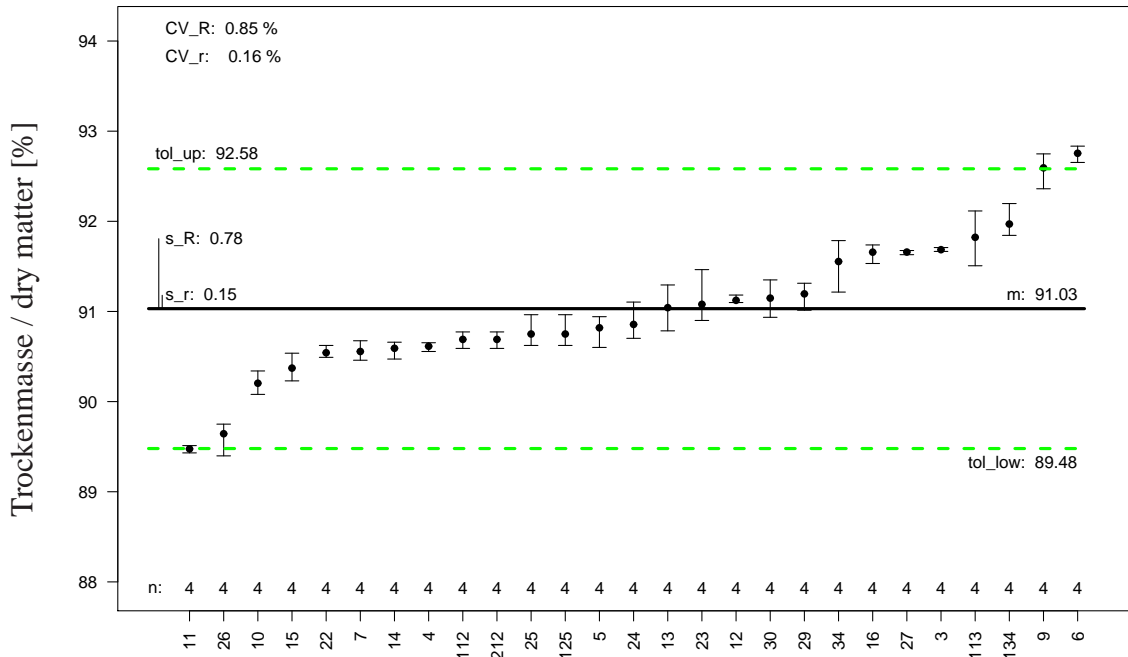
The solid, black, horizontal lines are the mean of analyses from this proficiency test for a sample. If present the black, dashed lines mark the "true value" of the samples. The green, dashed lines mark the tolerance limits for the analyses for the sample calculated either with the reproducibility from the method description, if given, else with the reproducibility from this proficiency trial ($2 \cdot s_R$).

Probe/Sample 2201:

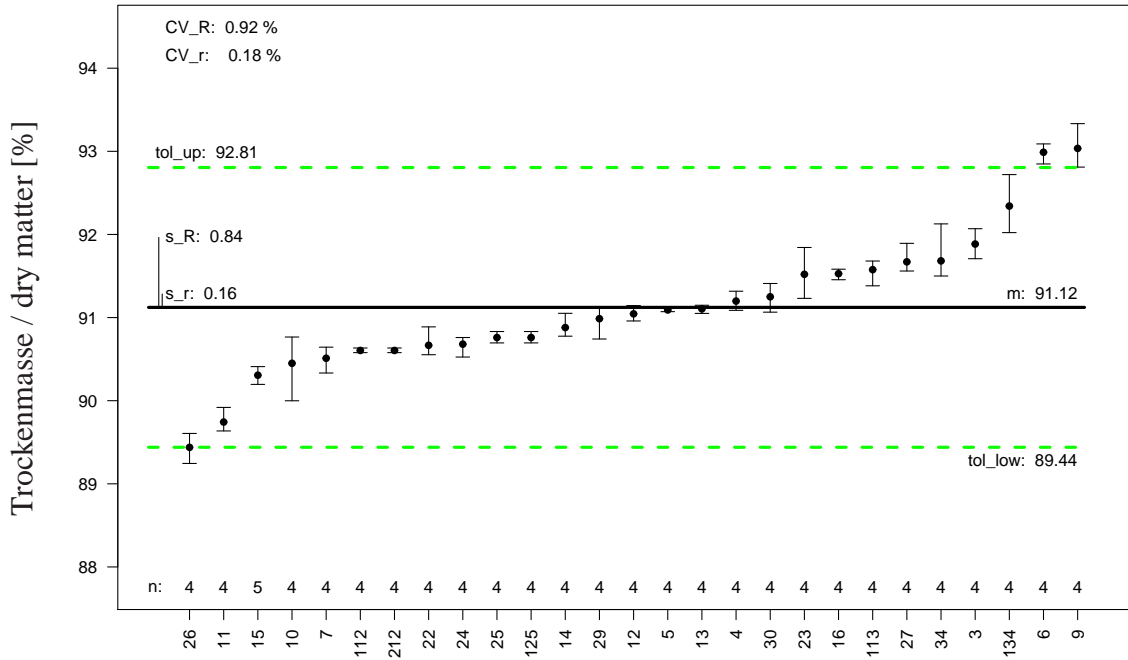


Trochkenmasse / dry matter

Probe/Sample 2202:

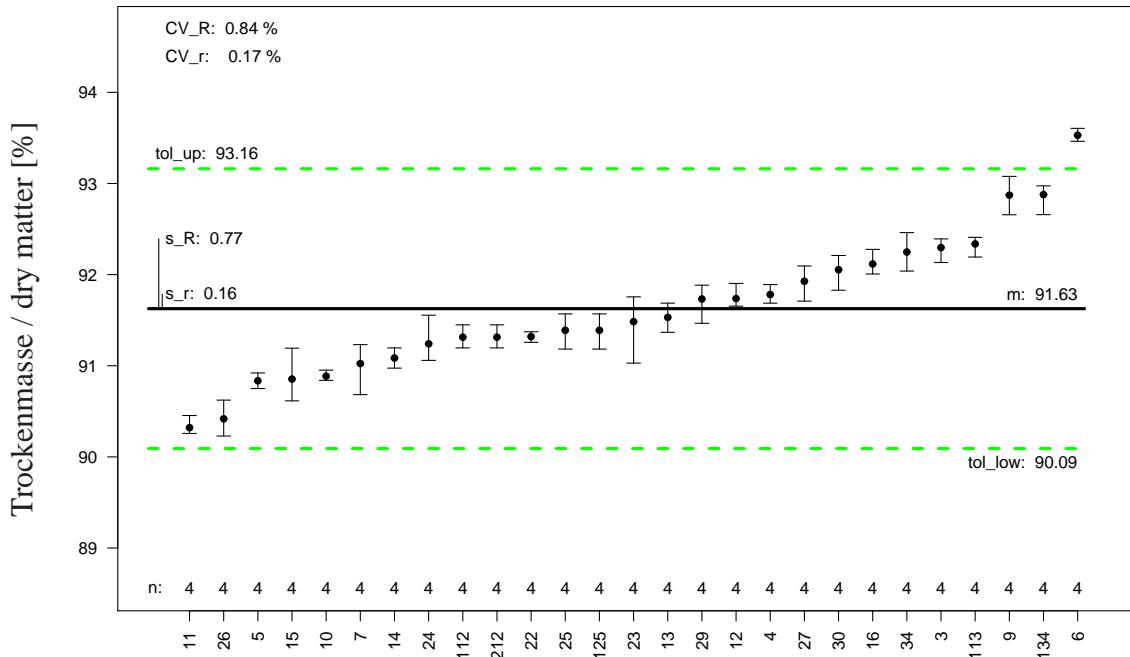


Probe/Sample 2203:

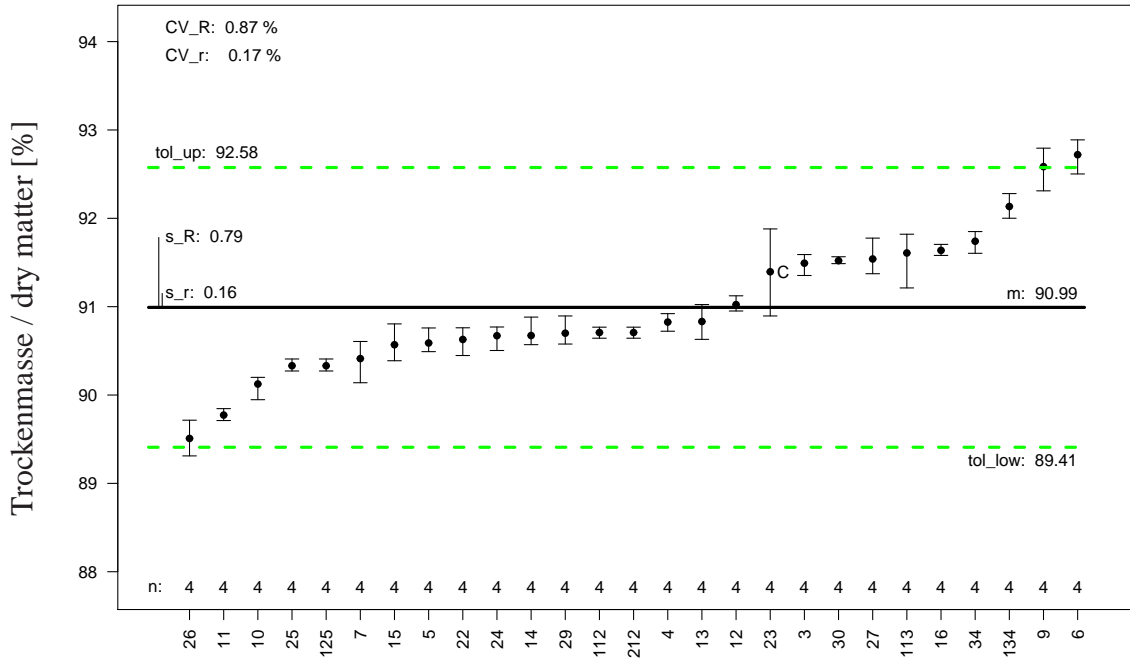


Trockenmasse / dry matter

Probe/Sample 2204:

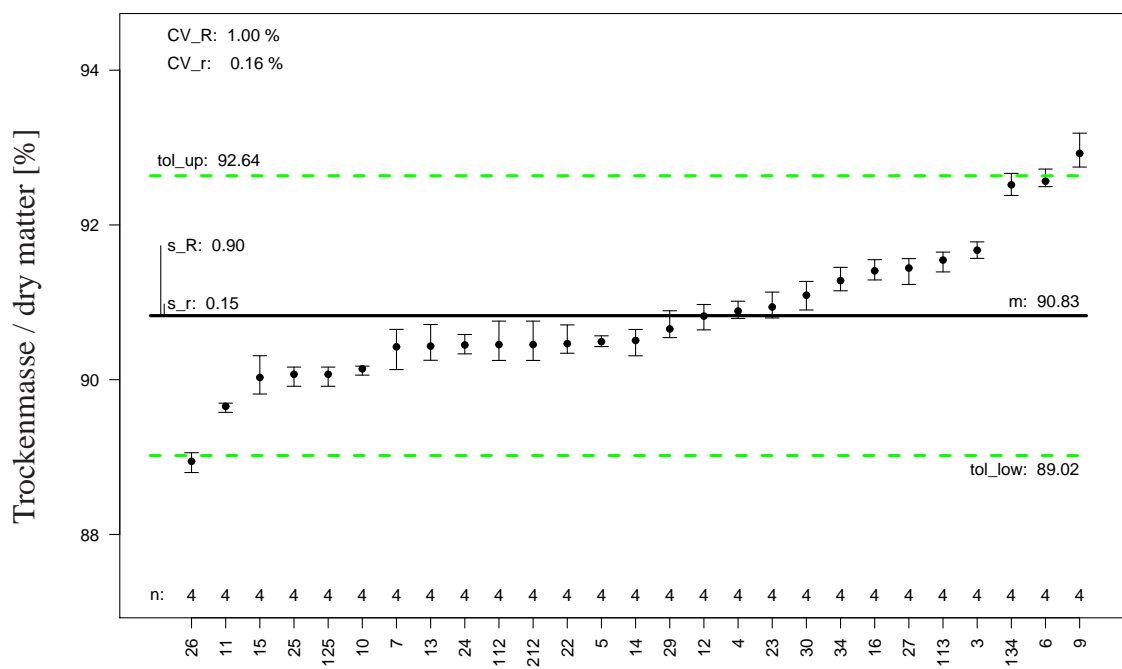


Probe/Sample 2205:



Trockenmasse / dry matter

Probe/Sample 2206:



Rohprotein / XP

5.2 Merkmal / Constituent: Rohprotein / XP

Einheit / Unit: % TM

5.2.1 Anmerkungen / Annotations

Rohprotein / XP

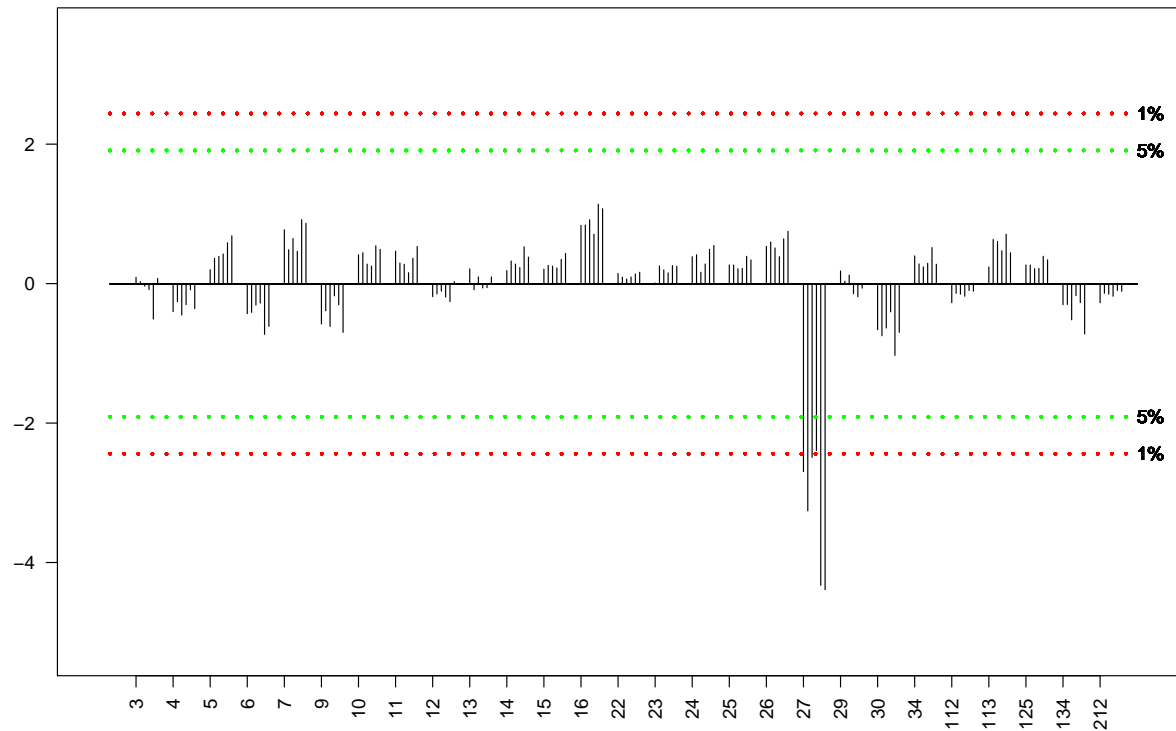
5.2.2 Methodenbeschreibung / Method Description

Probe/Sample	2201	2202	2203	2204	2205	2206	VDLUFA ASR
n	108	108	109	108	108	108	
p	27	27	27	27	27	27	
n ₁	104	104	105	104	104	104	
p ₁	26	26	26	26	26	26	
m	5.79	6.61	6.73	6.63	6.01	6.09	
s _r	0.12	0.11	0.09	0.12	0.10	0.11	
CV _r	2.01	1.60	1.37	1.84	1.69	1.76	
r	0.33	0.30	0.26	0.34	0.29	0.30	
s _R	0.31	0.30	0.33	0.31	0.32	0.29	0.38
CV _R	5.37	4.60	4.94	4.72	5.29	4.81	
R	0.88	0.86	0.94	0.88	0.90	0.83	1.06
HORRAT ¹	1.75	1.53	1.65	1.57	1.73	1.58	

¹ siehe Anmerkung zu HORRAT im Vorspann, S. 8
remark to HORRAT in preamble, page 8

Rohprotein / XP

Labormittelwertvergleich nach Mandels h / Lab mean comparison to Mandel's h



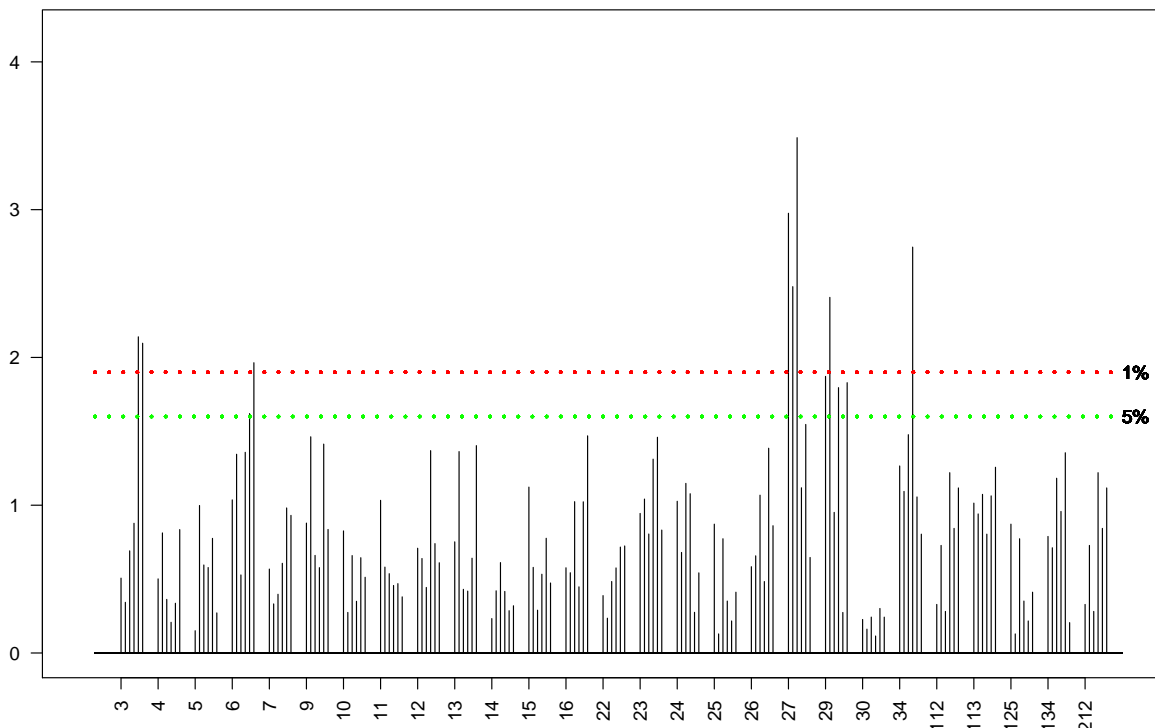
Oberste und unterste Linie 1%-Signifikanz-Niveau, mittlere Linien 5%-Signifikanz-Niveau.

Waagrecht finden sich die Labore mit jeweils einem Balken für jede Probe. Balken nach unten sind negative Abweichungen des Messwertes dieser Proben, Balken nach oben positive Abweichungen. Die Länge der Balken ist normiert, so dass Proben mit unterschiedlichen Gehalten verglichen werden können.

Upper and lower lines 1% significance level, intermediate lines 5% significance level.

The labs are ordered horizontally with a bar for each sample. Bars oriented downwards represent negative deviations for a sample, bar oriented upwards positive deviations. The bar lengths are normed, to allow to compare samples with different concentrations.

**Vergleich der laborinternen Streuung nach Mandel's k / Lab
internal repeatability comparison Mandel's k**



Obere Linie 1%-Signifikanz-Niveau, untere Linie 5%-Signifikanz-Niveau.

Waagrecht finden sich die Labore mit jeweils einem Balken für jede Probe. Die Balken für die einzelnen Proben beginnen immer bei der Markierung der ganzen Zahl, d.h. z.B. für Labor 5 bei 5.0.

Die Balkenlänge ist die normierte laborinterne Streuung für die Wiederholungen dieser Probe. Lange Balken kennzeichnen eine große laborinterne Streuung.

Upper line 1% significance level, lower line 5% significance level.

The labs are ordered horizontally with a bar for each sample. The bar for the first sample from one lab always start at the whole number, i.e. for lab 5 at 5.0.

Bar lengths represent the lab internal repeatability. Long bars mark large deviations between repeats inside that laboratory.

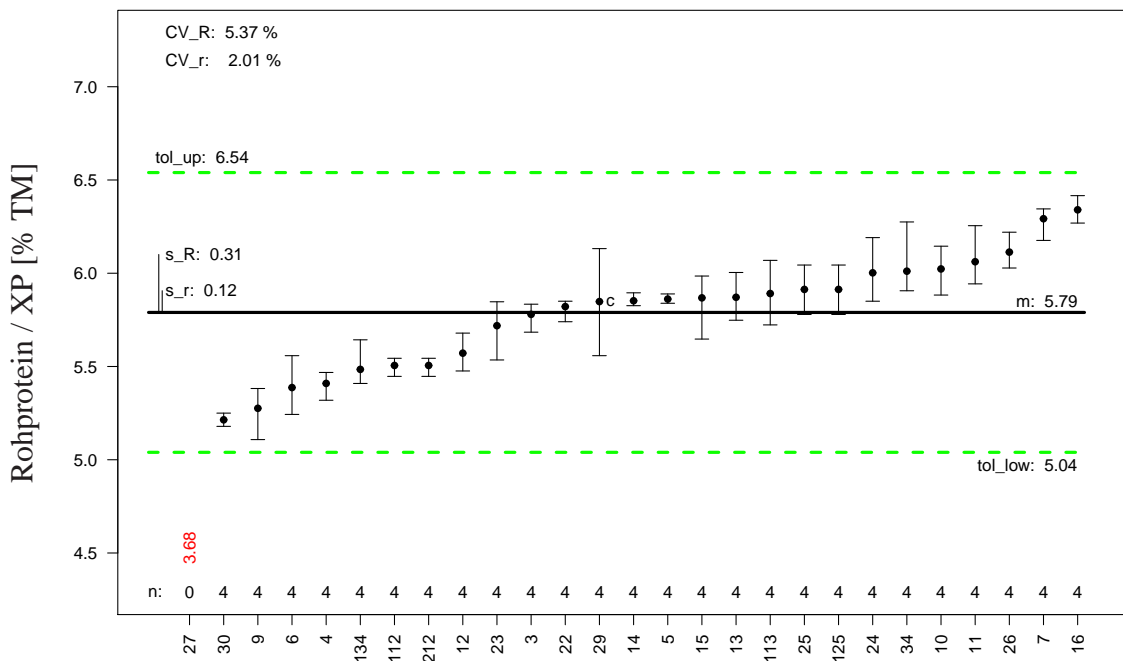
Einzelproben / Single Samples Die durchgezogene, schwarze, waagerechte Linien kennzeichnen den Mittelwert der Analysen für die Proben in diesem Ringversuch. Falls vorhanden, markieren die schwarzen, gestrichelten Linien den "wahren Wert" für die

Rohprotein / XP

Proben. Die grünen, gestrichelten Linien markieren die Toleranzgrenzen ($2 * s_R$) für die Analysen zu der Probe, die falls vorhanden mit der Vergleichsstandardabweichung der Methode nach Norm, sonst mit der Vergleichsstandardabweichung aus diesem Ringversuch berechnet wurden.

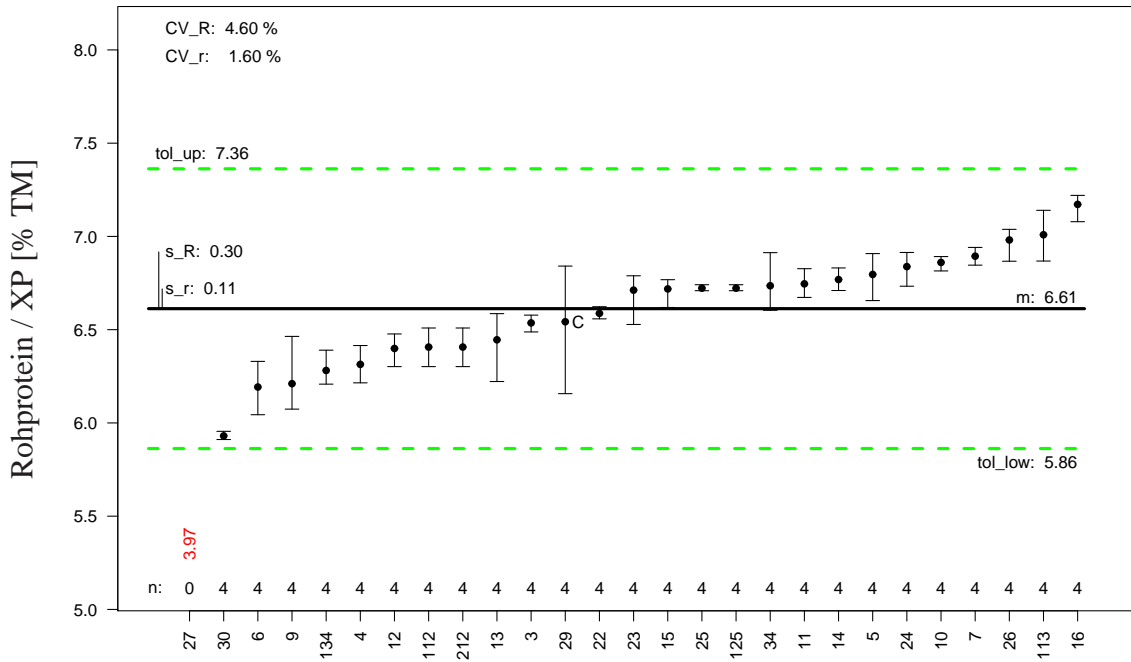
*The solid, black, horizontal lines are the mean of analyses from this proficiency test for a sample. If present the black, dashed lines mark the "true value" of the samples. The green, dashed lines mark the tolerance limits for the analyses for the sample calculated either with the reproducibility from the method description, if given, else with the reproducibility from this proficiency trial ($2 * s_R$).*

Probe/Sample 2201:

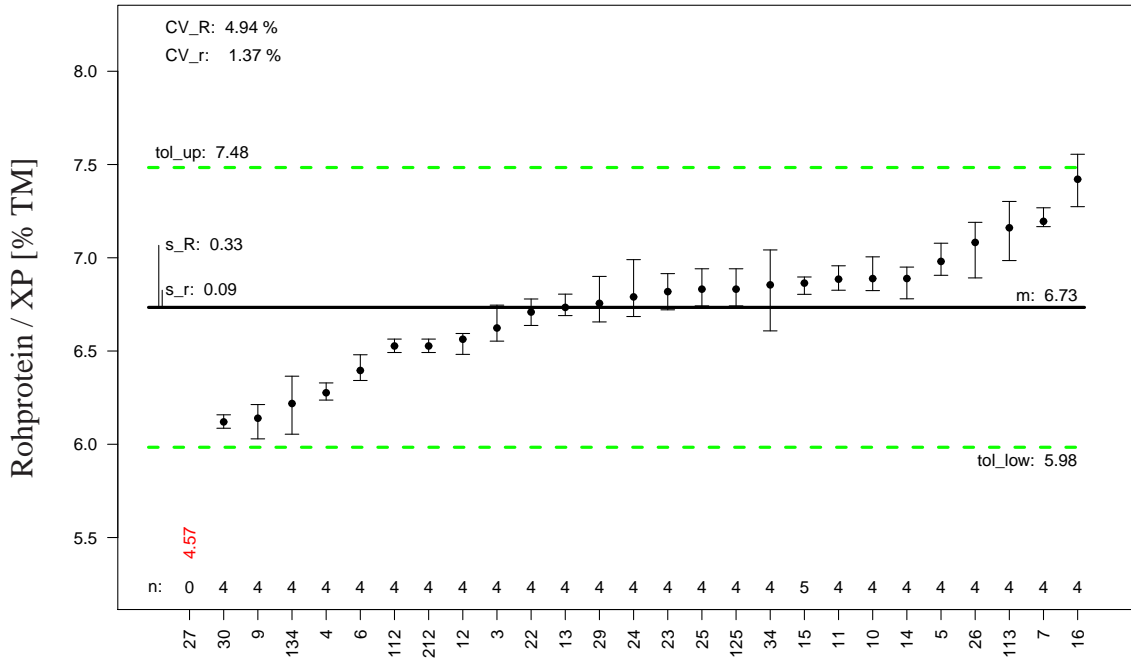


Rohprotein / XP

Probe/Sample 2202:

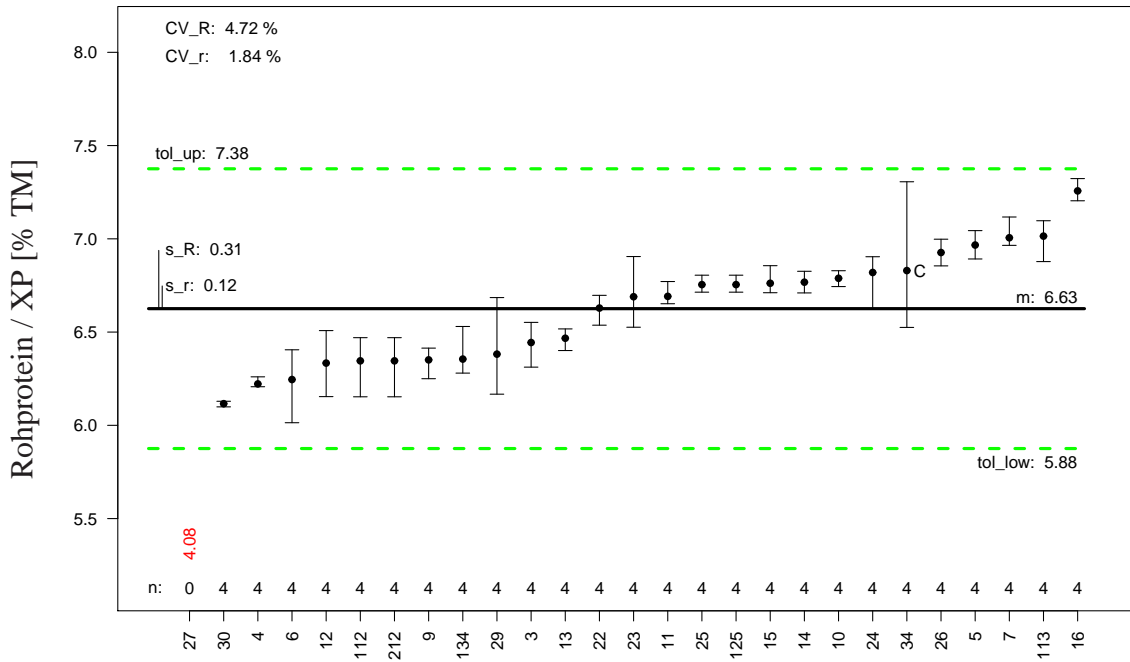


Probe/Sample 2203:

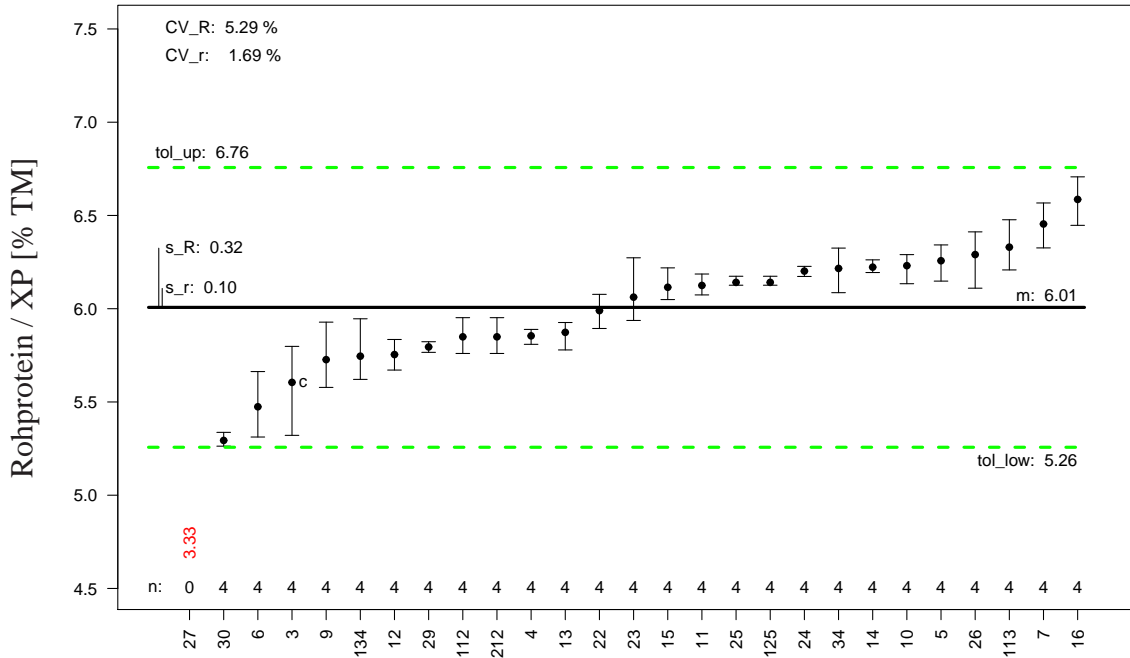


Rohprotein / XP

Probe/Sample 2204:

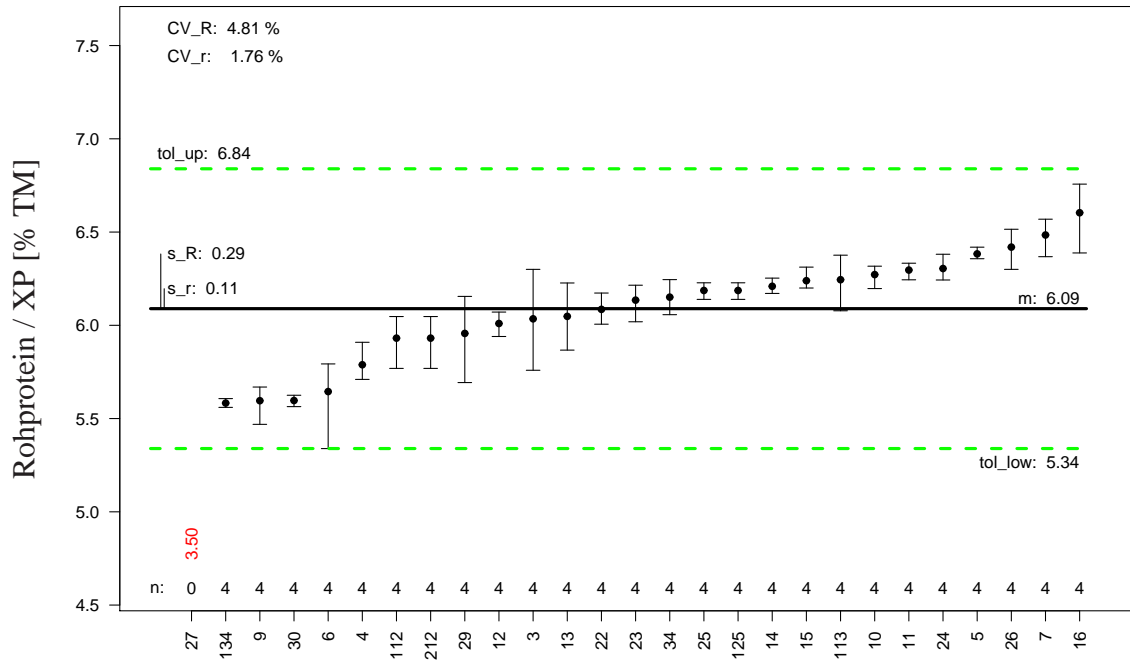


Probe/Sample 2205:



Rohprotein / XP

Probe/Sample 2206:



Rohfaser / XF

5.3 Merkmal / Constituent: Rohfaser / XF

Einheit / Unit: % TM

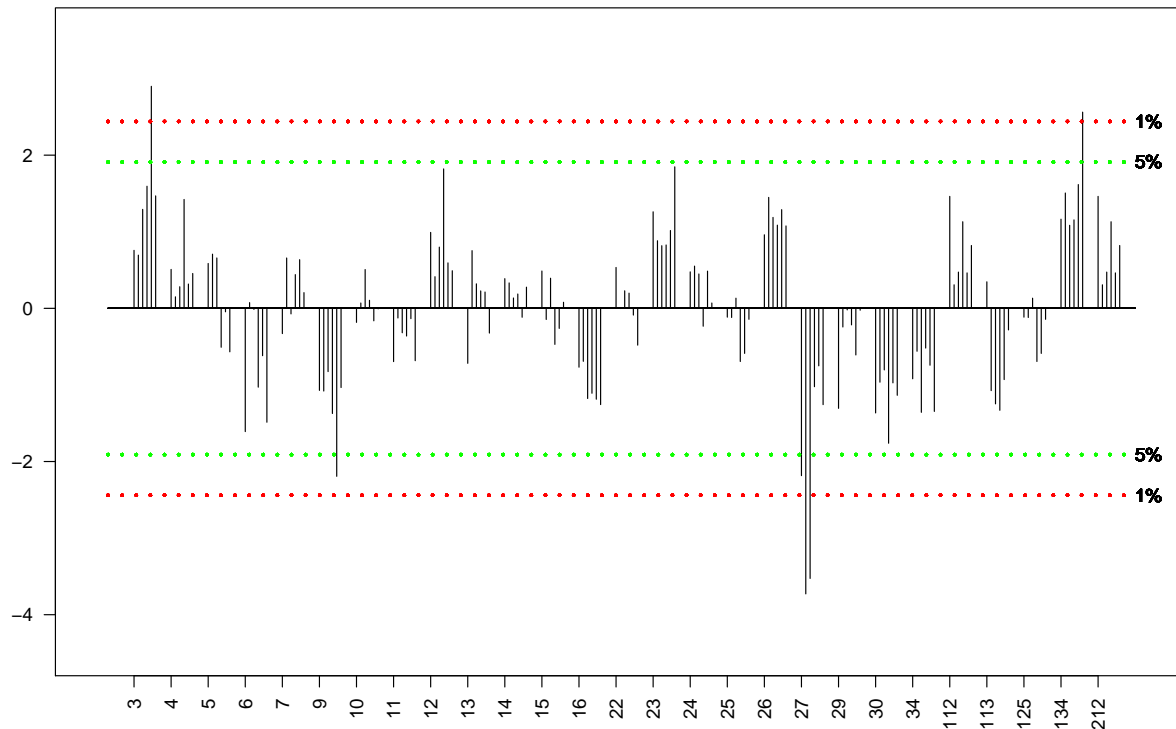
5.3.1 Anmerkungen / Annotations

5.3.2 Methodenbeschreibung / Method Description

Probe/Sample	2201	2202	2203	2204	2205	2206	VDLUFA ASR
n	108	108	109	108	108	108	
p	27	27	27	27	27	27	
n ₁	108	104	105	108	108	108	
p ₁	27	26	26	27	27	27	
m	20.04	15.56	15.82	17.20	16.14	18.66	
s _r	0.46	0.45	0.35	0.43	0.39	0.42	
CV _r	2.30	2.87	2.19	2.51	2.43	2.23	
r	1.31	1.26	0.98	1.22	1.11	1.18	
s _R	0.97	0.68	0.57	0.92	0.72	0.75	1.00
CV _R	4.83	4.40	3.63	5.37	4.43	4.00	
R	2.74	1.94	1.62	2.61	2.02	2.11	2.83
HORRAT ¹	1.90	1.66	1.38	2.06	1.68	1.55	

¹ siehe Anmerkung zu HORRAT im Vorspann, S. 8
remark to HORRAT in preamble, page 8

Labormittelwertvergleich nach Mandel's h / Lab mean comparison to Mandel's h



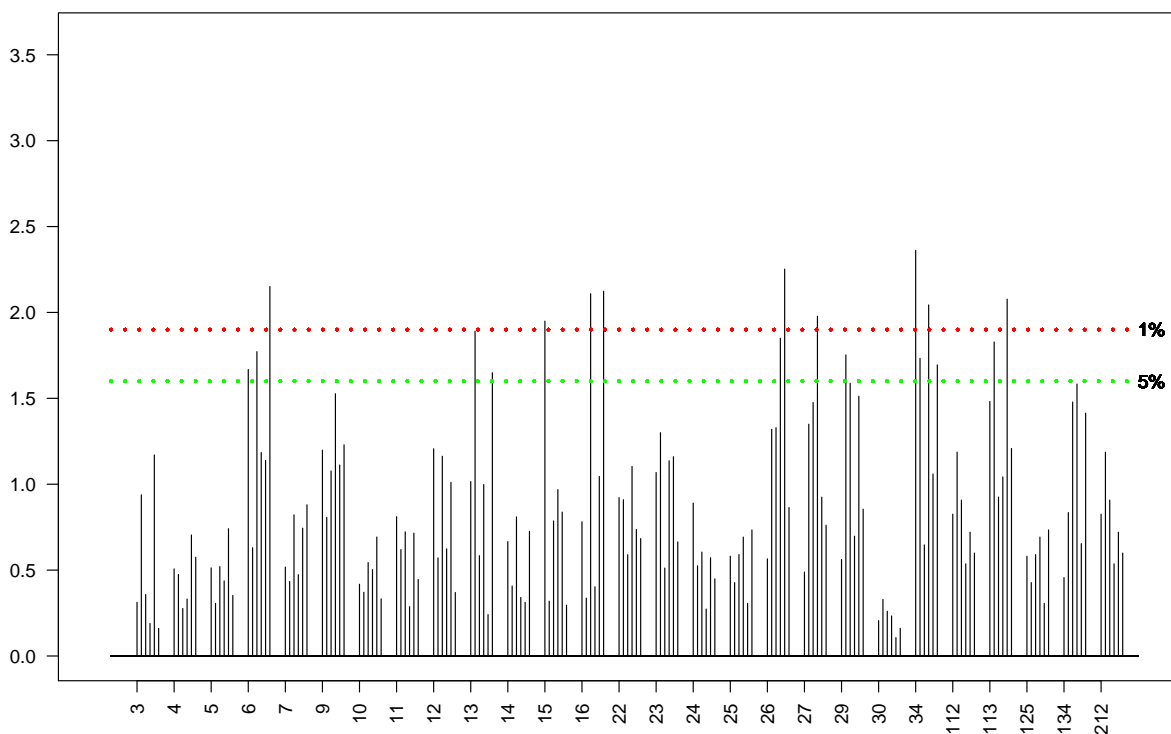
Oberste und unterste Linie 1%-Signifikanz-Niveau, mittlere Linien 5%-Signifikanz-Niveau.

Waagrecht finden sich die Labore mit jeweils einem Balken für jede Probe. Balken nach unten sind negative Abweichungen des Messwertes dieser Proben, Balken nach oben positive Abweichungen. Die Länge der Balken ist normiert, so dass Proben mit unterschiedlichen Gehalten verglichen werden können.

Upper and lower lines 1% significance level, intermediate lines 5% significance level.

The labs are ordered horizontally with a bar for each sample. Bars oriented downwards represent negative deviations for a sample, bar oriented upwards positive deviations. The bar lengths are normed, to allow to compare samples with different concentrations.

**Vergleich der laborinternen Streuung nach Mandels k / Lab
internal repeatability comparison Mandel's k**



Obere Linie 1%-Signifikanz-Niveau, untere Linie 5%-Signifikanz-Niveau.

Waagrecht finden sich die Labore mit jeweils einem Balken für jede Probe. Die Balken für die einzelnen Proben beginnen immer bei der Markierung der ganzen Zahl, d.h. z.B. für Labor 5 bei 5.0.

Die Balkenlänge ist die normierte laborinterne Streuung für die Wiederholungen dieser Probe. Lange Balken kennzeichnen eine große laborinterne Streuung.

Upper line 1% significance level, lower line 5% significance level.

The labs are ordered horizontally with a bar for each sample. The bar for the first sample from one lab always start at the whole number, i.e. for lab 5 at 5.0.

Bar lengths represent the lab internal repeatability. Long bars mark large deviations between repeats inside that laboratory.

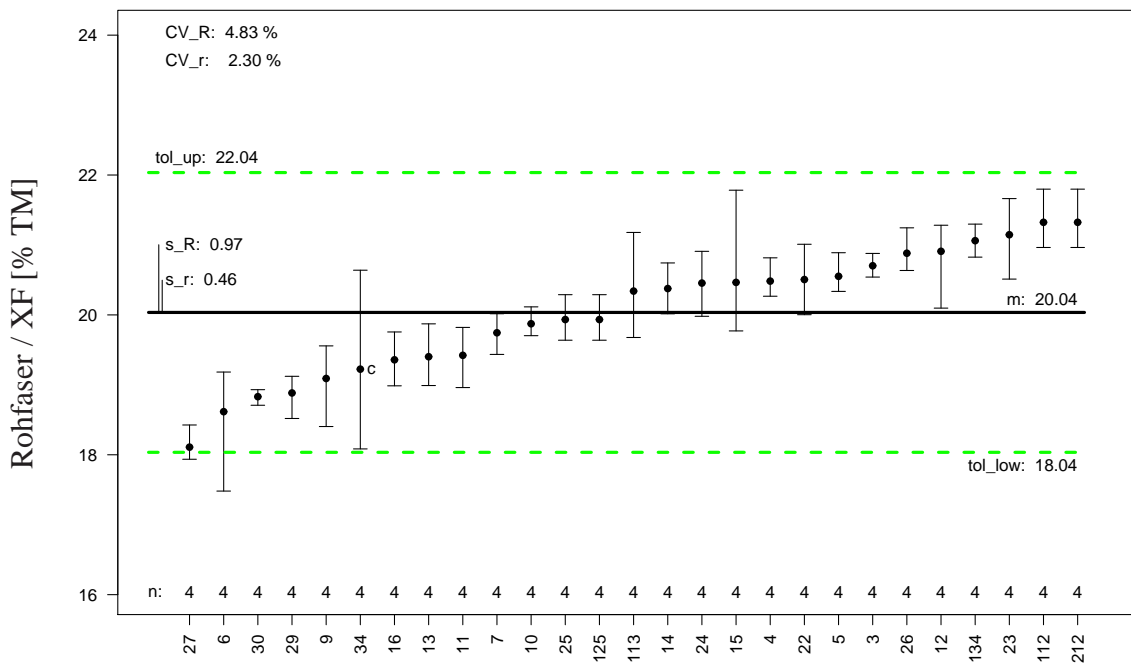
Einzelproben / Single Samples Die durchgezogene, schwarze, waagrechte Linien kennzeichnen den Mittelwert der Analysen für die Proben in diesem Ringversuch. Falls vorhanden, markieren die schwarzen, gestrichelten Linien den "wahren Wert" für die

Rohfaser / XF

Proben. Die grünen, gestrichelten Linien markieren die Toleranzgrenzen ($2 * s_R$) für die Analysen zu der Probe, die falls vorhanden mit der Vergleichsstandardabweichung der Methode nach Norm, sonst mit der Vergleichsstandardabweichung aus diesem Ringversuch berechnet wurden.

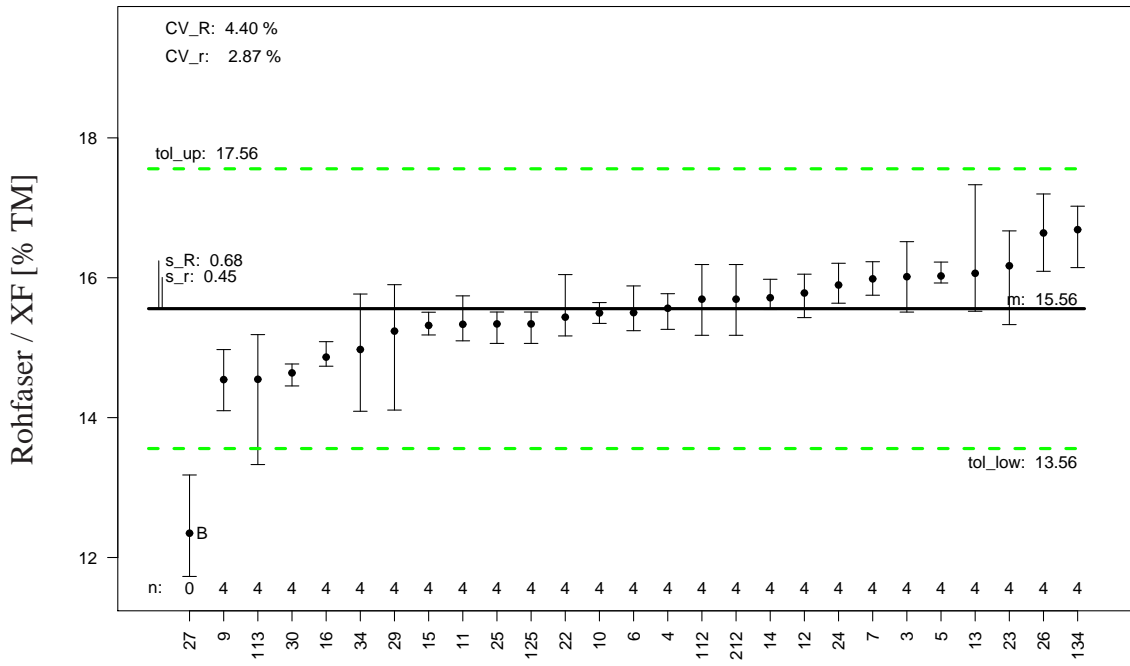
The solid, black, horizontal lines are the mean of analyses from this proficiency test for a sample. If present the black, dashed lines mark the "true value" of the samples. The green, dashed lines mark the tolerance limits for the analyses for the sample calculated either with the reproducibility from the method description, if given, else with the reproducibility from this proficiency trial ($2 * s_R$).

Probe/Sample 2201:

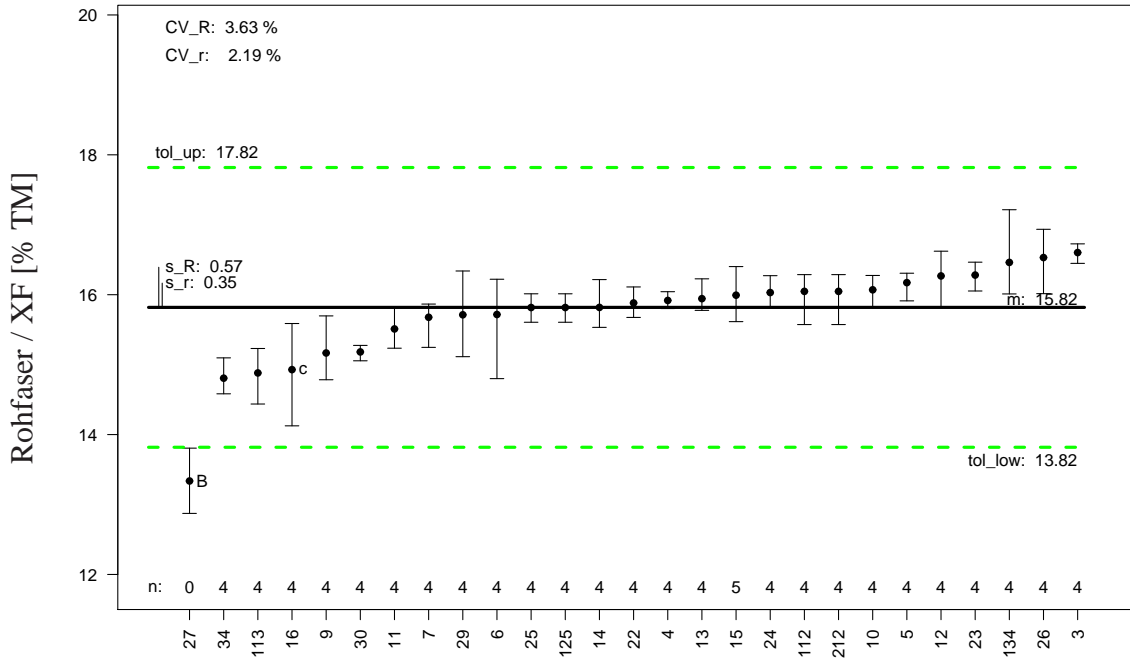


Rohfaser / XF

Probe/Sample 2202:

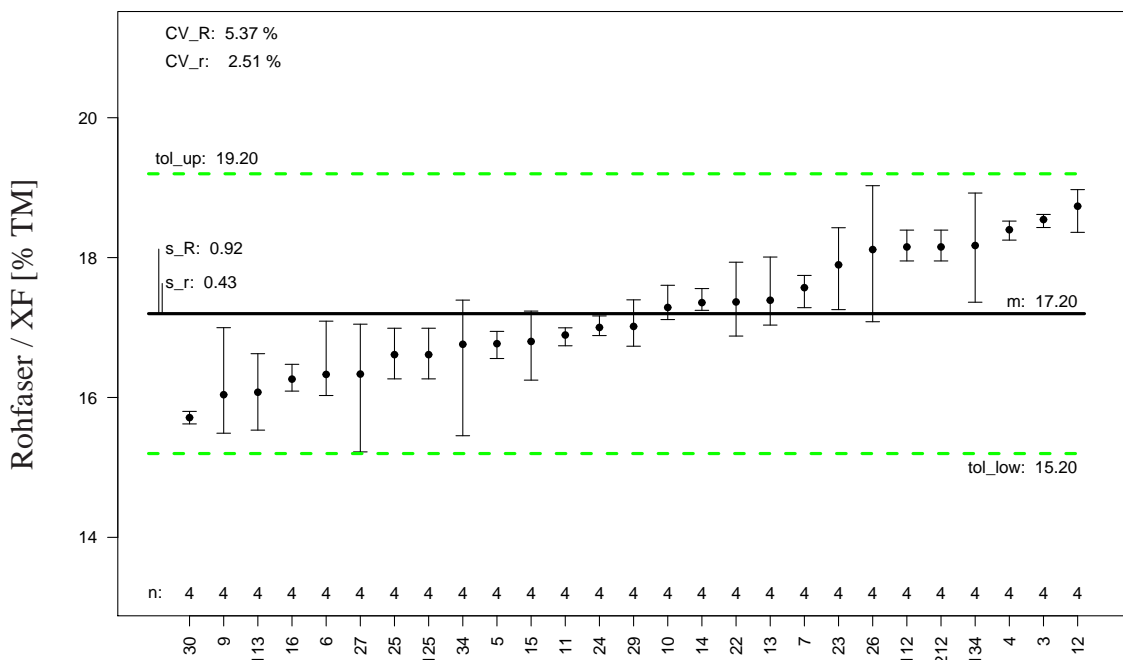


Probe/Sample 2203:

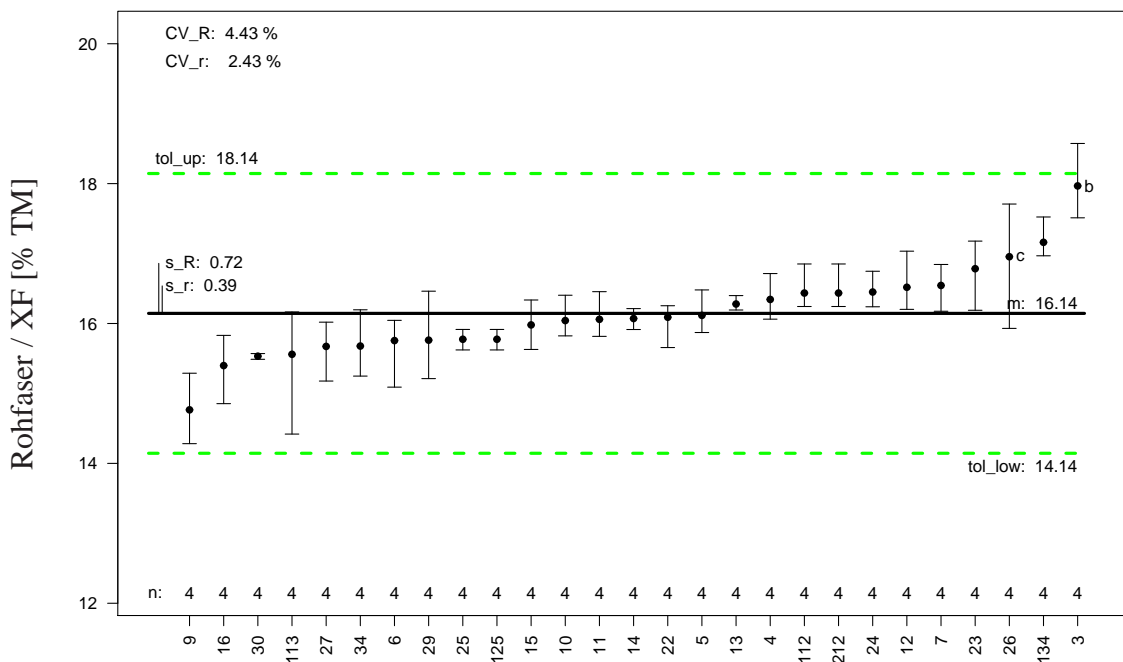


Rohfaser / XF

Probe/Sample 2204:

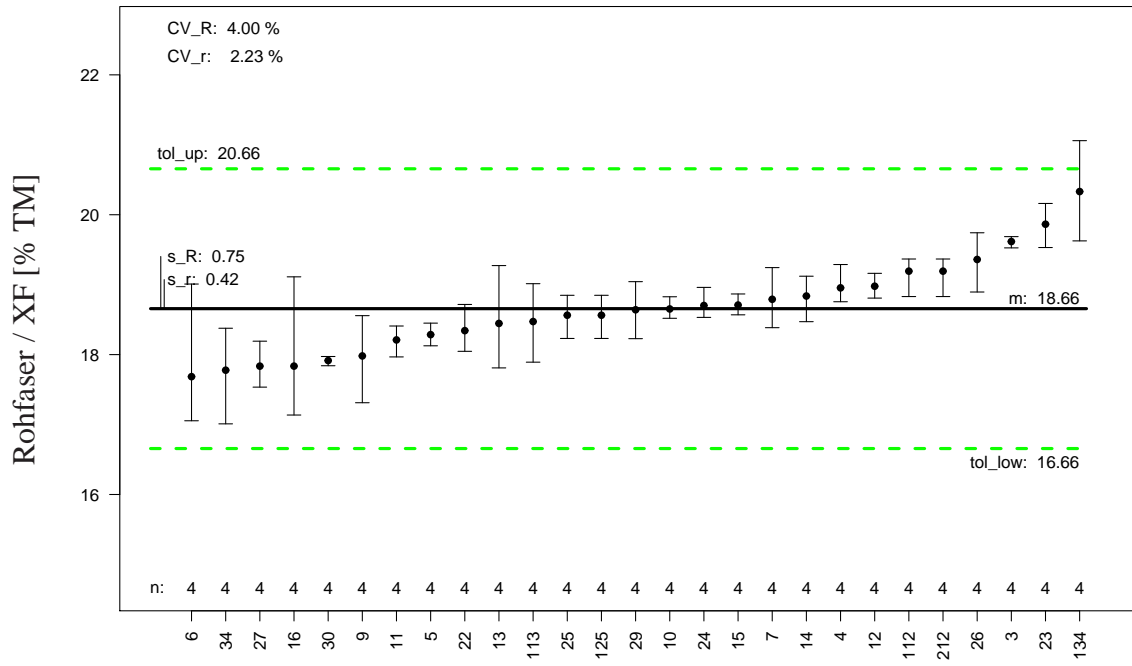


Probe/Sample 2205:



Rohfaser / XF

Probe/Sample 2206:



Rohfett / XL

5.4 Merkmal / Constituent: Rohfett / XL

Einheit / Unit: % TM

5.4.1 Anmerkungen / Annotations

5.4.2 Methodenbeschreibung / Method Description

Probe/Sample	2201	2202	2203	2204	2205	2206	VDLUFASR
n	108	108	109	108	108	108	
p	27	27	27	27	27	27	
n ₁	108	108	109	108	108	108	
p ₁	27	27	27	27	27	27	
m	2.35	2.74	2.55	3.04	2.82	2.19	
s _r	0.08	0.09	0.08	0.10	0.08	0.07	
CV _r	3.36	3.33	3.21	3.19	2.84	3.15	
r	0.22	0.26	0.23	0.27	0.23	0.20	
s _R	0.22	0.25	0.23	0.25	0.25	0.22	0.30
CV _R	9.19	9.25	9.11	8.39	8.71	9.87	
R	0.61	0.72	0.66	0.72	0.69	0.61	0.85
HORRAT ¹	2.61	2.69	2.62	2.48	2.55	2.78	

¹ siehe Anmerkung zu HORRAT im Vorspann, S. 8
remark to HORRAT in preamble, page 8

Rohfett / XL

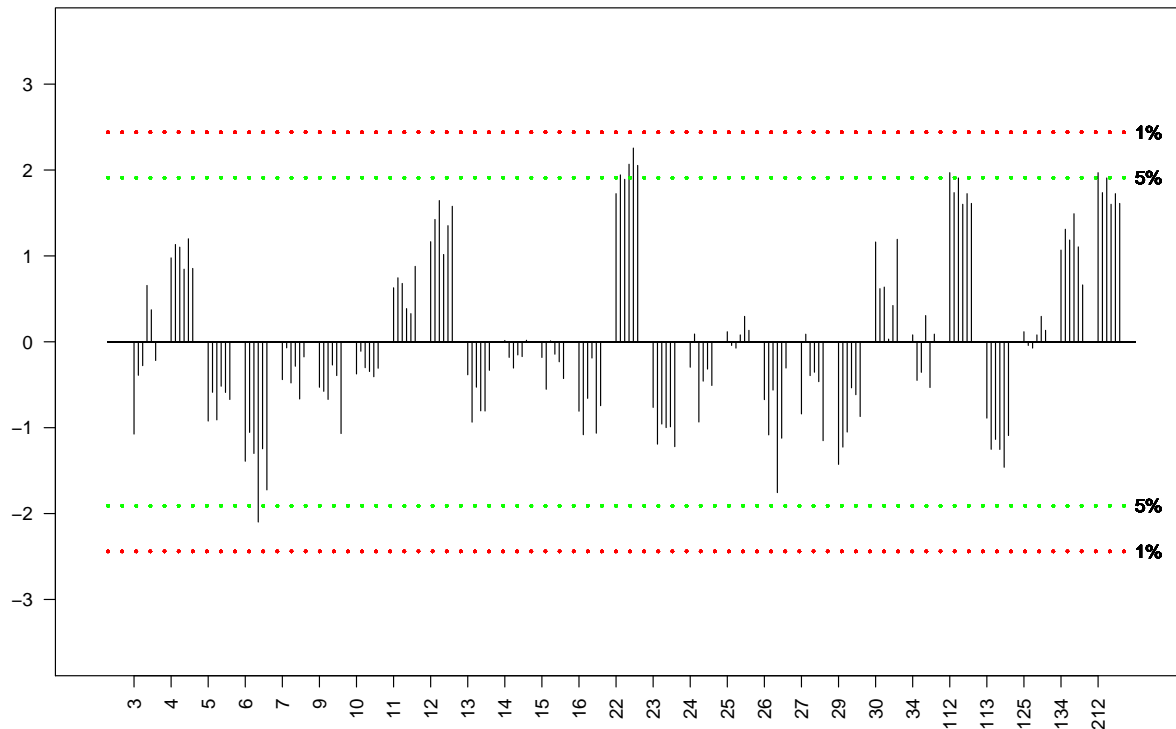
Ausreißer bei der Methodenbeschreibung nach ISO 5725 / Outlier in method description according to ISO 5725

In der folgenden Tabelle wird für jedes Labor angegeben, bei welchen Proben es als Ausreißer aufgefallen ist.

In the following table each lab is marked which was flagged as an outlier for a sample.

Labor	2201	2202	2203	2204	2205	2206
3						c
9		c				
27			c			
29					c	

Labormittelwertvergleich nach Mandels h / Lab mean comparison to Mandel's h



Oberste und unterste Linie 1%-Signifikanz-Niveau, mittlere Linien 5%-Signifikanz-Niveau.

Waagrecht finden sich die Labore mit jeweils einem Balken für jede Probe. Balken nach unten sind negative Abweichungen des Messwertes dieser Proben, Balken nach oben positive Abweichungen. Die Länge der Balken ist normiert, so dass Proben mit unterschiedlichen Gehalten verglichen werden können.

Upper and lower lines 1% significance level, intermediate lines 5% significance level.

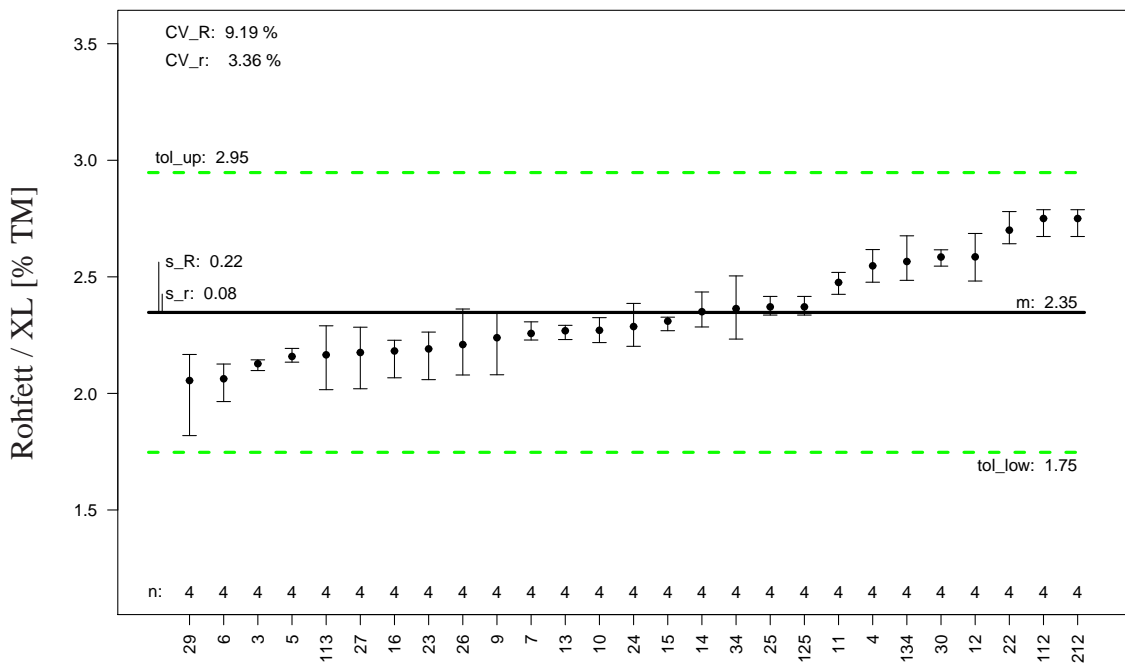
The labs are ordered horizontally with a bar for each sample. Bars oriented downwards represent negative deviations for a sample, bar oriented upwards positive deviations. The bar lengths are normed, to allow to compare samples with different concentrations.

Rohfett / XL

Proben. Die grünen, gestrichelten Linien markieren die Toleranzgrenzen ($2 \cdot s_R$) für die Analysen zu der Probe, die falls vorhanden mit der Vergleichsstandardabweichung der Methode nach Norm, sonst mit der Vergleichsstandardabweichung aus diesem Ringversuch berechnet wurden.

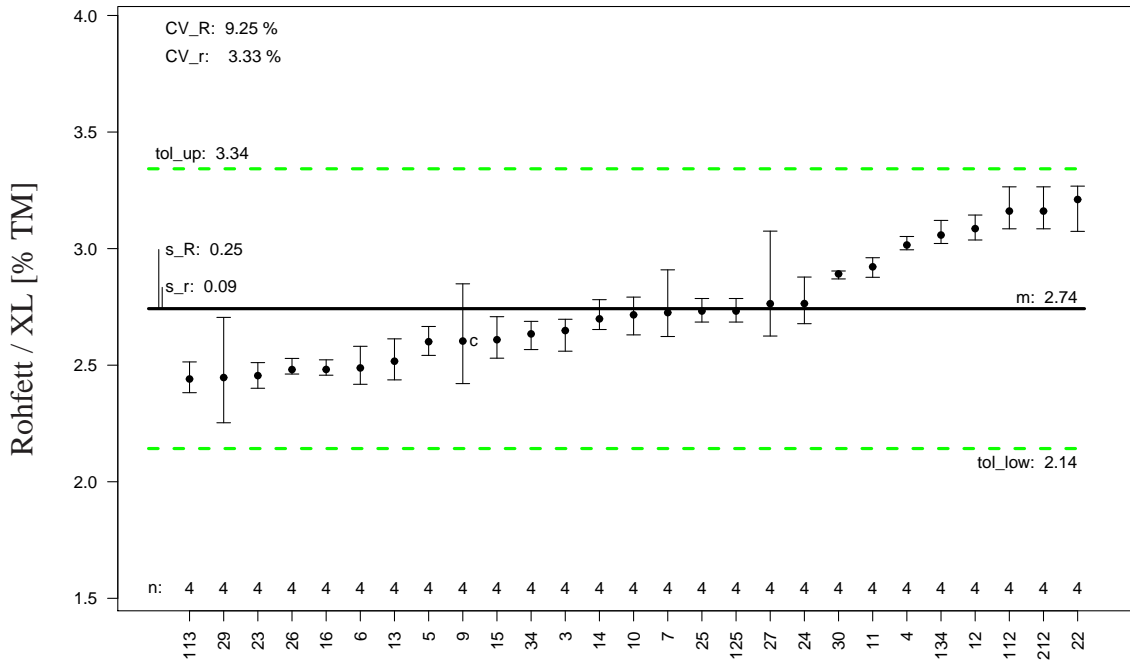
The solid, black, horizontal lines are the mean of analyses from this proficiency test for a sample. If present the black, dashed lines mark the "true value" of the samples. The green, dashed lines mark the tolerance limits for the analyses for the sample calculated either with the reproducibility from the method description, if given, else with the reproducibility from this proficiency trial ($2 \cdot s_R$).

Probe/Sample 2201:

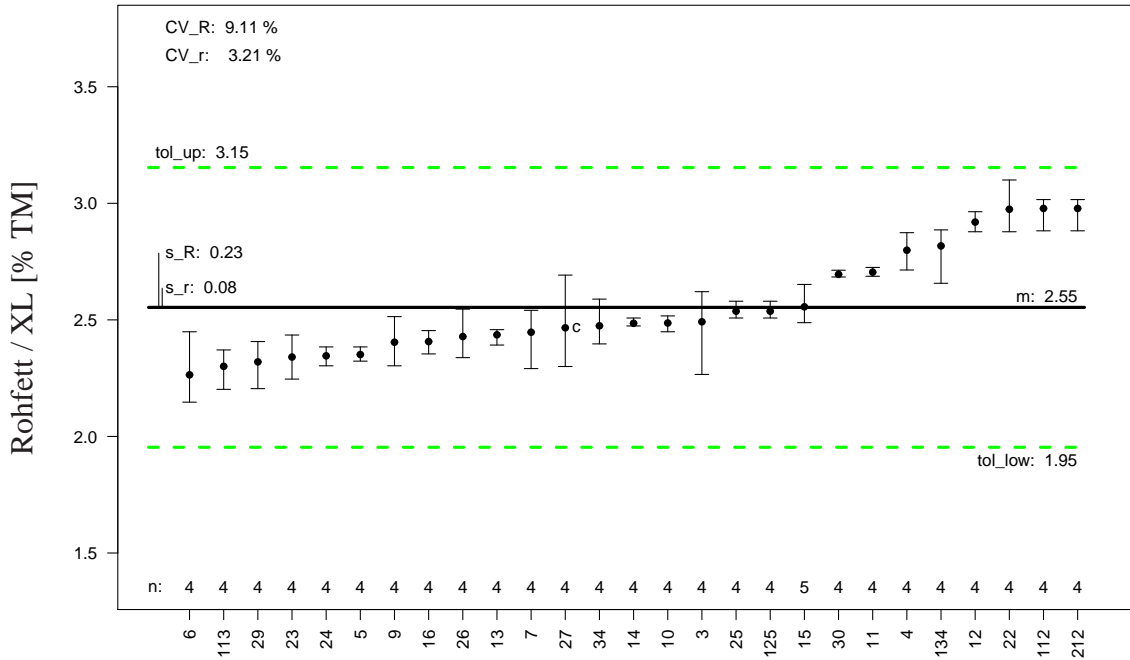


Rohfett / XL

Probe/Sample 2202:



Probe/Sample 2203:



Stärke / XS

5.5 Merkmal / Constituent: Stärke / XS

Einheit / Unit: % TM

5.5.1 Anmerkungen / Annotations

5.5.2 Methodenbeschreibung / Method Description

Probe/Sample	2201	2202	2203	2204	2205	2206	VDLUFA ASR
n	108	108	109	108	108	108	
p	27	27	27	27	27	27	
n ₁	108	108	109	108	108	108	
p ₁	27	27	27	27	27	27	
m	30.04	39.83	34.11	37.37	39.35	29.87	
s _r	0.77	0.71	0.73	0.84	0.68	0.70	
CV _r	2.58	1.79	2.15	2.25	1.73	2.35	
r	2.19	2.02	2.07	2.38	1.92	1.99	
s _R	1.65	1.61	1.63	1.79	1.52	1.49	1.50
CV _R	5.51	4.04	4.77	4.79	3.86	4.99	
R	4.68	4.56	4.60	5.06	4.30	4.22	4.25
HORRAT ¹	2.30	1.76	2.03	2.07	1.68	2.08	

¹ siehe Anmerkung zu HORRAT im Vorspann, S. 8
remark to HORRAT in preamble, page 8

Stärke / XS

Ausreißer bei der Methodenbeschreibung nach ISO 5725 / Outlier in method description according to ISO 5725

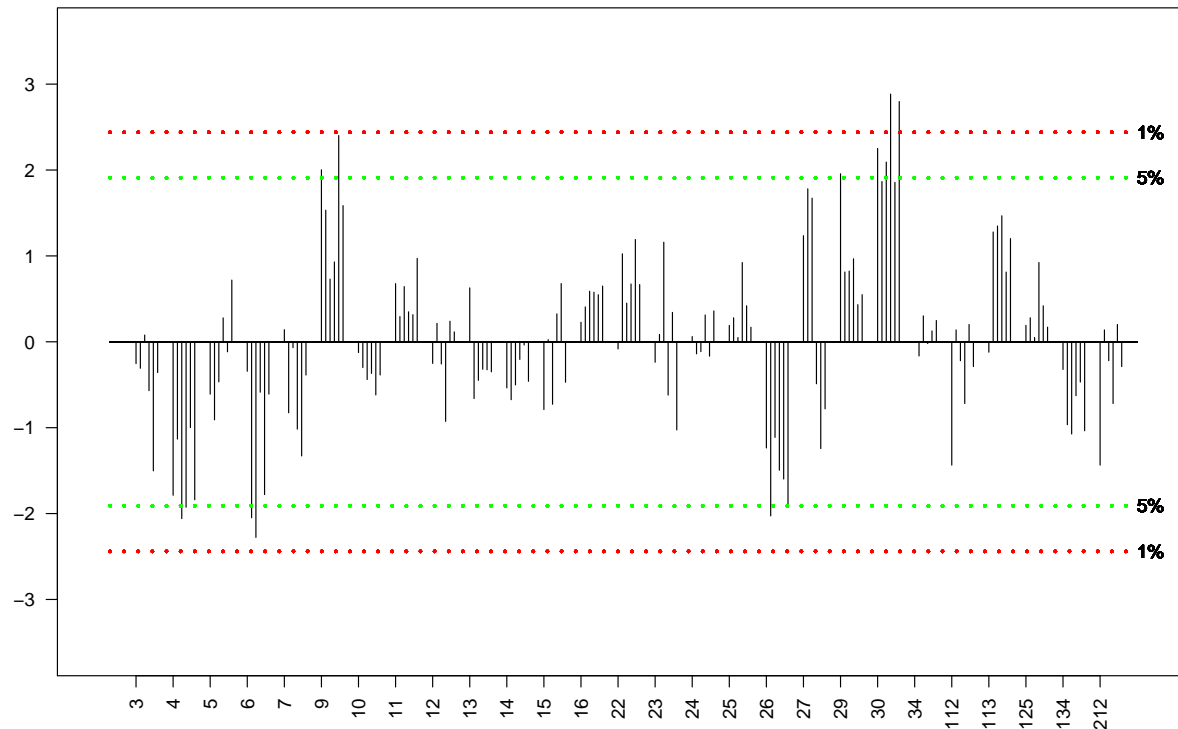
In der folgenden Tabelle wird für jedes Labor angegeben, bei welchen Proben es als Ausreißer aufgefallen ist.

In the following table each lab is marked which was flagged as an outlier for a sample.

Labor	2201	2202	2203	2204	2205	2206
16						c
26		c		c		
30				b		

Stärke / XS

Labormittelwertvergleich nach Mandels h / Lab mean comparison to Mandel's h



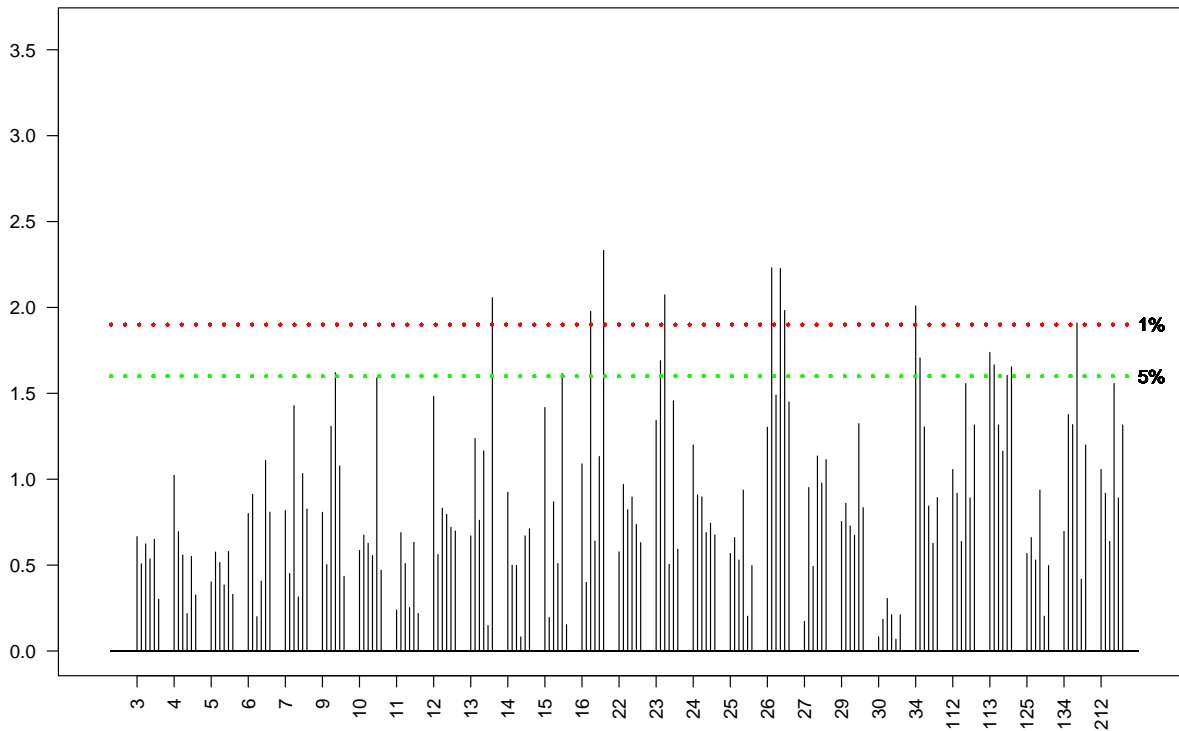
Oberste und unterste Linie 1%-Signifikanz-Niveau, mittlere Linien 5%-Signifikanz-Niveau.

Waagrecht finden sich die Labore mit jeweils einem Balken für jede Probe. Balken nach unten sind negative Abweichungen des Messwertes dieser Proben, Balken nach oben positive Abweichungen. Die Länge der Balken ist normiert, so dass Proben mit unterschiedlichen Gehalten verglichen werden können.

Upper and lower lines 1% significance level, intermediate lines 5% significance level.

The labs are ordered horizontally with a bar for each sample. Bars oriented downwards represent negative deviations for a sample, bar oriented upwards positive deviations. The bar lengths are normed, to allow to compare samples with different concentrations.

Vergleich der laborinternen Streuung nach Mandels k / Lab
internal repeatability comparison Mandel's k



Obere Linie 1%-Signifikanz-Niveau, untere Linie 5%-Signifikanz-Niveau.

Waagrecht finden sich die Labore mit jeweils einem Balken für jede Probe. Die Balken für die einzelnen Proben beginnen immer bei der Markierung der ganzen Zahl, d.h. z.B. für Labor 5 bei 5.0.

Die Balkenlänge ist die normierte laborinterne Streuung für die Wiederholungen dieser Probe. Lange Balken kennzeichnen eine große laborinterne Streuung.

Upper line 1% significance level, lower line 5% significance level.

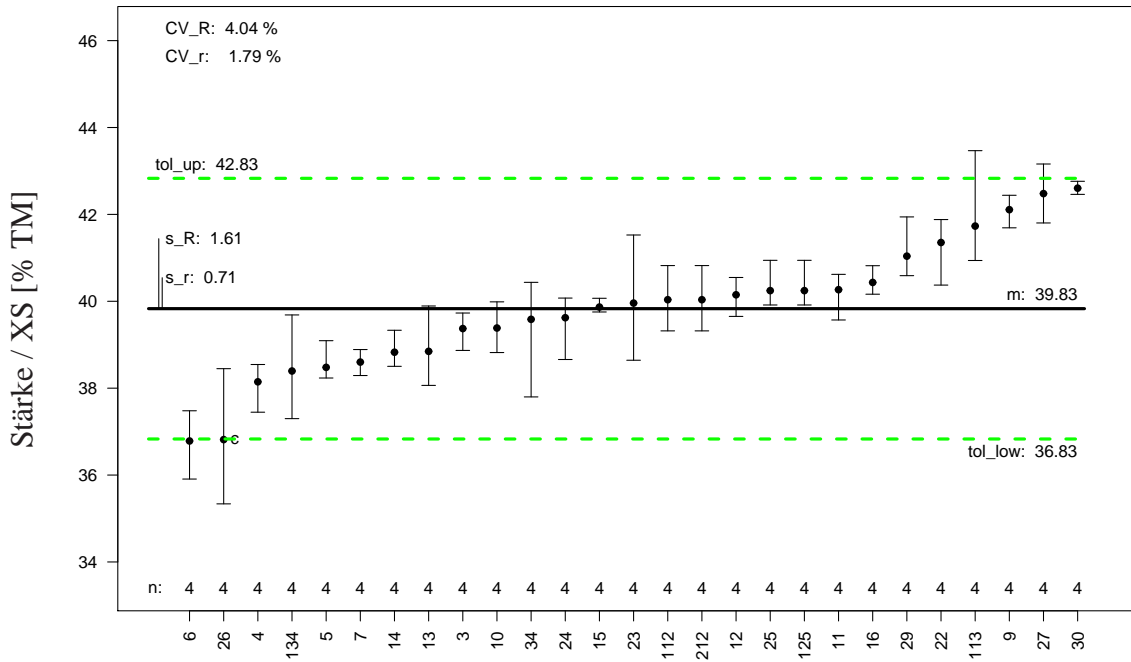
The labs are ordered horizontally with a bar for each sample. The bar for the first sample from one lab always start at the whole number, i.e. for lab 5 at 5.0.

Bar lengths represent the lab internal repeatability. Long bars mark large deviations between repeats inside that laboratory.

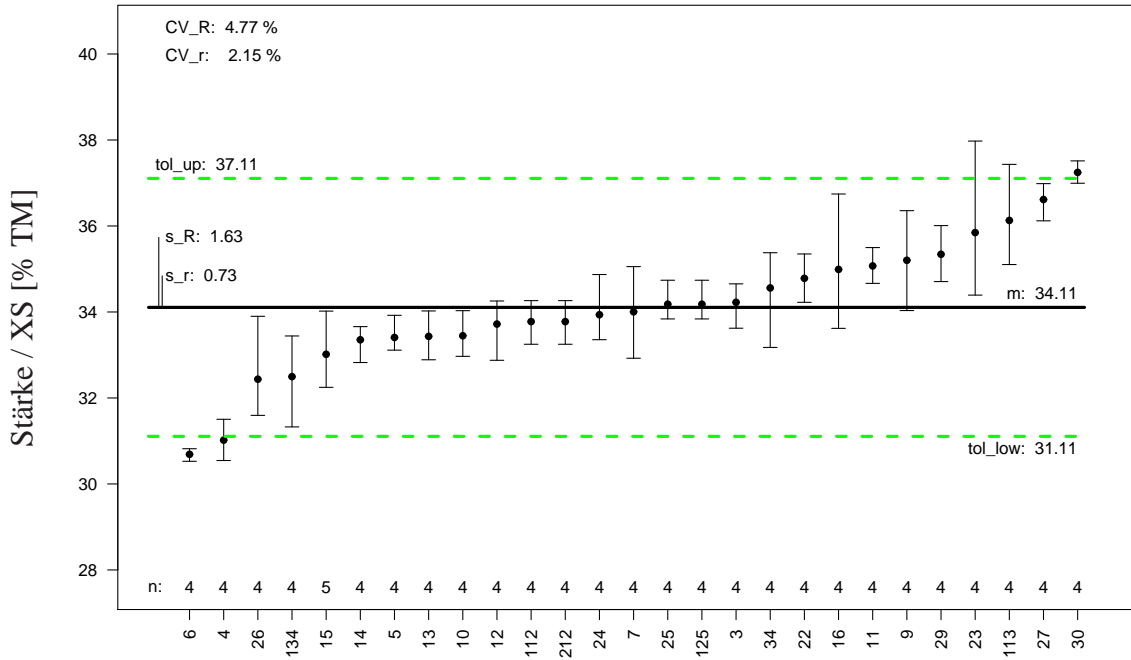
Einzelproben / Single Samples Die durchgezogene, schwarze, waagrechte Linien kennzeichnen den Mittelwert der Analysen für die Proben in diesem Ringversuch. Falls vorhanden, markieren die schwarzen, gestrichelten Linien den "wahren Wert" für die

Stärke / XS

Probe/Sample 2202:

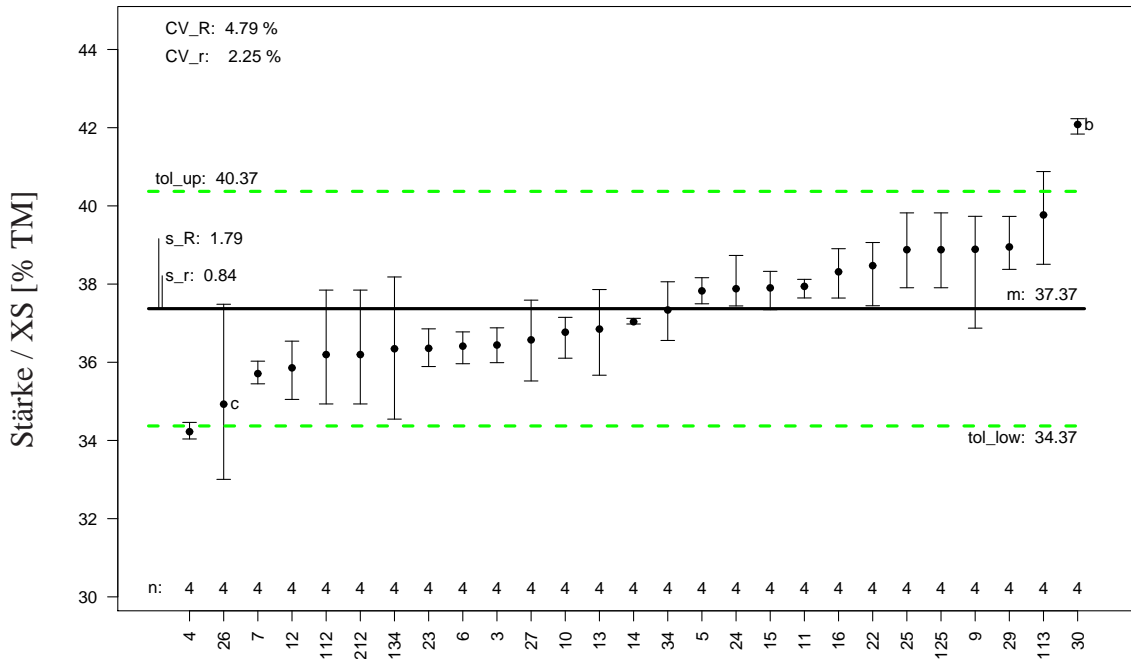


Probe/Sample 2203:

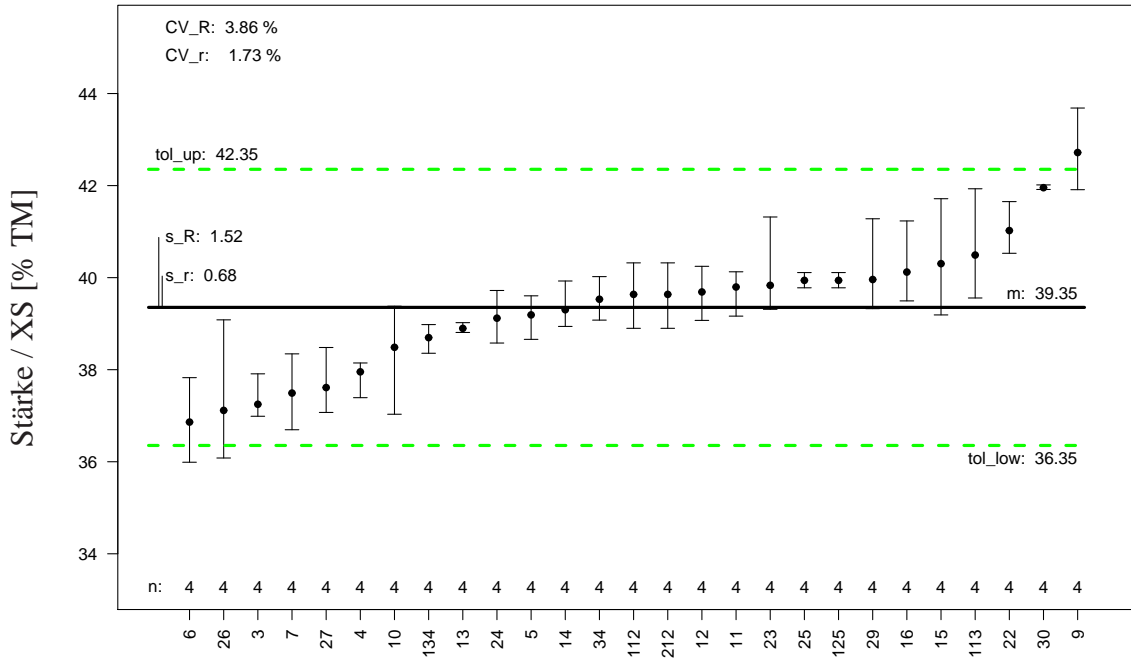


Stärke / XS

Probe/Sample 2204:

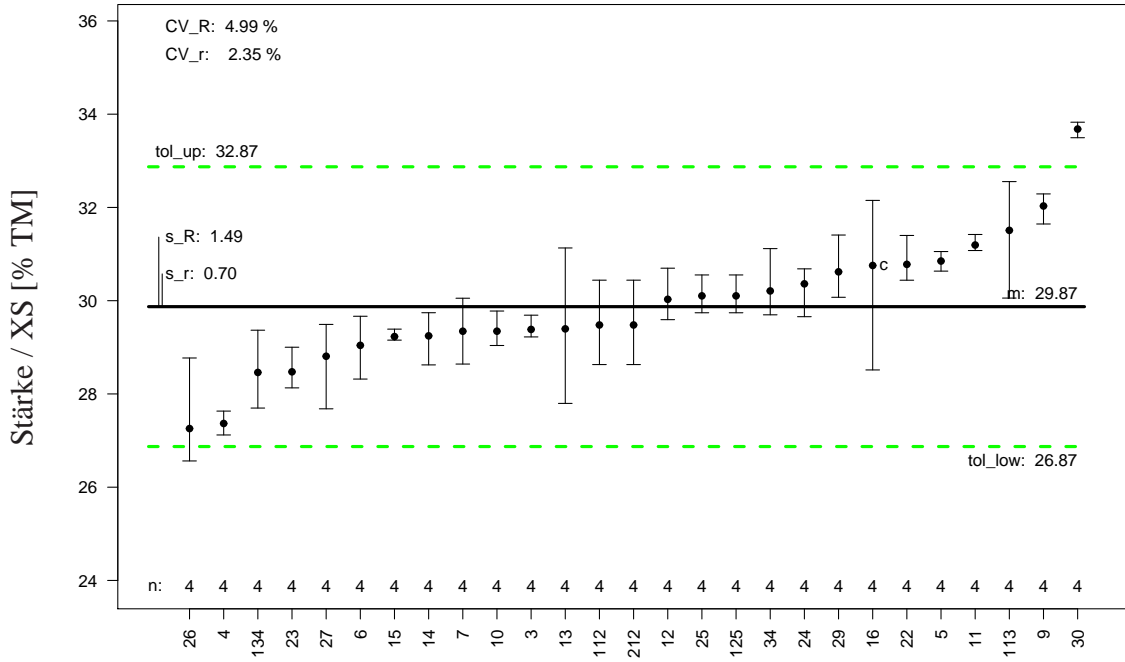


Probe/Sample 2205:



Stärke / XS

Probe/Sample 2206:



Zucker / XZ

5.6 Merkmal / Constituent: Zucker / XZ

Einheit / Unit: % TM

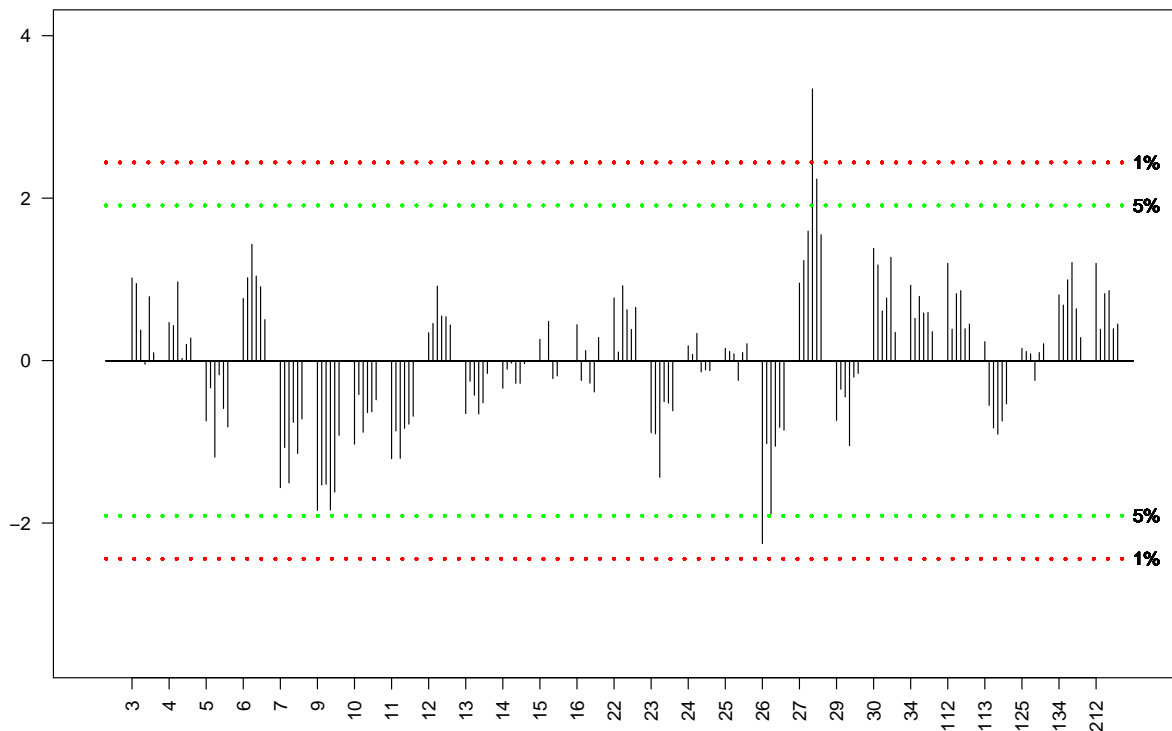
5.6.1 Anmerkungen / Annotations

5.6.2 Methodenbeschreibung / Method Description

Probe/Sample	2201	2202	2203	2204	2205	2206	VDLUFASR
n	108	108	109	108	108	108	
p	27	27	27	27	27	27	
n ₁	108	108	109	104	108	108	
p ₁	27	27	27	26	27	27	
m	9.50	7.43	11.79	5.45	7.15	11.05	
s _r	0.29	0.31	0.38	0.24	0.23	0.28	
CV _r	3.04	4.14	3.19	4.44	3.23	2.51	
r	0.82	0.87	1.06	0.69	0.65	0.78	
s _R	0.76	0.80	0.81	0.59	0.86	0.77	0.75
CV _R	7.95	10.71	6.84	10.90	12.01	7.01	
R	2.14	2.25	2.28	1.68	2.43	2.19	2.12
HORRAT ¹	2.79	3.62	2.48	3.52	4.04	2.52	

¹ siehe Anmerkung zu HORRAT im Vorspann, S. 8
remark to HORRAT in preamble, page 8

Labormittelwertvergleich nach Mandels h / Lab mean comparison to Mandel's h



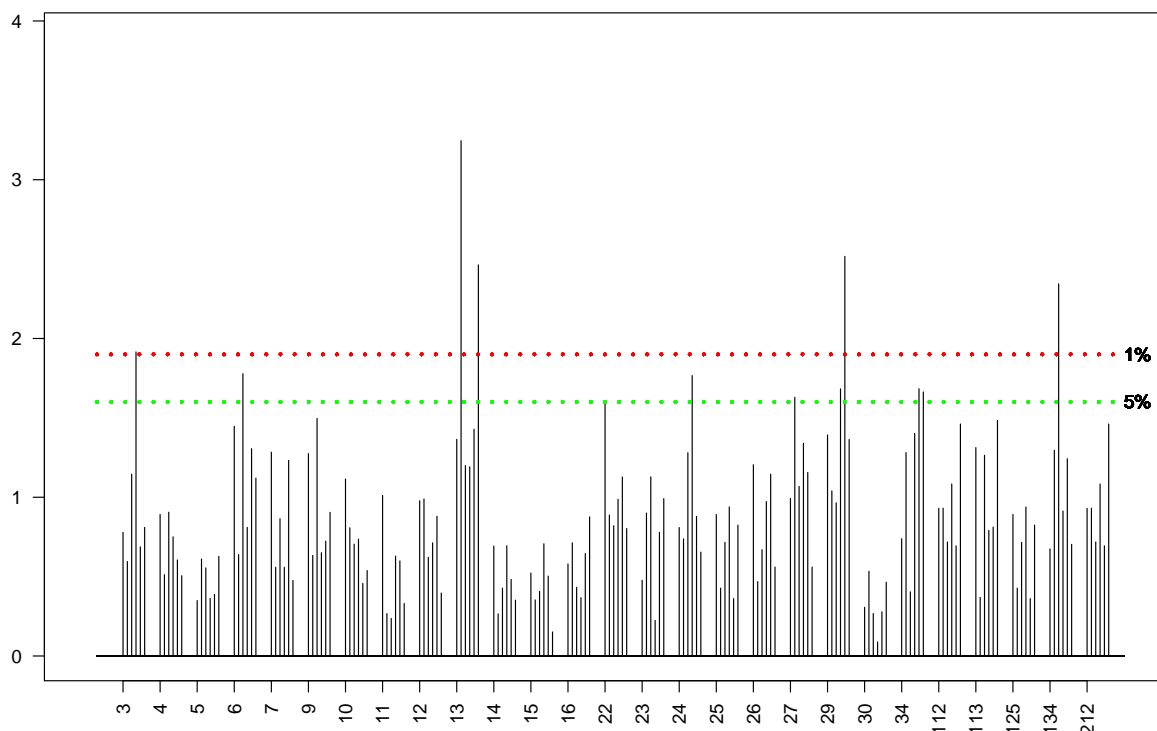
Oberste und unterste Linie 1%-Signifikanz-Niveau, mittlere Linien 5%-Signifikanz-Niveau.

Waagrecht finden sich die Labore mit jeweils einem Balken für jede Probe. Balken nach unten sind negative Abweichungen des Messwertes dieser Proben, Balken nach oben positive Abweichungen. Die Länge der Balken ist normiert, so dass Proben mit unterschiedlichen Gehalten verglichen werden können.

Upper and lower lines 1% significance level, intermediate lines 5% significance level.

The labs are ordered horizontally with a bar for each sample. Bars oriented downwards represent negative deviations for a sample, bar oriented upwards positive deviations. The bar lengths are normed, to allow to compare samples with different concentrations.

**Vergleich der laborinternen Streuung nach Mandels k / Lab
internal repeatability comparison Mandel's k**



Obere Linie 1%-Signifikanz-Niveau, untere Linie 5%-Signifikanz-Niveau.

Waagrecht finden sich die Labore mit jeweils einem Balken für jede Probe. Die Balken für die einzelnen Proben beginnen immer bei der Markierung der ganzen Zahl, d.h. z.B. für Labor 5 bei 5.0.

Die Balkenlänge ist die normierte laborinterne Streuung für die Wiederholungen dieser Probe. Lange Balken kennzeichnen eine große laborinterne Streuung.

Upper line 1% significance level, lower line 5% significance level.

The labs are ordered horizontally with a bar for each sample. The bar for the first sample from one lab always start at the whole number, i.e. for lab 5 at 5.0.

Bar lengths represent the lab internal repeatability. Long bars mark large deviations between repeats inside that laboratory.

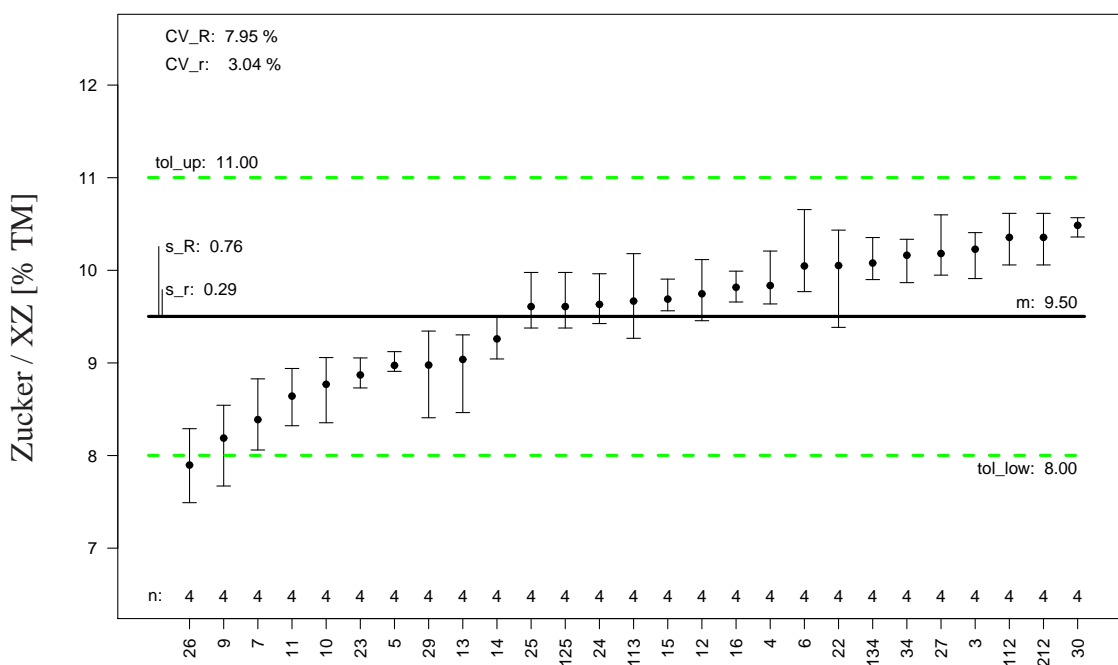
Einzelproben / Single Samples Die durchgezogene, schwarze, waagerechte Linien kennzeichnen den Mittelwert der Analysen für die Proben in diesem Ringversuch. Falls vorhanden, markieren die schwarzen, gestrichelten Linien den "wahren Wert" für die

Zucker / XZ

Proben. Die grünen, gestrichelten Linien markieren die Toleranzgrenzen ($2 \cdot s_R$) für die Analysen zu der Probe, die falls vorhanden mit der Vergleichsstandardabweichung der Methode nach Norm, sonst mit der Vergleichsstandardabweichung aus diesem Ringversuch berechnet wurden.

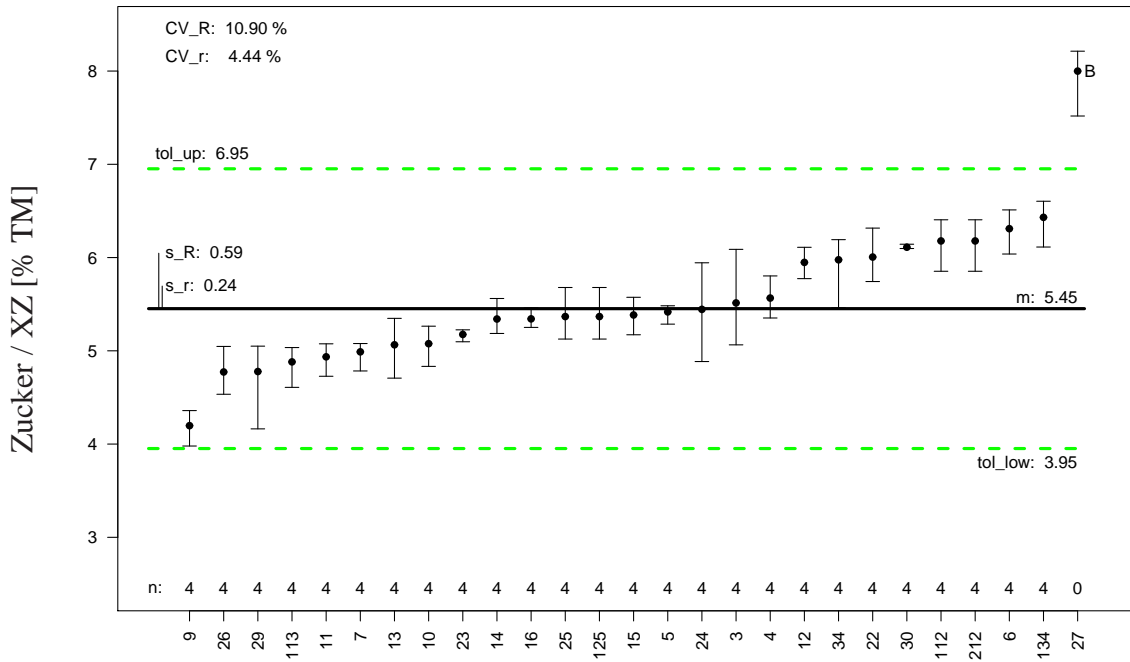
The solid, black, horizontal lines are the mean of analyses from this proficiency test for a sample. If present the black, dashed lines mark the "true value" of the samples. The green, dashed lines mark the tolerance limits for the analyses for the sample calculated either with the reproducibility from the method description, if given, else with the reproducibility from this proficiency trial ($2 \cdot s_R$).

Probe/Sample 2201:

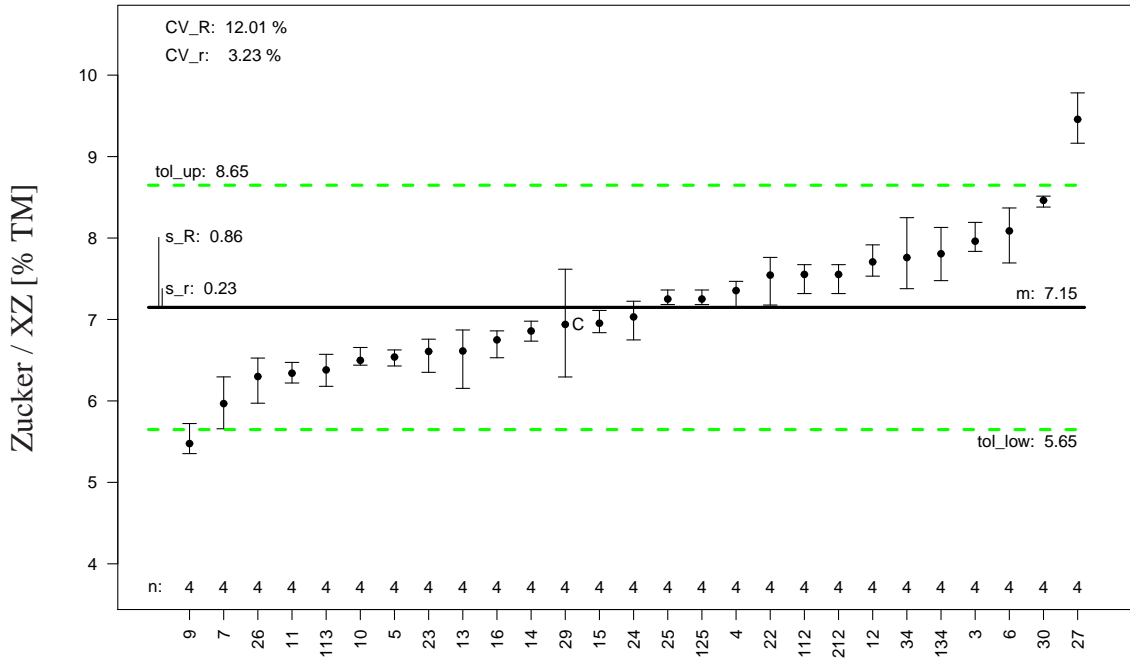


Zucker / XZ

Probe/Sample 2204:

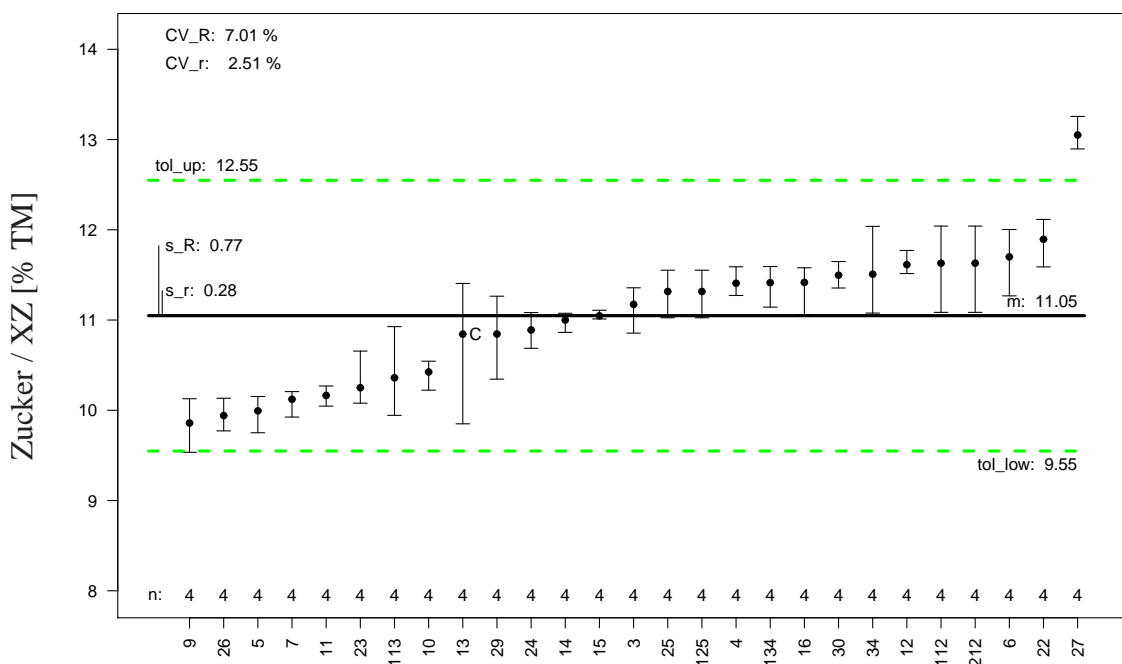


Probe/Sample 2205:



Zucker / XZ

Probe/Sample 2206:



aNDFom

5.7 Merkmal / Constituent: aNDFom

Einheit / Unit: % TM

5.7.1 Anmerkungen / Annotations

5.7.2 Methodenbeschreibung / Method Description

Probe/Sample	2201	2202	2203	2204	2205	2206	VDLUFA ASR
n	108	108	109	108	108	108	
p	27	27	27	27	27	27	
n ₁	108	108	109	108	108	108	
p ₁	27	27	27	27	27	27	
m	42.72	35.56	36.14	39.39	37.10	40.76	
s _r	0.56	0.57	0.55	0.56	0.59	0.52	
CV _r	1.31	1.61	1.53	1.42	1.59	1.27	
r	1.59	1.62	1.57	1.58	1.67	1.46	
s _R	1.34	1.27	1.29	1.27	1.18	1.27	1.75
CV _R	3.15	3.56	3.58	3.23	3.18	3.11	
R	3.80	3.59	3.66	3.60	3.33	3.58	4.95
HORRAT ¹	1.39	1.52	1.54	1.40	1.37	1.36	

¹ siehe Anmerkung zu HORRAT im Vorspann, S. 8
remark to HORRAT in preamble, page 8

aNDFom

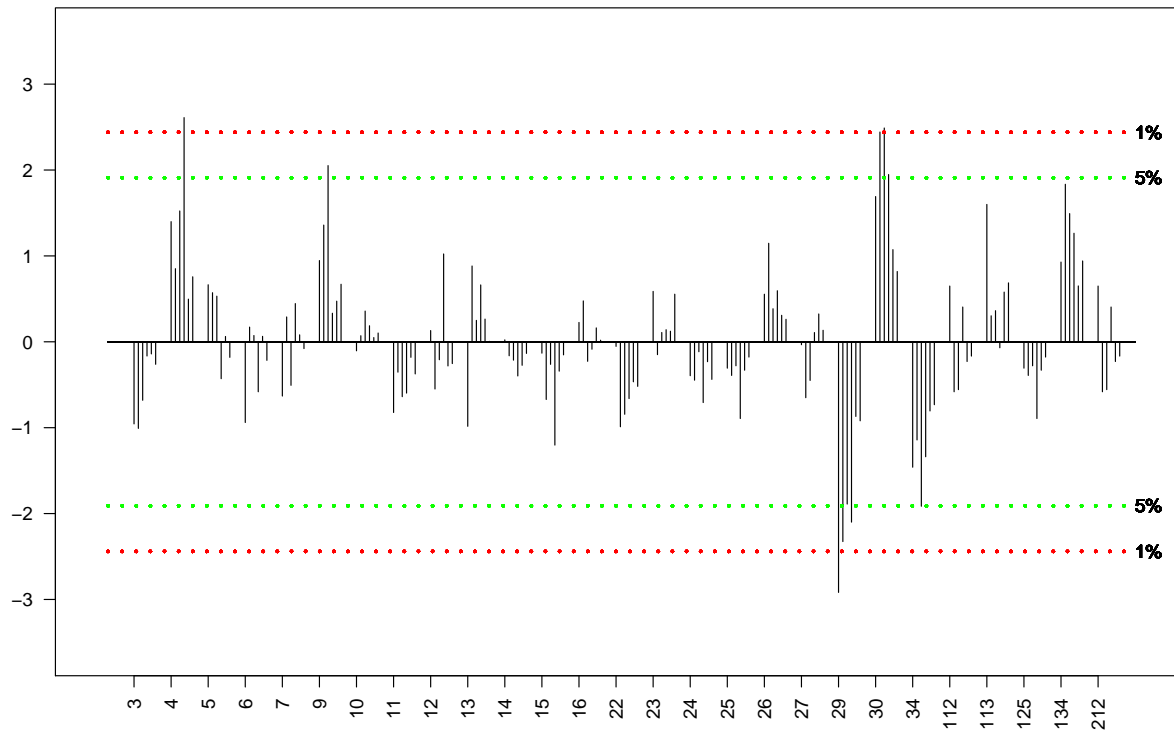
Ausreißer bei der Methodenbeschreibung nach ISO 5725 / Outlier in method description according to ISO 5725

In der folgenden Tabelle wird für jedes Labor angegeben, bei welchen Proben es als Ausreißer aufgefallen ist.

In the following table each lab is marked which was flaged as an outlier for a sample.

Labor	2201	2202	2203	2204	2205	2206
16						C
26				c	C	
29	b					

Labormittelwertvergleich nach Mandels h / Lab mean comparison to Mandel's h



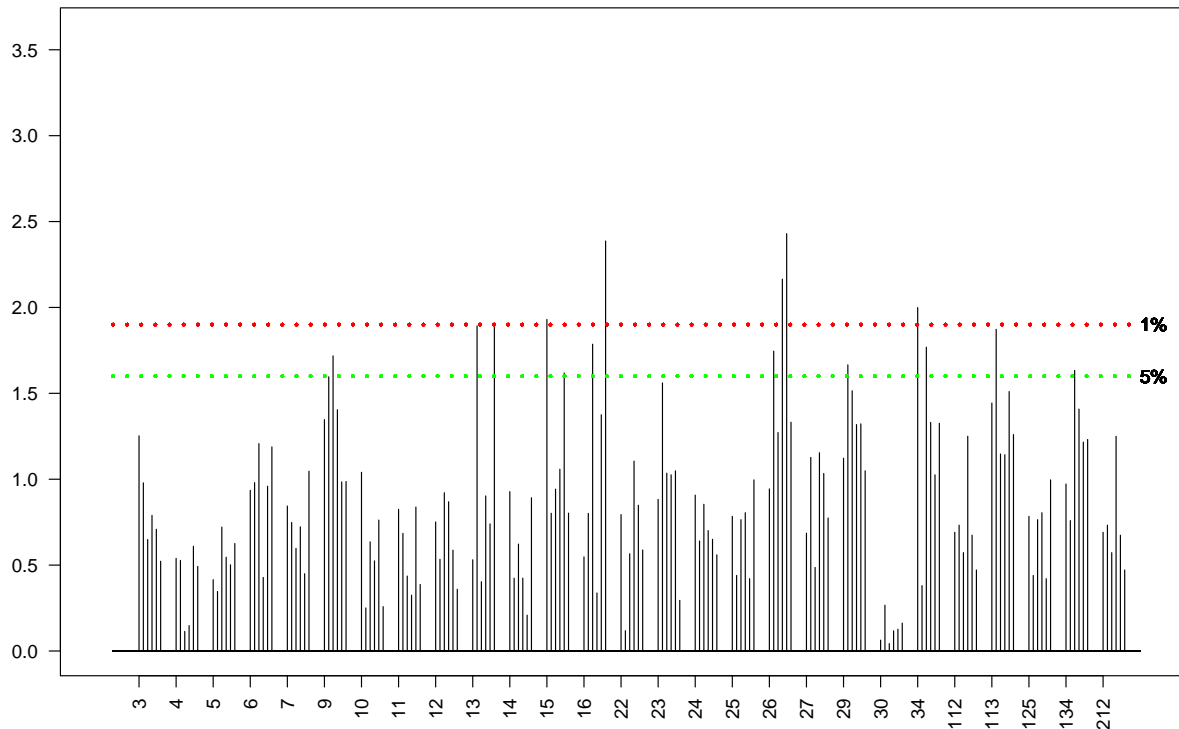
Oberste und unterste Linie 1%-Signifikanz-Niveau, mittlere Linien 5%-Signifikanz-Niveau.

Waagrecht finden sich die Labore mit jeweils einem Balken für jede Probe. Balken nach unten sind negative Abweichungen des Messwertes dieser Proben, Balken nach oben positive Abweichungen. Die Länge der Balken ist normiert, so dass Proben mit unterschiedlichen Gehalten verglichen werden können.

Upper and lower lines 1% significance level, intermediate lines 5% significance level.

The labs are ordered horizontally with a bar for each sample. Bars oriented downwards represent negative deviations for a sample, bar oriented upwards positive deviations. The bar lengths are normed, to allow to compare samples with different concentrations.

Vergleich der laborinternen Streuung nach Mandels k / Lab internal repeatability comparison Mandel's k



Obere Linie 1%-Signifikanz-Niveau, untere Linie 5%-Signifikanz-Niveau.

Waagrecht finden sich die Labore mit jeweils einem Balken für jede Probe. Die Balken für die einzelnen Proben beginnen immer bei der Markierung der ganzen Zahl, d.h. z.B. für Labor 5 bei 5.0.

Die Balkenlänge ist die normierte laborinterne Streuung für die Wiederholungen dieser Probe. Lange Balken kennzeichnen eine große laborinterne Streuung.

Upper line 1% significance level, lower line 5% significance level.

The labs are ordered horizontally with a bar for each sample. The bar for the first sample from one lab always start at the whole number, i.e. for lab 5 at 5.0.

Bar lengths represent the lab internal repeatability. Long bars mark large deviations between repeats inside that laboratory.

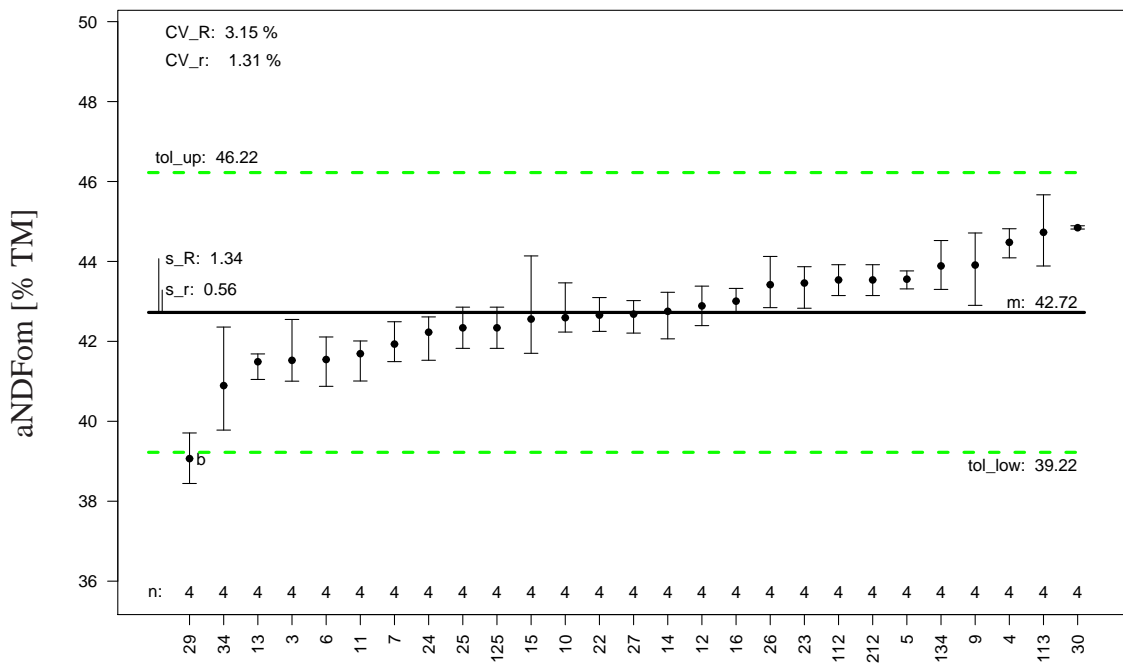
Einzelproben / Single Samples Die durchgezogene, schwarze, waagerechte Linien kennzeichnen den Mittelwert der Analysen für die Proben in diesem Ringversuch. Falls vorhanden, markieren die schwarzen, gestrichelten Linien den "wahren Wert" für die

aNDFom

Proben. Die grünen, gestrichelten Linien markieren die Toleranz-Grenzen ($2 \cdot s_R$) für die Analysen zu der Probe, die falls vorhanden mit der Vergleichsstandardabweichung der Methode nach Norm, sonst mit der Vergleichsstandardabweichung aus diesem Ringversuch berechnet wurden.

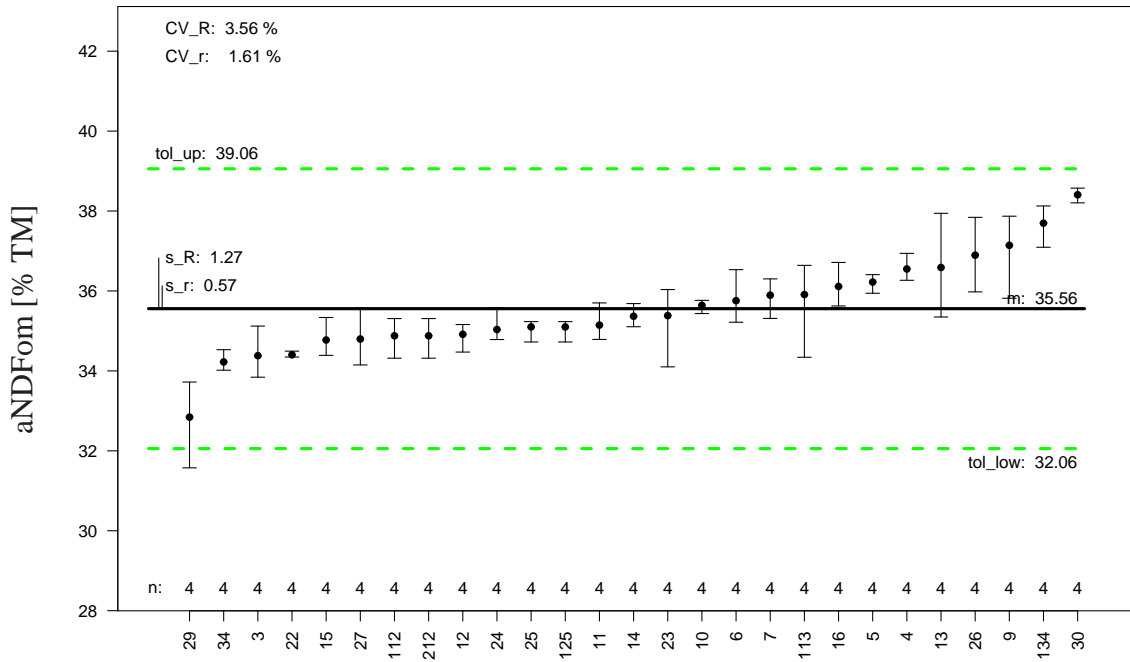
The solid, black, horizontal lines are the mean of analyses from this proficiency test for a sample. If present the black, dashed lines mark the "true value" of the samples. The green, dashed lines mark the tolerance limits for the analyses for the sample calculated either with the reproducibility from the method description, if given, else with the reproducibility from this proficiency trial ($2 \cdot s_R$).

Probe/Sample 2201:

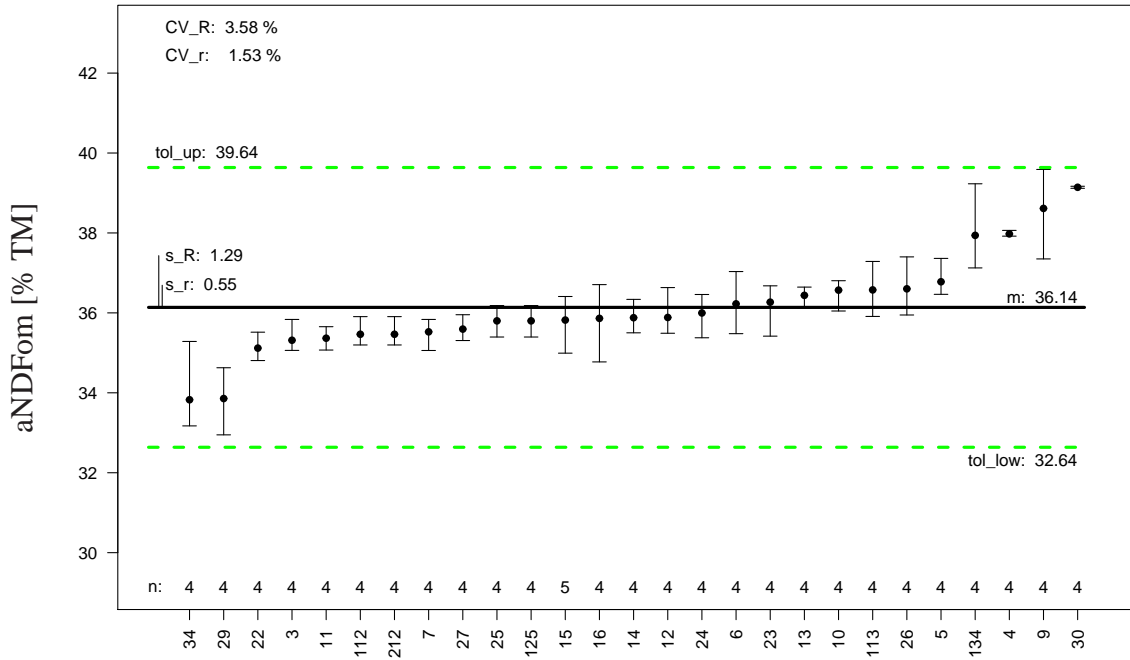


aNDFom

Probe/Sample 2202:

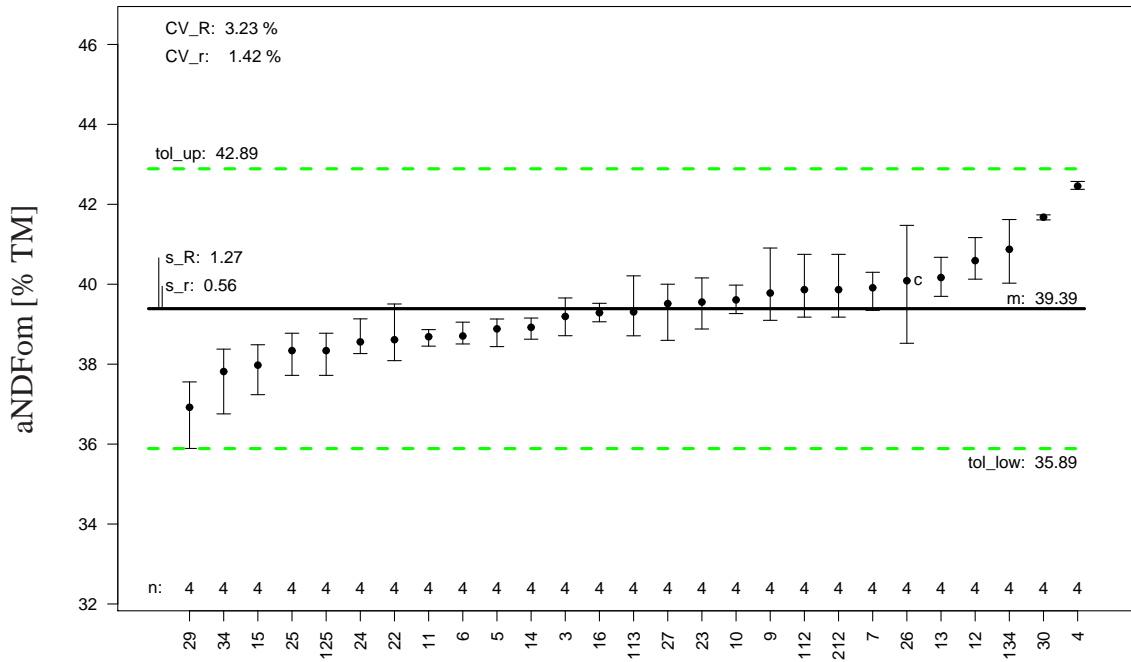


Probe/Sample 2203:

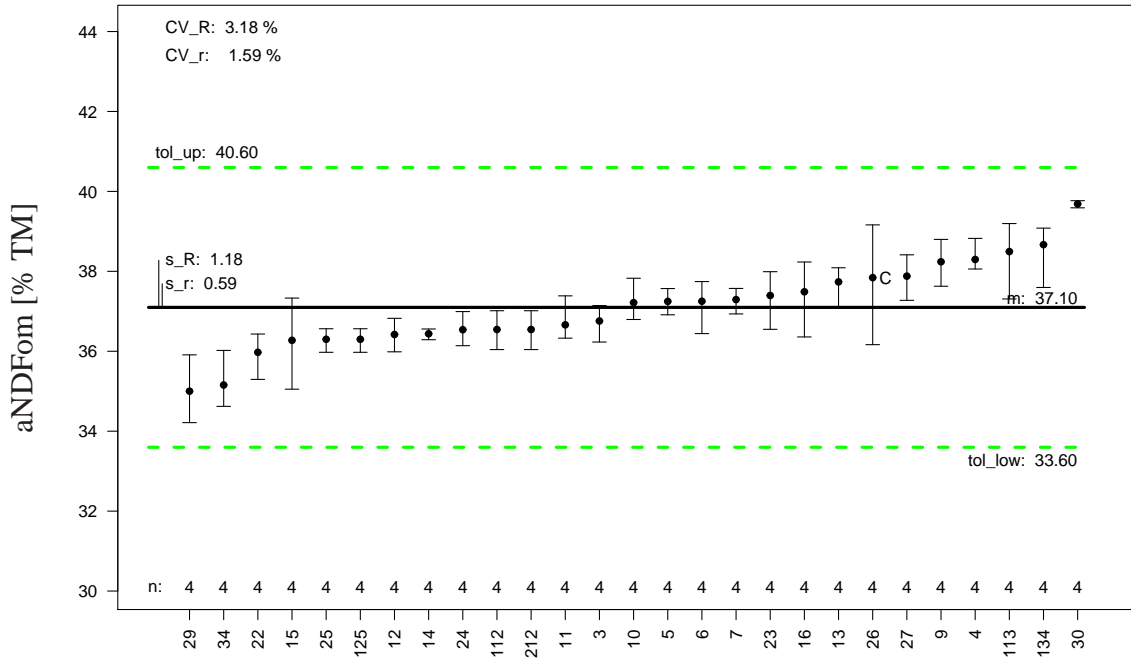


aNDFom

Probe/Sample 2204:



Probe/Sample 2205:



ADFom

5.8 Merkmal / Constituent: ADFom

Einheit / Unit: % TM

5.8.1 Anmerkungen / Annotations

5.8.2 Methodenbeschreibung / Method Description

Probe/Sample	2201	2202	2203	2204	2205	2206	VDLUFA ASR
n	108	108	109	108	108	108	
p	27	27	27	27	27	27	
n ₁	100	108	109	108	104	108	
p ₁	25	27	27	27	26	27	
m	24.32	18.76	19.05	20.87	18.94	22.37	
s _r	0.47	0.48	0.41	0.44	0.40	0.38	
CV _r	1.95	2.58	2.17	2.12	2.09	1.70	
r	1.34	1.37	1.17	1.25	1.12	1.07	
s _R	0.82	1.05	0.90	1.17	0.87	1.05	1.10
CV _R	3.38	5.57	4.72	5.59	4.61	4.72	
R	2.33	2.96	2.54	3.30	2.47	2.98	3.11
HORRAT ¹	1.37	2.16	1.84	2.21	1.79	1.88	

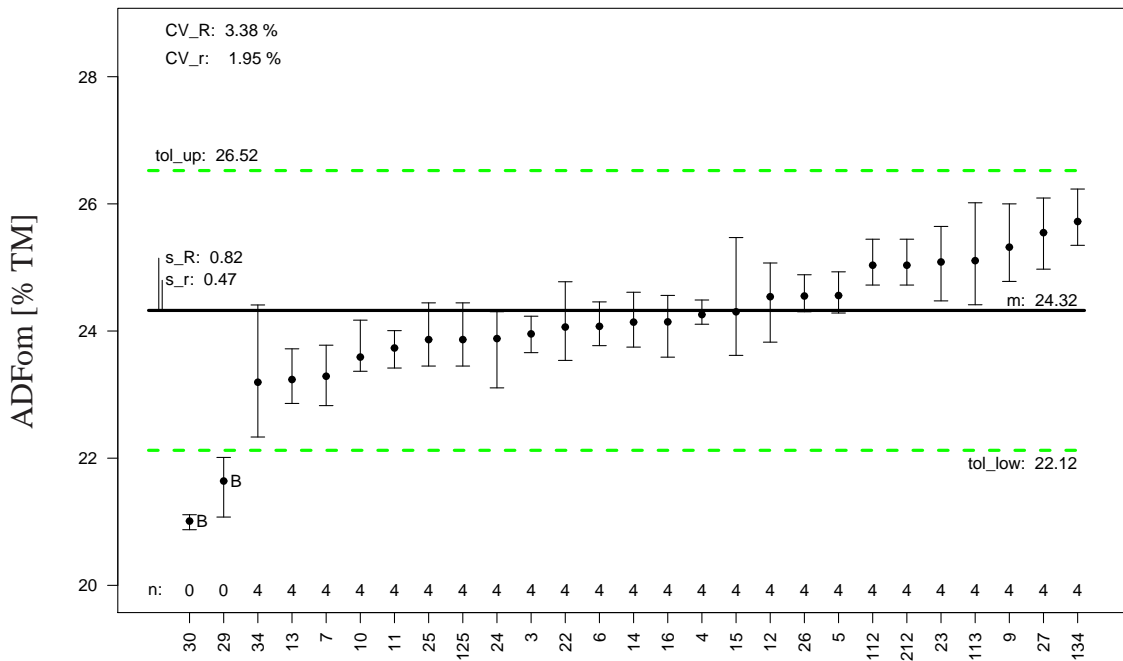
¹ siehe Anmerkung zu HORRAT im Vorspann, S. 8
remark to HORRAT in preamble, page 8

ADFom

Proben. Die grünen, gestrichelten Linien markieren die Toleranzgrenzen ($2 \cdot s_R$) für die Analysen zu der Probe, die falls vorhanden mit der Vergleichsstandardabweichung der Methode nach Norm, sonst mit der Vergleichsstandardabweichung aus diesem Ringversuch berechnet wurden.

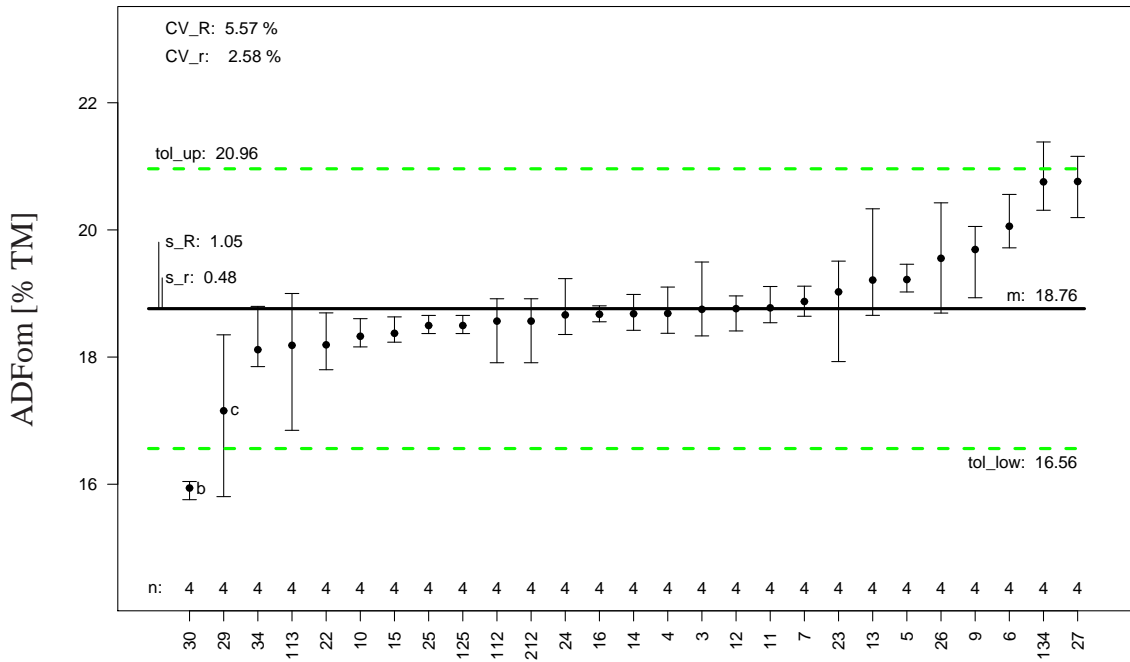
The solid, black, horizontal lines are the mean of analyses from this proficiency test for a sample. If present the black, dashed lines mark the "true value" of the samples. The green, dashed lines mark the tolerance limits for the analyses for the sample calculated either with the reproducibility from the method description, if given, else with the reproducibility from this proficiency trial ($2 \cdot s_R$).

Probe/Sample 2201:

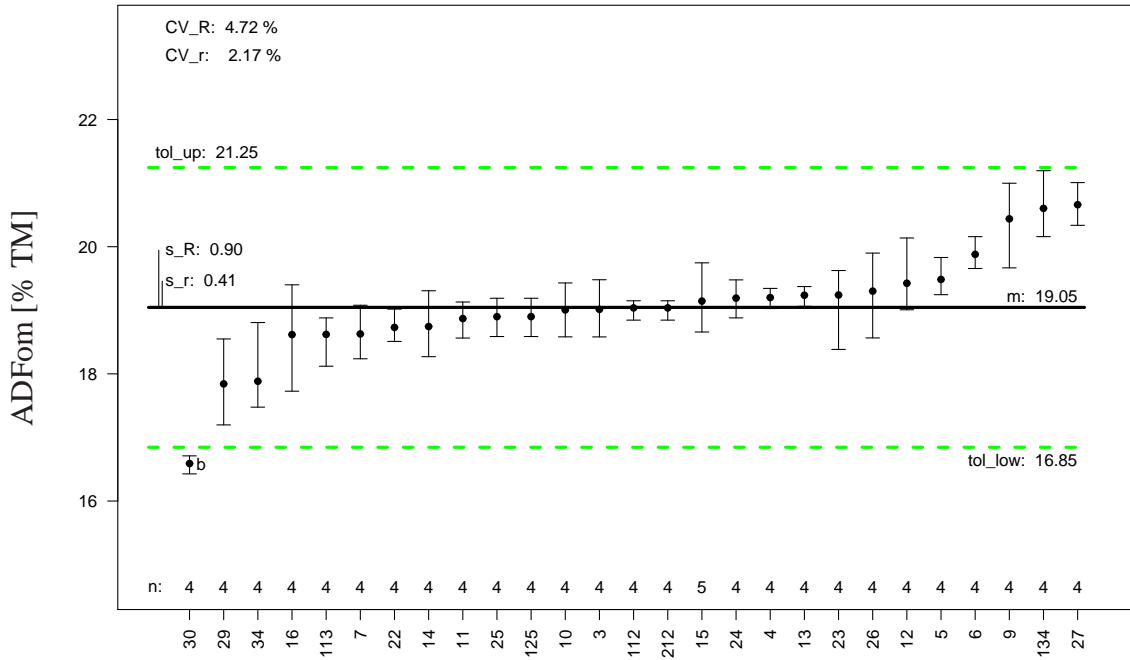


ADFom

Probe/Sample 2202:

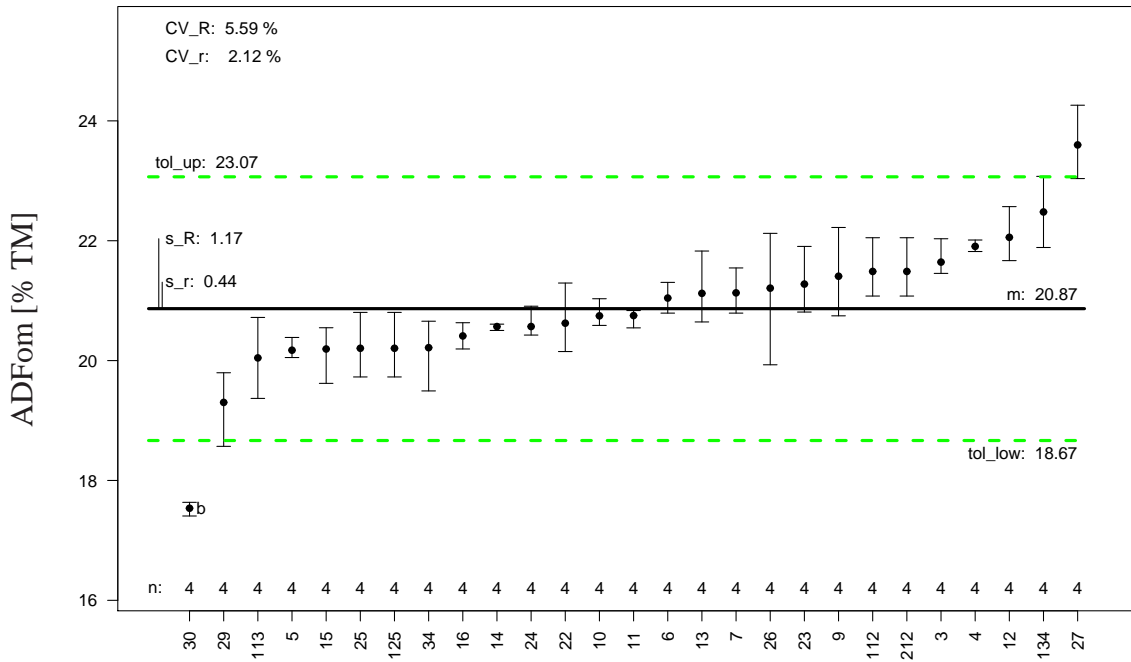


Probe/Sample 2203:

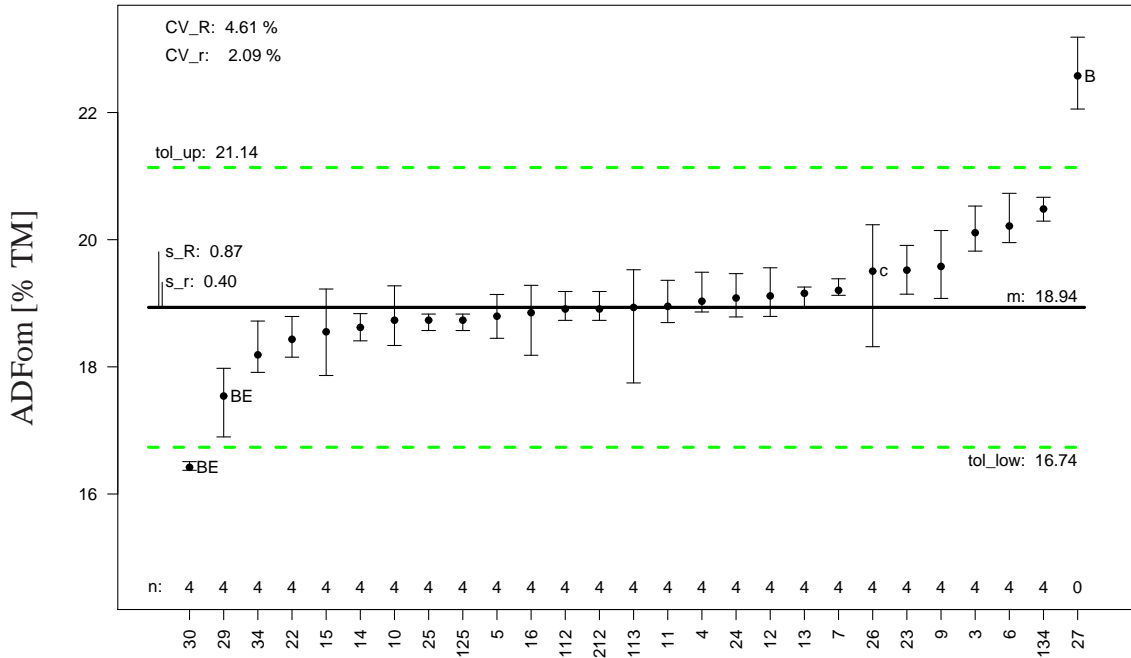


ADFom

Probe/Sample 2204:

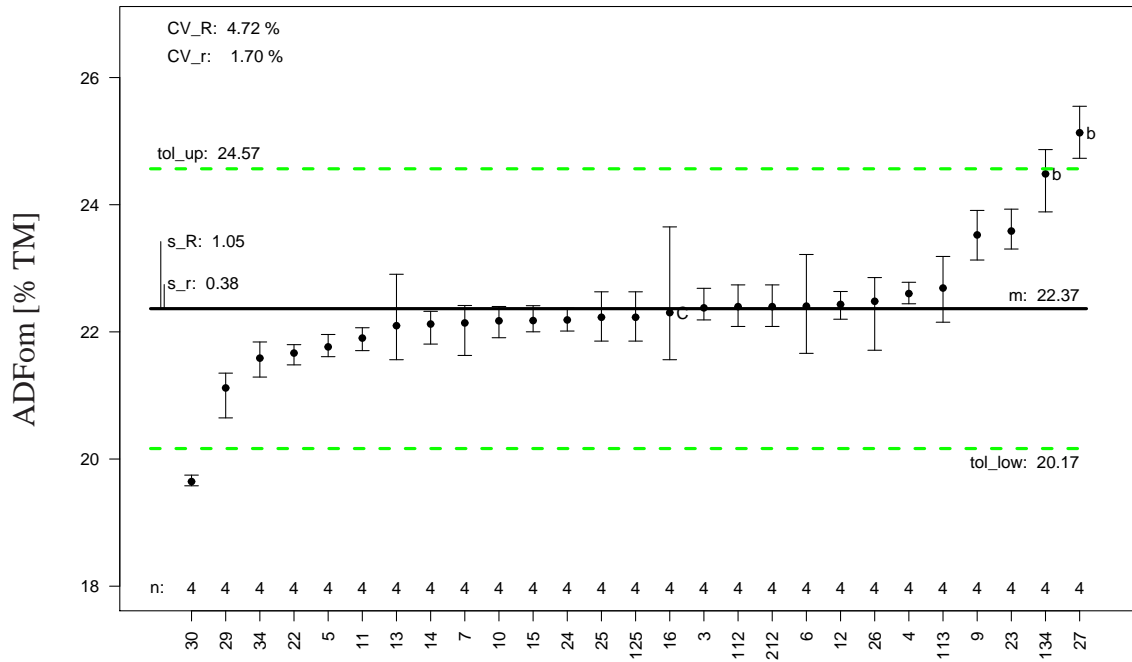


Probe/Sample 2205:



ADFom

Probe/Sample 2206:



ADL

5.9 Merkmal / Constituent: ADL

Einheit / Unit: % TM

5.9.1 Anmerkungen / Annotations

ADL

5.9.2 Methodenbeschreibung / Method Description

Probe/Sample	2201	2202	2203	2204	2205	2206
n	108	108	109	108	108	108
p	27	27	27	27	27	27
n ₁	108	104	105	104	104	104
p ₁	27	26	26	26	26	26
m	2.26	1.90	1.68	2.01	1.76	2.17
s _r	0.06	0.06	0.06	0.06	0.06	0.06
CV _r	2.61	3.27	3.56	2.95	3.35	2.65
r	0.17	0.18	0.17	0.17	0.17	0.16
s _R	0.25	0.20	0.18	0.19	0.19	0.18
CV _R	11.01	10.65	10.93	9.42	11.06	8.29
R	0.70	0.57	0.52	0.54	0.55	0.51
HORRAT ¹	3.11	2.93	2.95	2.62	3.01	2.33

¹ siehe Anmerkung zu HORRAT im Vorspann, S. 8
remark to HORRAT in preamble, page 8

ADL

Ausreißer bei der Methodenbeschreibung nach ISO 5725 / Outlier in method description according to ISO 5725

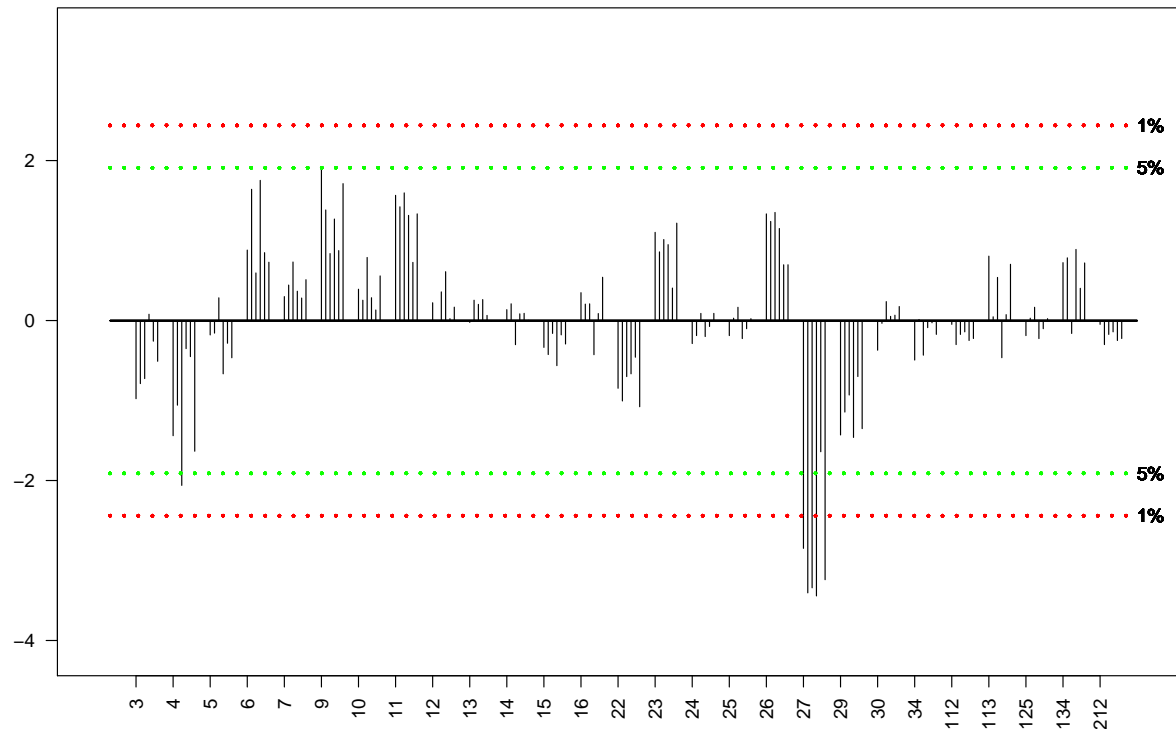
In der folgenden Tabelle wird für jedes Labor angegeben, bei welchen Proben es als Ausreißer aufgefallen ist.

In the following table each lab is marked which was flagged as an outlier for a sample.

Labor	2201	2202	2203	2204	2205	2206
4			b			
27		B	B	B	B	B
29					C	C

ADL

Labormittelwertvergleich nach Mandels h / Lab mean comparison to Mandel's h



Oberste und unterste Linie 1%-Signifikanz-Niveau, mittlere Linien 5%-Signifikanz-Niveau.

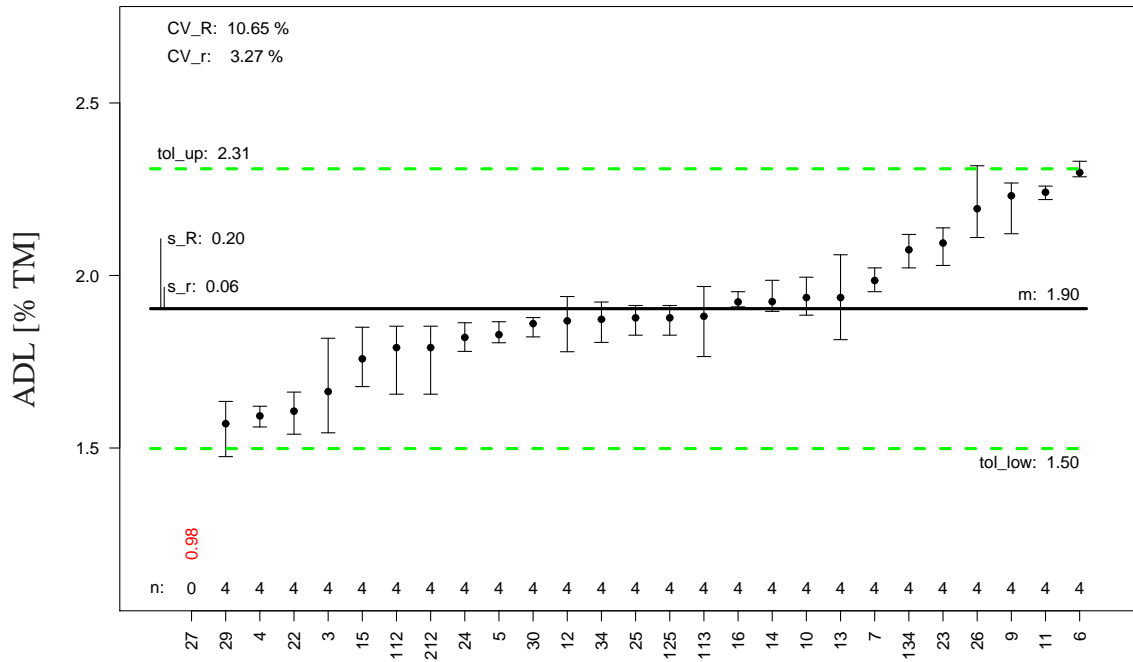
Waagrecht finden sich die Labore mit jeweils einem Balken für jede Probe. Balken nach unten sind negative Abweichungen des Messwertes dieser Proben, Balken nach oben positive Abweichungen. Die Länge der Balken ist normiert, so dass Proben mit unterschiedlichen Gehalten verglichen werden können.

Upper and lower lines 1% significance level, intermediate lines 5% significance level.

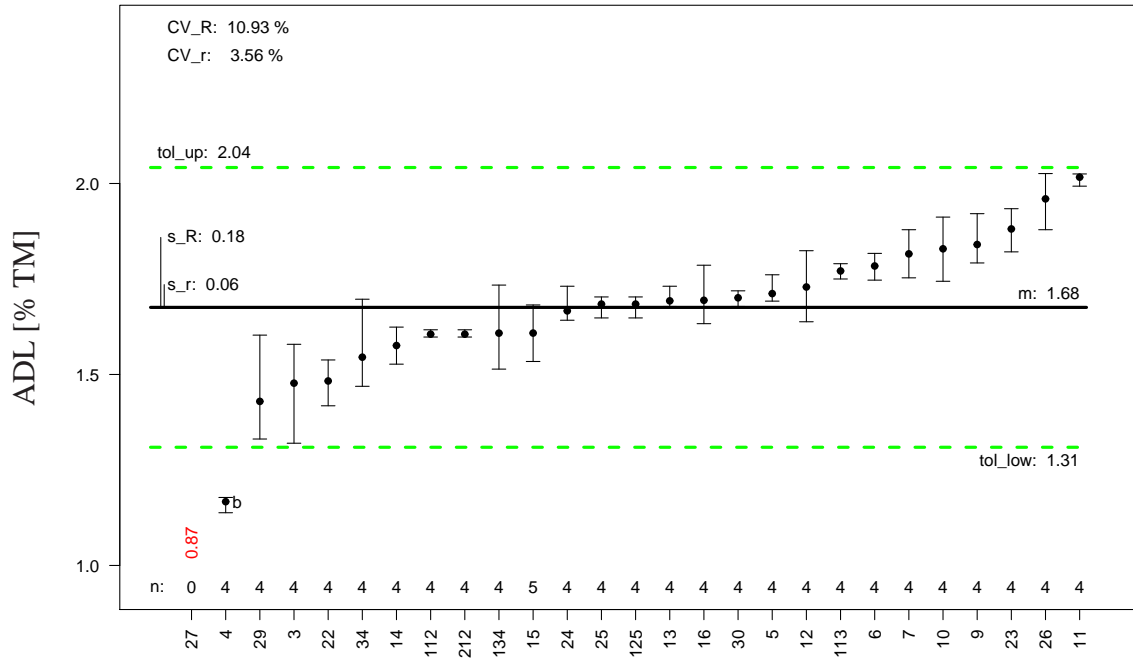
The labs are ordered horizontally with a bar for each sample. Bars oriented downwards represent negative deviations for a sample, bar oriented upwards positive deviations. The bar lengths are normed, to allow to compare samples with different concentrations.

ADL

Probe/Sample 2202:

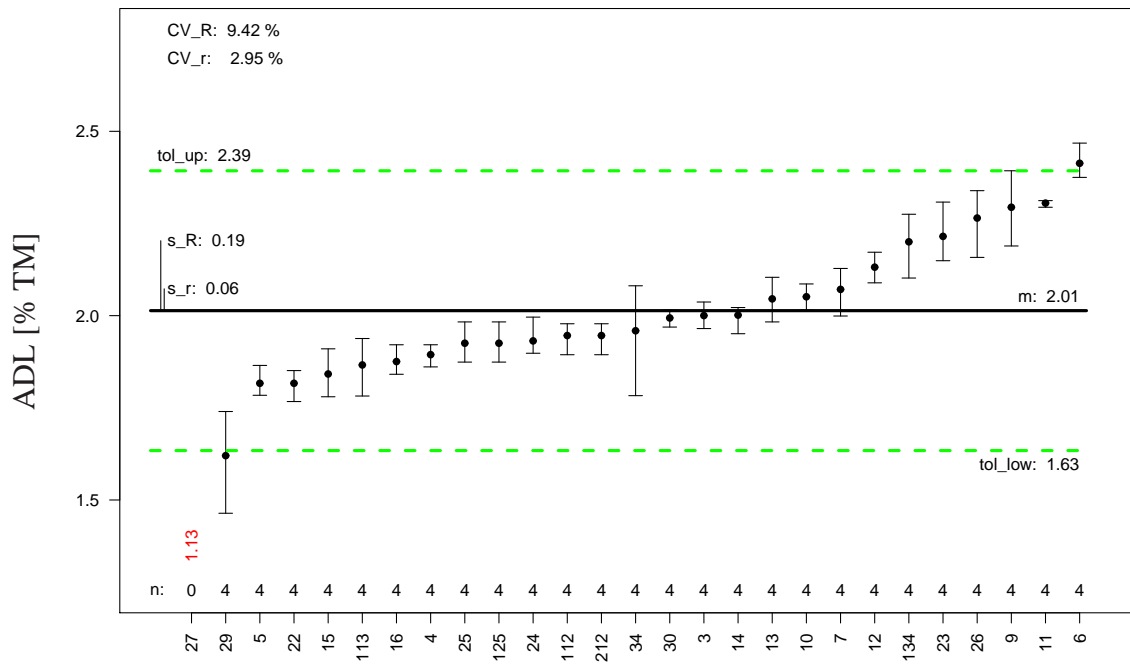


Probe/Sample 2203:

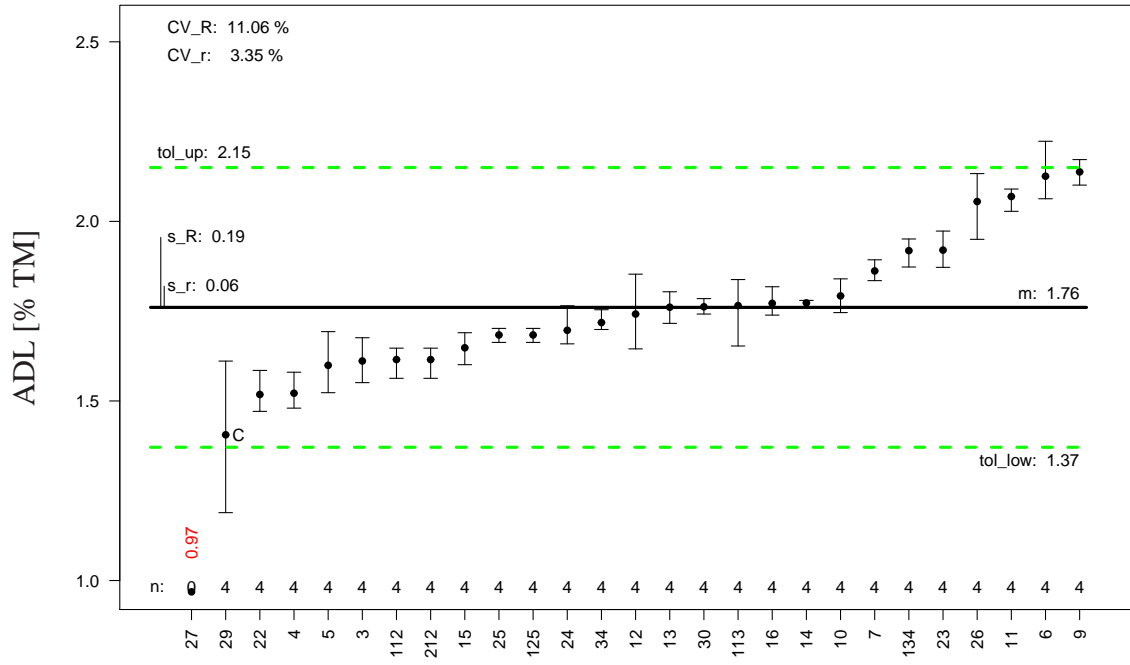


ADL

Probe/Sample 2204:

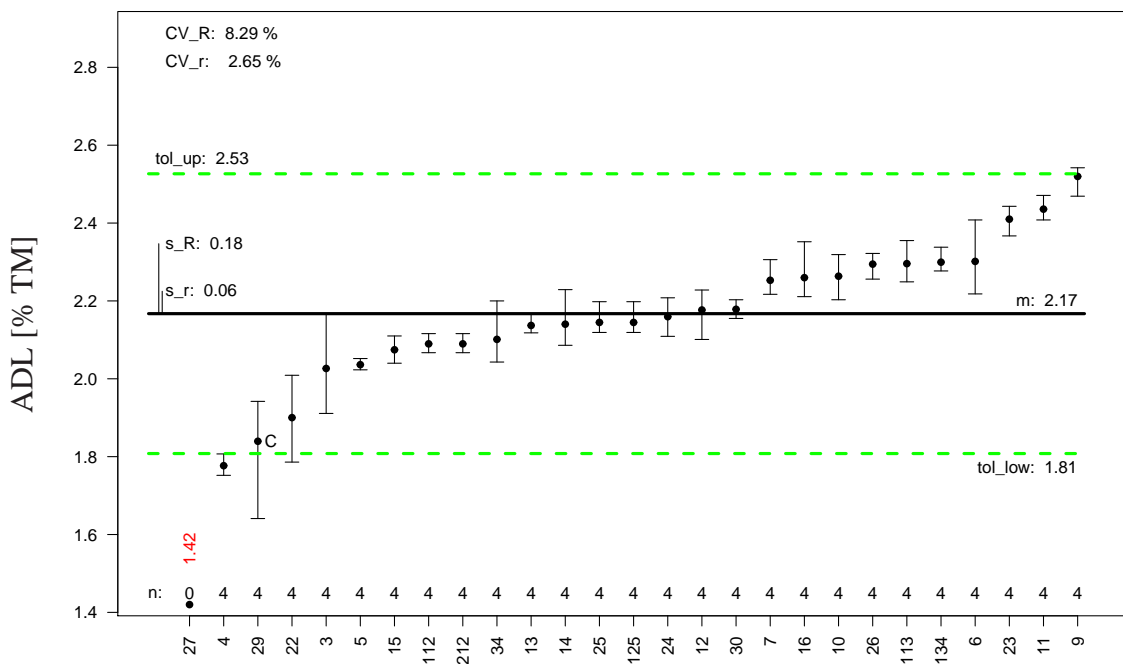


Probe/Sample 2205:



ADL

Probe/Sample 2206:



NDF

5.10 Merkmal / Constituent: NDF

Einheit / Unit: % TM

5.10.1 Anmerkungen / Annotations

NDF

5.10.2 Methodenbeschreibung / Method Description

Probe/Sample	2201	2202	2203	2204	2205	2206	VDLUFA ASR
n	108	108	109	108	108	108	
p	27	27	27	27	27	27	
n ₁	108	108	109	108	108	108	
p ₁	27	27	27	27	27	27	
m	43.24	35.90	36.20	39.29	37.07	41.19	
s _r	0.65	0.72	0.61	0.69	0.61	0.57	
CV _r	1.50	2.00	1.68	1.75	1.65	1.38	
r	1.83	2.03	1.72	1.94	1.73	1.61	
s _R	1.38	1.09	1.06	1.37	1.27	1.22	1.75
CV _R	3.19	3.03	2.94	3.48	3.42	2.97	
R	3.91	3.08	3.01	3.87	3.59	3.47	4.95
HORRAT ¹	1.41	1.30	1.26	1.51	1.47	1.30	

¹ siehe Anmerkung zu HORRAT im Vorspann, S. 8
remark to HORRAT in preamble, page 8

NDF

Ausreißer bei der Methodenbeschreibung nach ISO 5725 / Outlier in method description according to ISO 5725

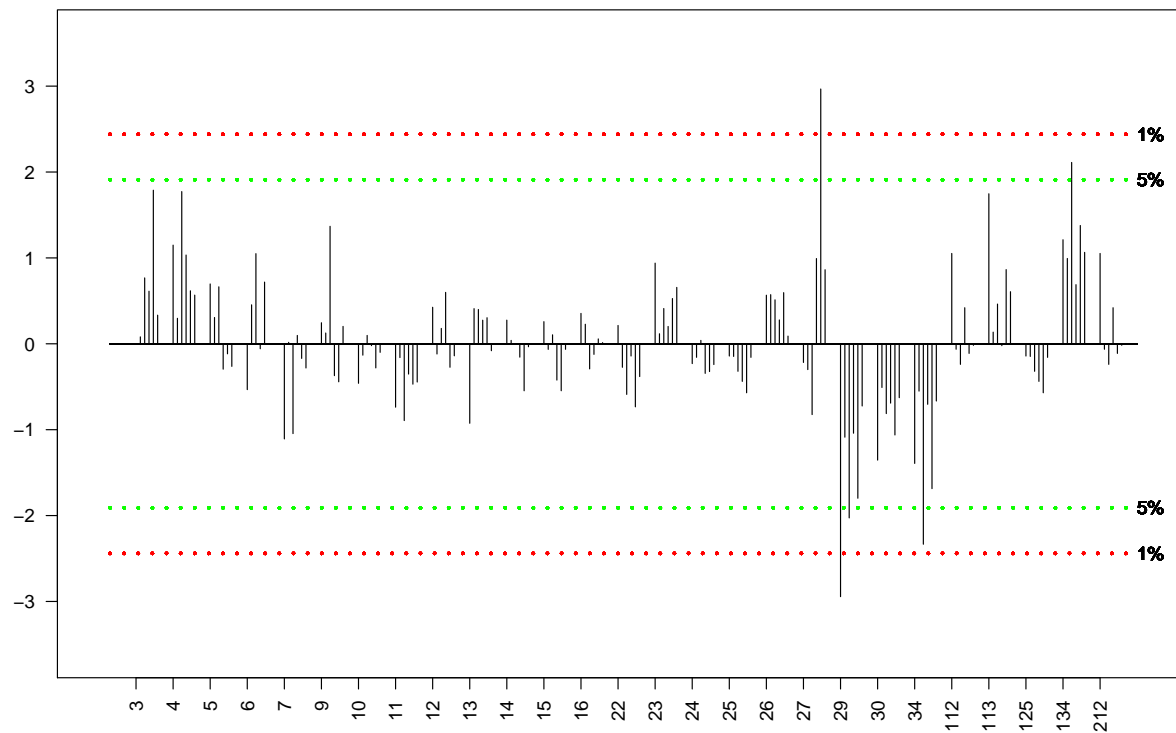
In der folgenden Tabelle wird für jedes Labor angegeben, bei welchen Proben es als Ausreißer aufgefallen ist.

In the following table each lab is marked which was flagged as an outlier for a sample.

Labor	2201	2202	2203	2204	2205	2206
16						C
26					c	
27					b	
29	b	C		C		

NDF

Labormittelwertvergleich nach Mandels h / Lab mean comparison to Mandel's h



Oberste und unterste Linie 1%-Signifikanz-Niveau, mittlere Linien 5%-Signifikanz-Niveau.

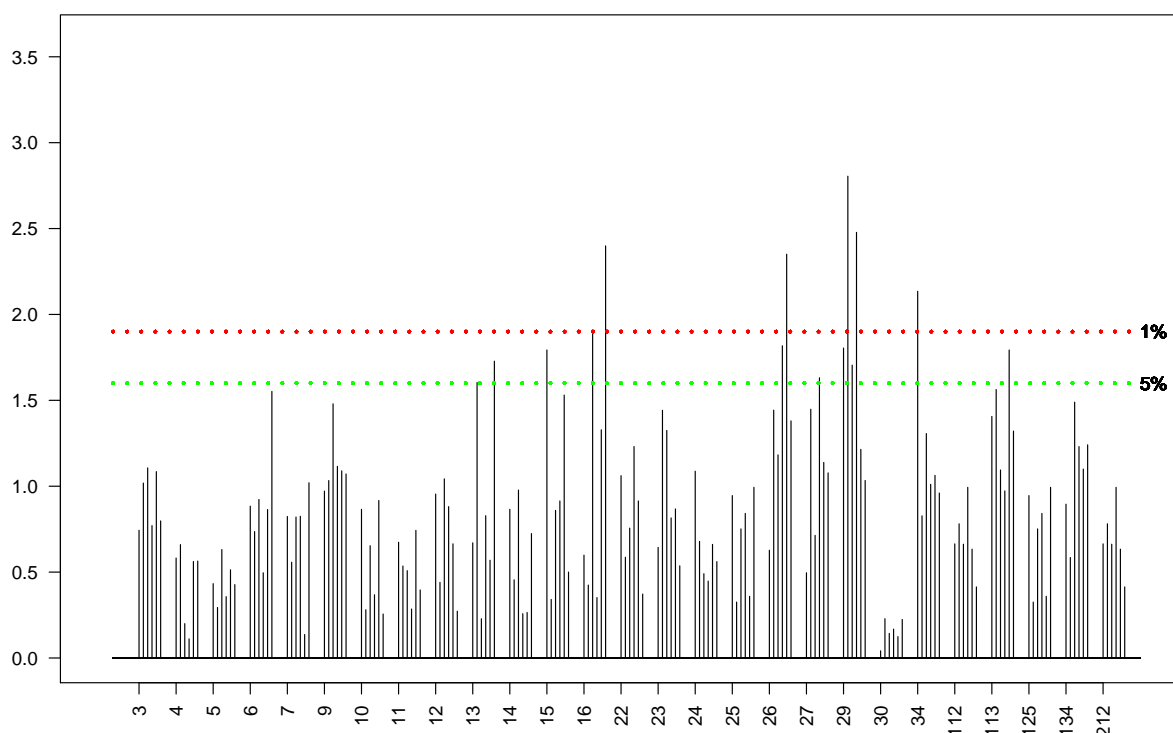
Waagrecht finden sich die Labore mit jeweils einem Balken für jede Probe. Balken nach unten sind negative Abweichungen des Messwertes dieser Proben, Balken nach oben positive Abweichungen. Die Länge der Balken ist normiert, so dass Proben mit unterschiedlichen Gehalten verglichen werden können.

Upper and lower lines 1% significance level, intermediate lines 5% significance level.

The labs are ordered horizontally with a bar for each sample. Bars oriented downwards represent negative deviations for a sample, bar oriented upwards positive deviations. The bar lengths are normed, to allow to compare samples with different concentrations.

NDF

**Vergleich der laborinternen Streuung nach Mandels k / Lab
internal repeatability comparison Mandel's k**



Obere Linie 1%-Signifikanz-Niveau, untere Linie 5%-Signifikanz-Niveau.

Waagrecht finden sich die Labore mit jeweils einem Balken für jede Probe. Die Balken für die einzelnen Proben beginnen immer bei der Markierung der ganzen Zahl, d.h. z.B. für Labor 5 bei 5.0.

Die Balkenlänge ist die normierte laborinterne Streuung für die Wiederholungen dieser Probe. Lange Balken kennzeichnen eine große laborinterne Streuung.

Upper line 1% significance level, lower line 5% significance level.

The labs are ordered horizontally with a bar for each sample. The bar for the first sample from one lab always start at the whole number, i.e. for lab 5 at 5.0.

Bar lengths represent the lab internal repeatability. Long bars mark large deviations between repeats inside that laboratory.

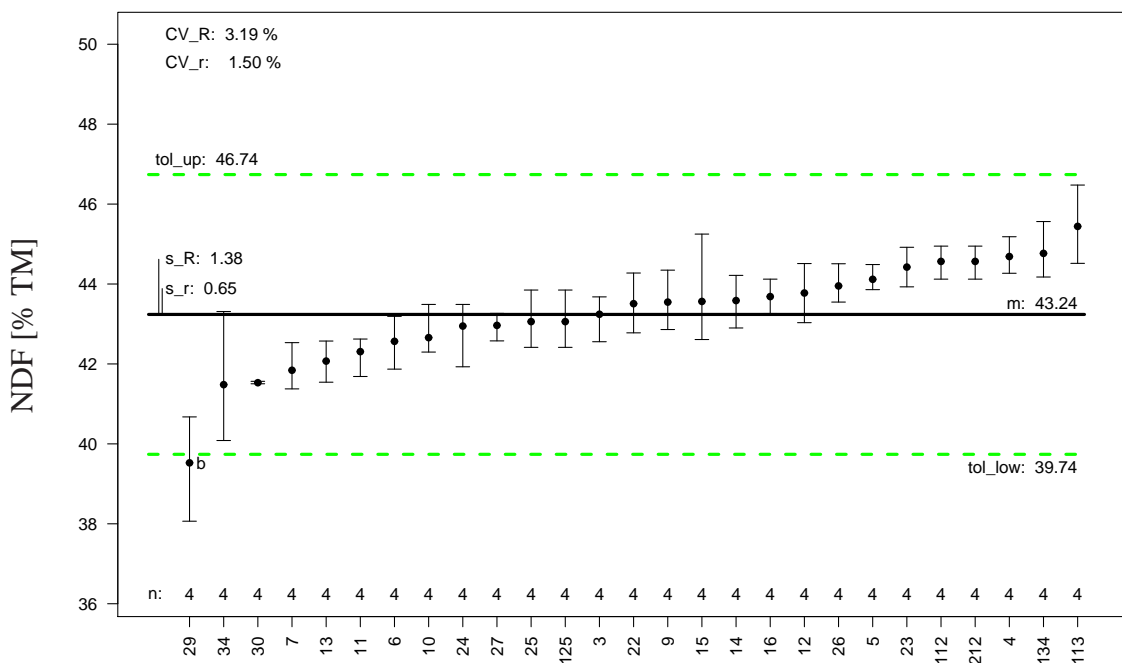
Einzelproben / Single Samples Die durchgezogene, schwarze, waagerechte Linien kennzeichnen den Mittelwert der Analysen für die Proben in diesem Ringversuch. Falls vorhanden, markieren die schwarzen, gestrichelten Linien den "wahren Wert" für die

NDF

Proben. Die grünen, gestrichelten Linien markieren die Toleranz-Grenzen ($2 * s_R$) für die Analysen zu der Probe, die falls vorhanden mit der Vergleichsstandardabweichung der Methode nach Norm, sonst mit der Vergleichsstandardabweichung aus diesem Ringversuch berechnet wurden.

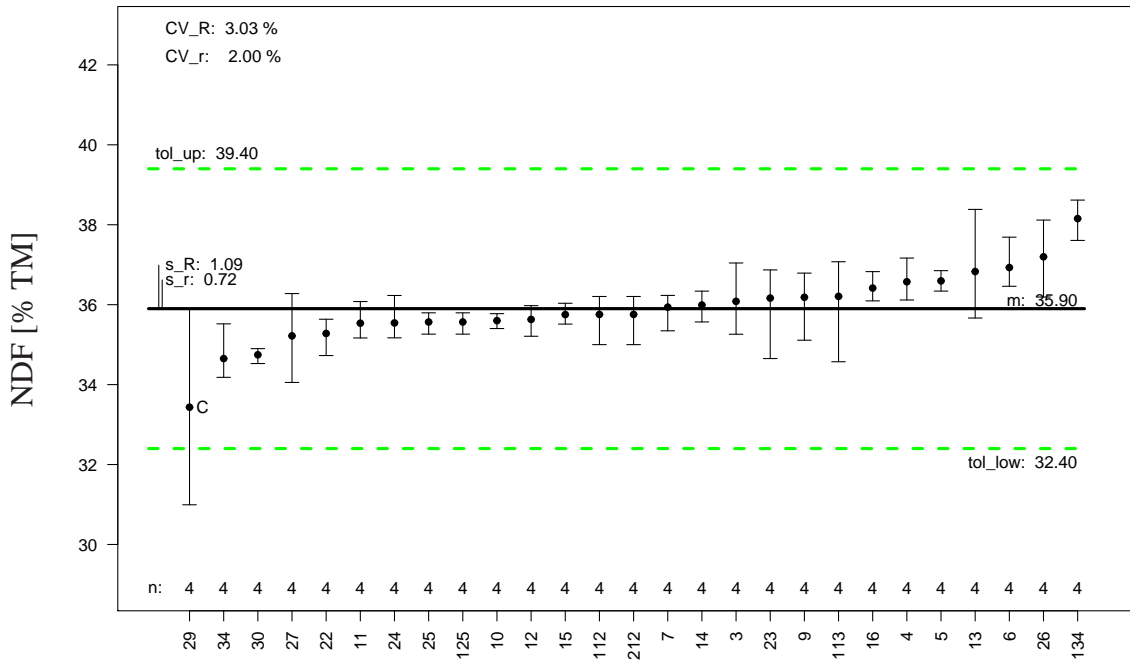
*The solid, black, horizontal lines are the mean of analyses from this proficiency test for a sample. If present the black, dashed lines mark the "true value" of the samples. The green, dashed lines mark the tolerance limits for the analyses for the sample calculated either with the reproducibility from the method description, if given, else with the reproducibility from this proficiency trial ($2 * s_R$).*

Probe/Sample 2201:

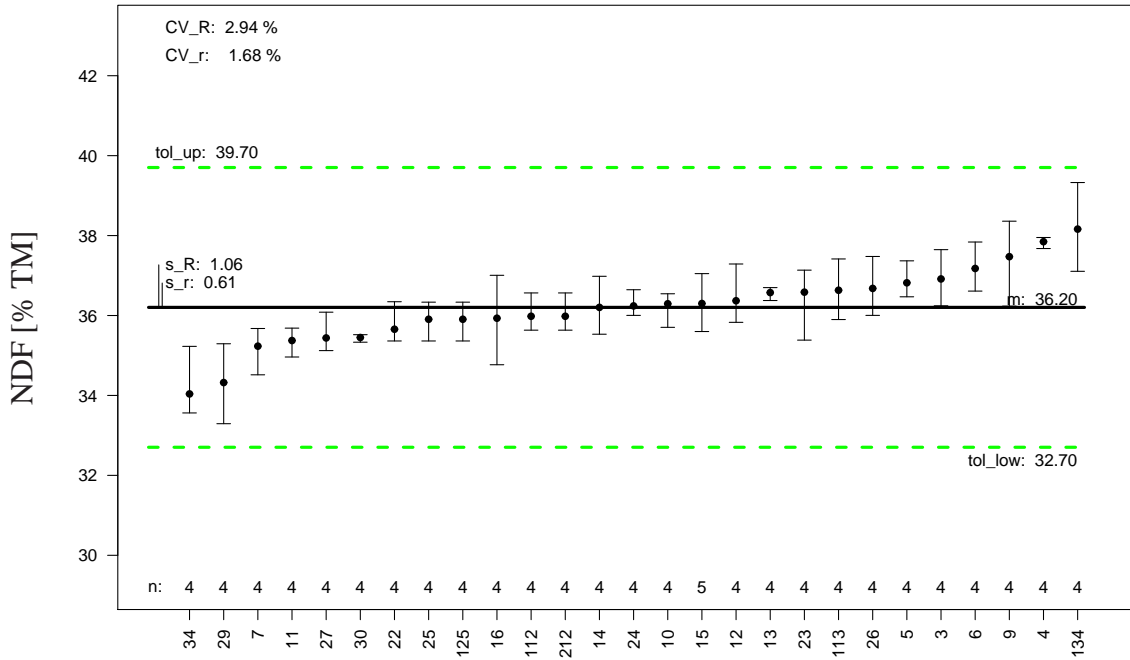


NDF

Probe/Sample 2202:

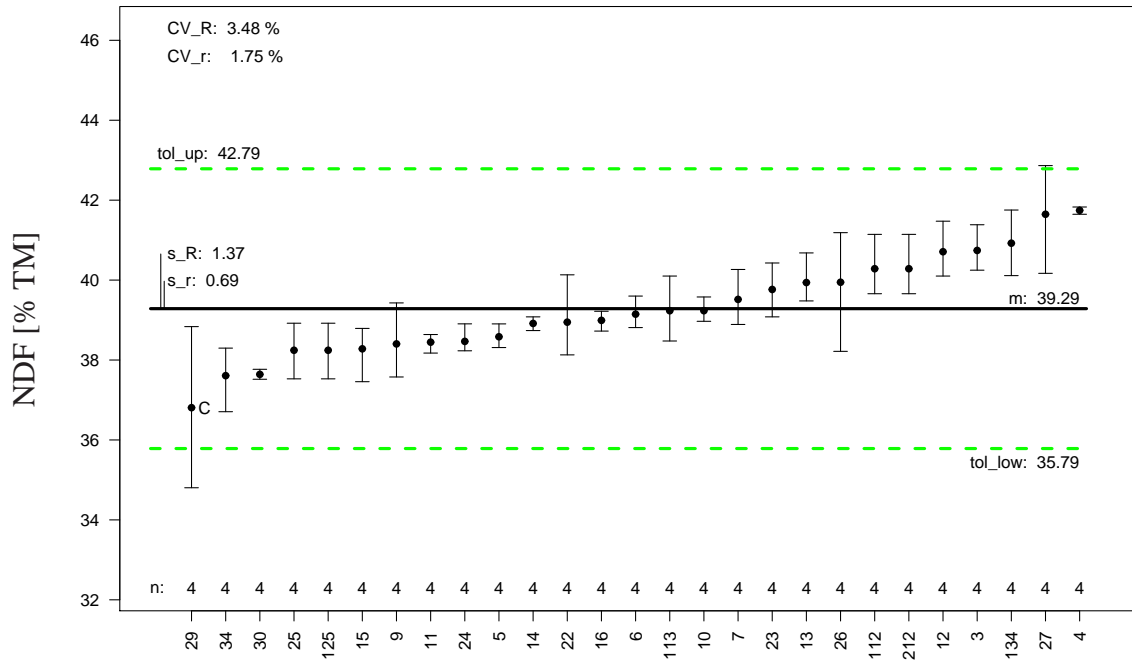


Probe/Sample 2203:

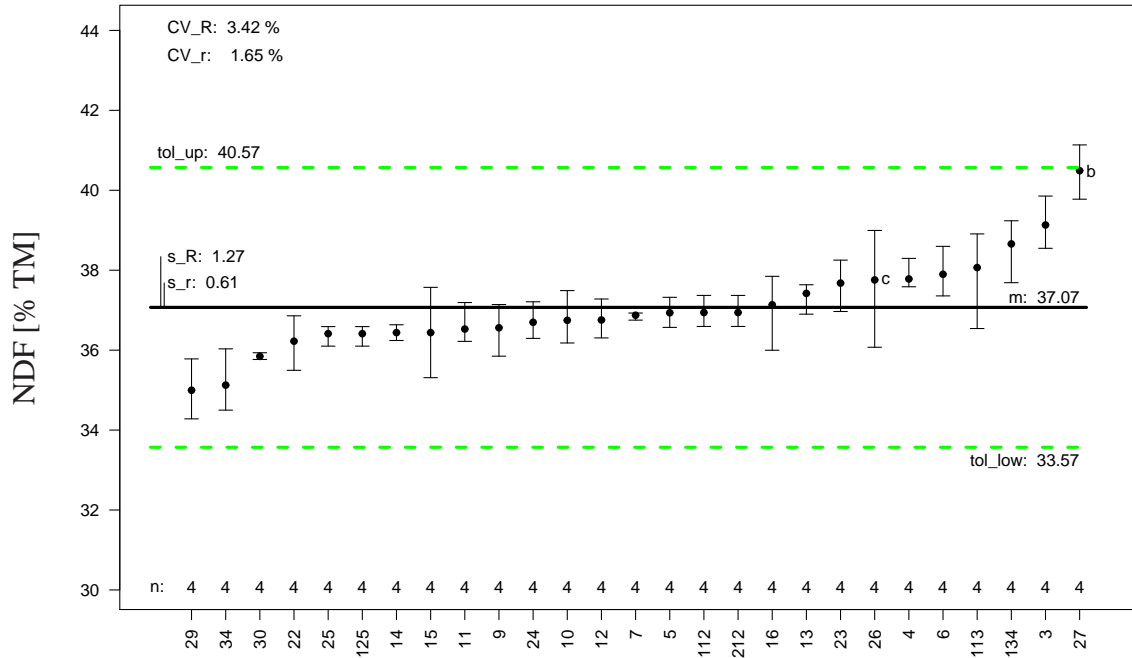


NDF

Probe/Sample 2204:

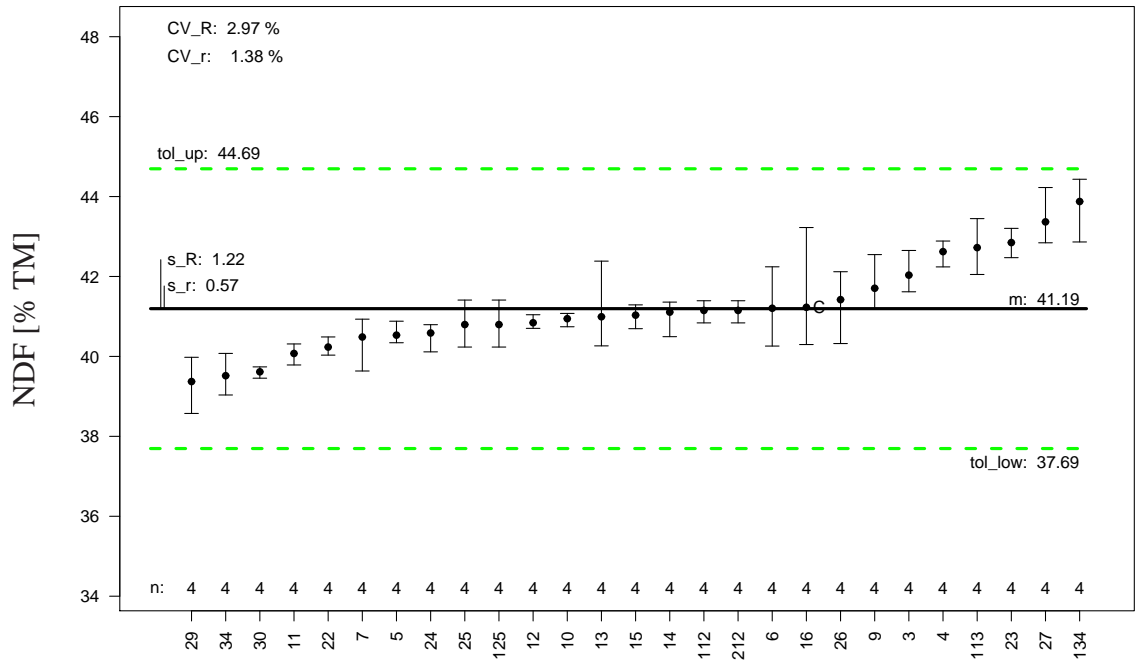


Probe/Sample 2205:



NDF

Probe/Sample 2206:



ADF

5.11 Merkmal / Constituent: ADF

Einheit / Unit: % TM

5.11.1 Anmerkungen / Annotations

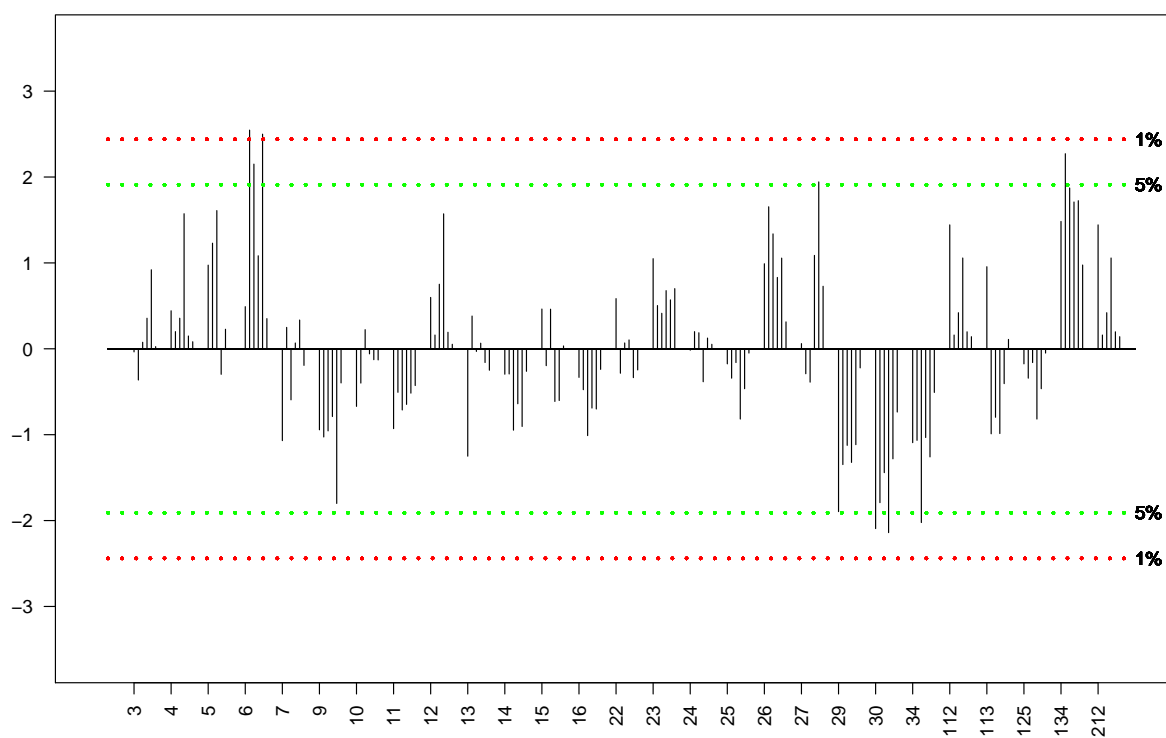
5.11.2 Methodenbeschreibung / Method Description

Probe/Sample	2201	2202	2203	2204	2205	2206	VDLUFA ASR
n	108	108	109	108	108	108	
p	27	27	27	27	27	27	
n ₁	108	108	109	108	108	108	
p ₁	27	27	27	27	27	27	
m	25.25	19.77	19.56	21.66	20.11	23.38	
s _r	0.50	0.47	0.41	0.50	0.44	0.42	
CV _r	1.97	2.36	2.08	2.31	2.17	1.81	
r	1.41	1.32	1.15	1.41	1.24	1.20	
s _R	0.96	0.83	0.72	1.00	0.87	0.80	1.10
CV _R	3.80	4.18	3.66	4.63	4.32	3.43	
R	2.72	2.34	2.03	2.84	2.46	2.27	3.11
HORRAT ¹	1.54	1.64	1.43	1.84	1.70	1.38	

¹ siehe Anmerkung zu HORRAT im Vorspann, S. 8
remark to HORRAT in preamble, page 8

ADF

Labormittelwertvergleich nach Mandels h / Lab mean comparison to Mandel's h



Oberste und unterste Linie 1%-Signifikanz-Niveau, mittlere Linien 5%-Signifikanz-Niveau.

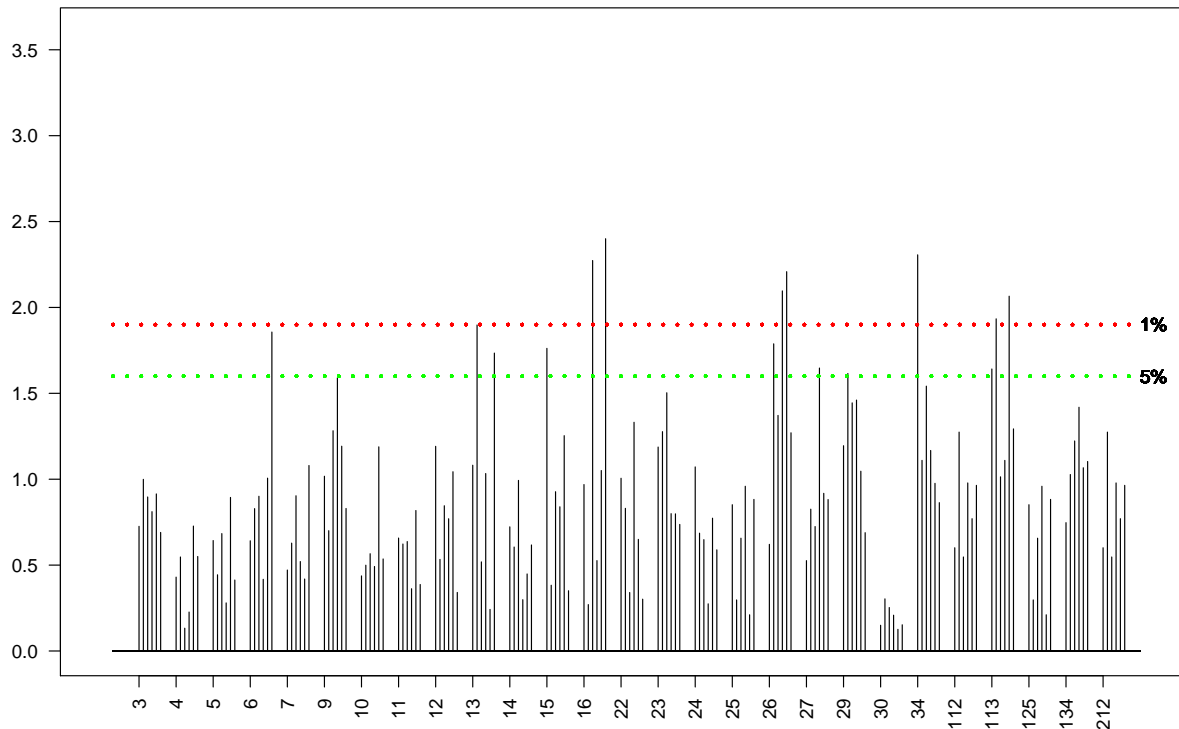
Waagrecht finden sich die Labore mit jeweils einem Balken für jede Probe. Balken nach unten sind negative Abweichungen des Messwertes dieser Proben, Balken nach oben positive Abweichungen. Die Länge der Balken ist normiert, so dass Proben mit unterschiedlichen Gehalten verglichen werden können.

Upper and lower lines 1% significance level, intermediate lines 5% significance level.

The labs are ordered horizontally with a bar for each sample. Bars oriented downwards represent negative deviations for a sample, bar oriented upwards positive deviations. The bar lengths are normed, to allow to compare samples with different concentrations.

ADF

Vergleich der laborinternen Streuung nach Mandels k / Lab internal repeatability comparison Mandel's k



Obere Linie 1%-Signifikanz-Niveau, untere Linie 5%-Signifikanz-Niveau.

Waagrecht finden sich die Labore mit jeweils einem Balken für jede Probe. Die Balken für die einzelnen Proben beginnen immer bei der Markierung der ganzen Zahl, d.h. z.B. für Labor 5 bei 5.0.

Die Balkenlänge ist die normierte laborinterne Streuung für die Wiederholungen dieser Probe. Lange Balken kennzeichnen eine große laborinterne Streuung.

Upper line 1% significance level, lower line 5% significance level.

The labs are ordered horizontally with a bar for each sample. The bar for the first sample from one lab always start at the whole number, i.e. for lab 5 at 5.0.

Bar lengths represent the lab internal repeatability. Long bars mark large deviations between repeats inside that laboratory.

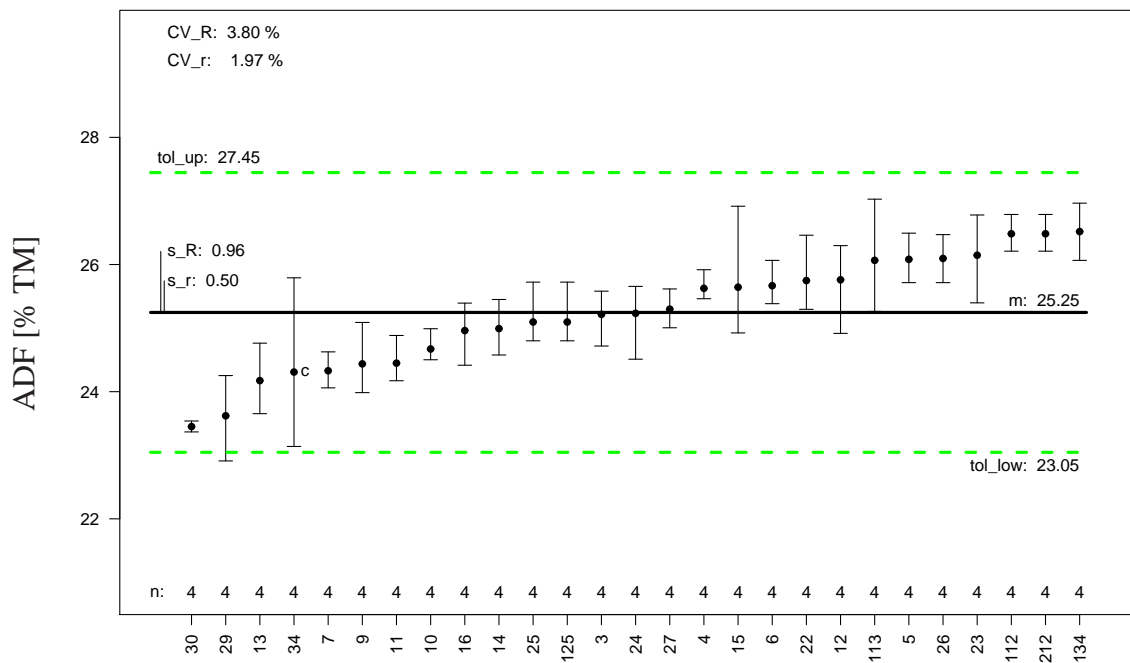
Einzelproben / Single Samples Die durchgezogene, schwarze, waagerechte Linien kennzeichnen den Mittelwert der Analysen für die Proben in diesem Ringversuch. Falls vorhanden, markieren die schwarzen, gestrichelten Linien den "wahren Wert" für die

ADF

Proben. Die grünen, gestrichelten Linien markieren die Toleranzgrenzen ($2 \cdot s_R$) für die Analysen zu der Probe, die falls vorhanden mit der Vergleichsstandardabweichung der Methode nach Norm, sonst mit der Vergleichsstandardabweichung aus diesem Ringversuch berechnet wurden.

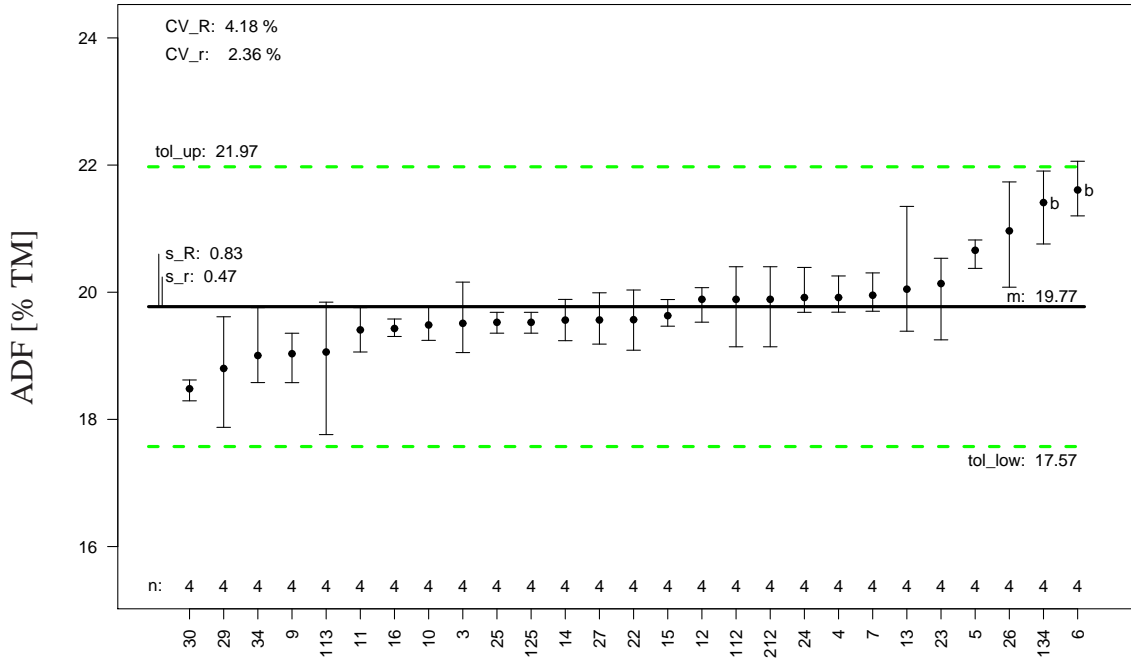
The solid, black, horizontal lines are the mean of analyses for this proficiency test for a sample. If present the black, dashed lines mark the "true value" of the samples. The green, dashed lines mark the tolerance limits for the analyses for the sample calculated either with the reproducibility from the method description, if given, else with the reproducibility from this proficiency trial ($2 \cdot s_R$).

Probe/Sample 2201:

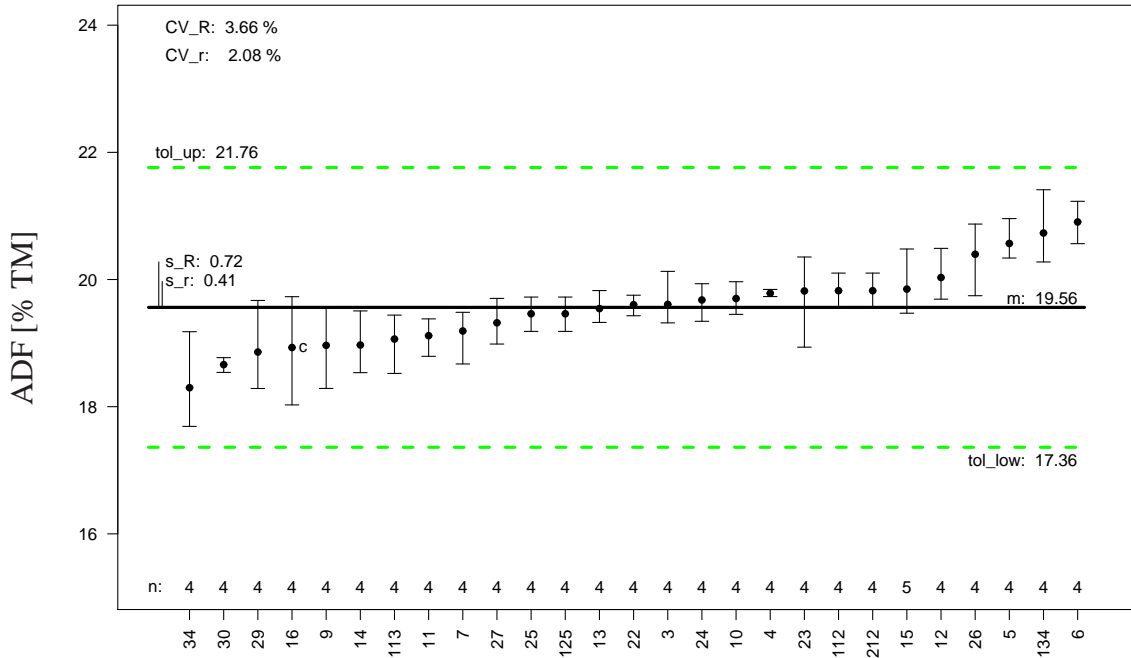


ADF

Probe/Sample 2202:

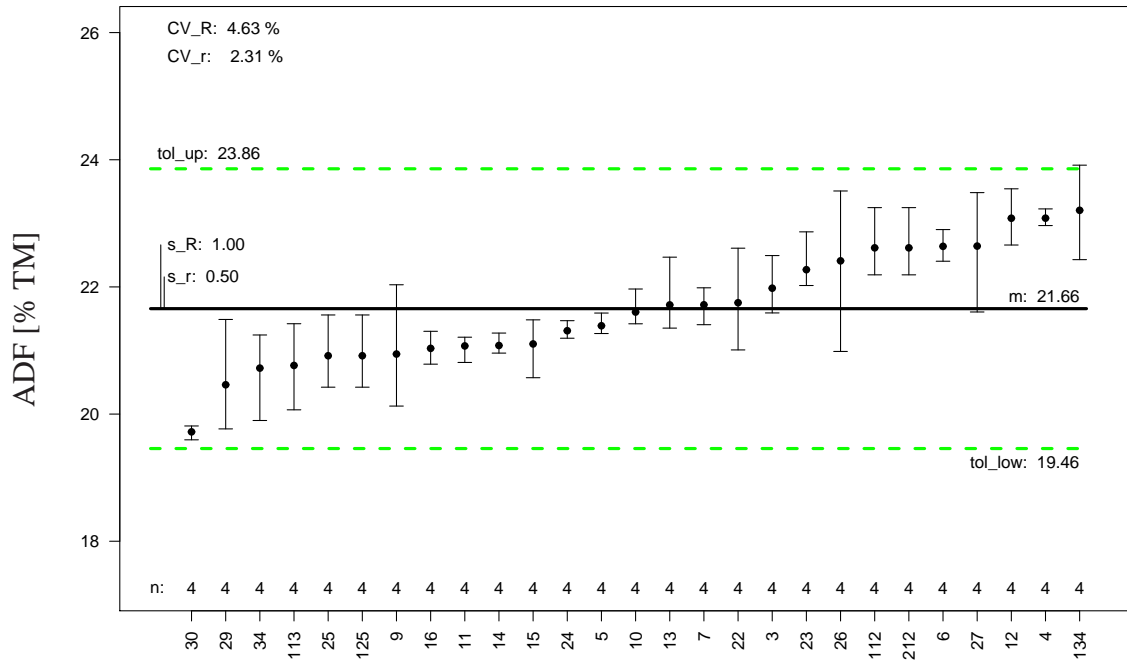


Probe/Sample 2203:

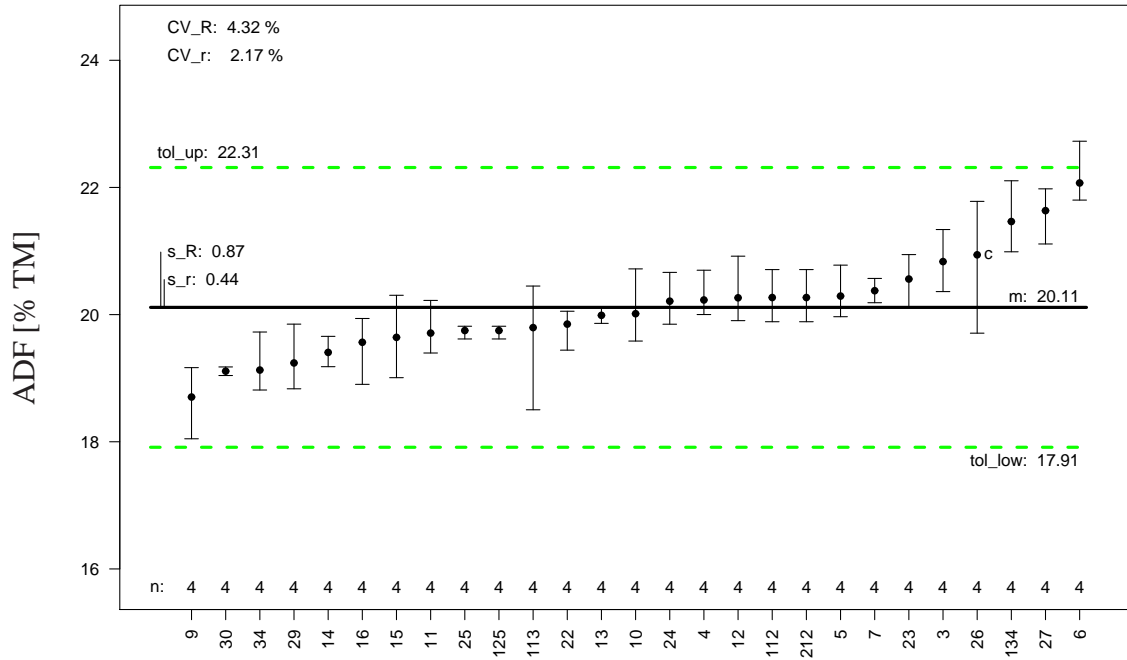


ADF

Probe/Sample 2204:

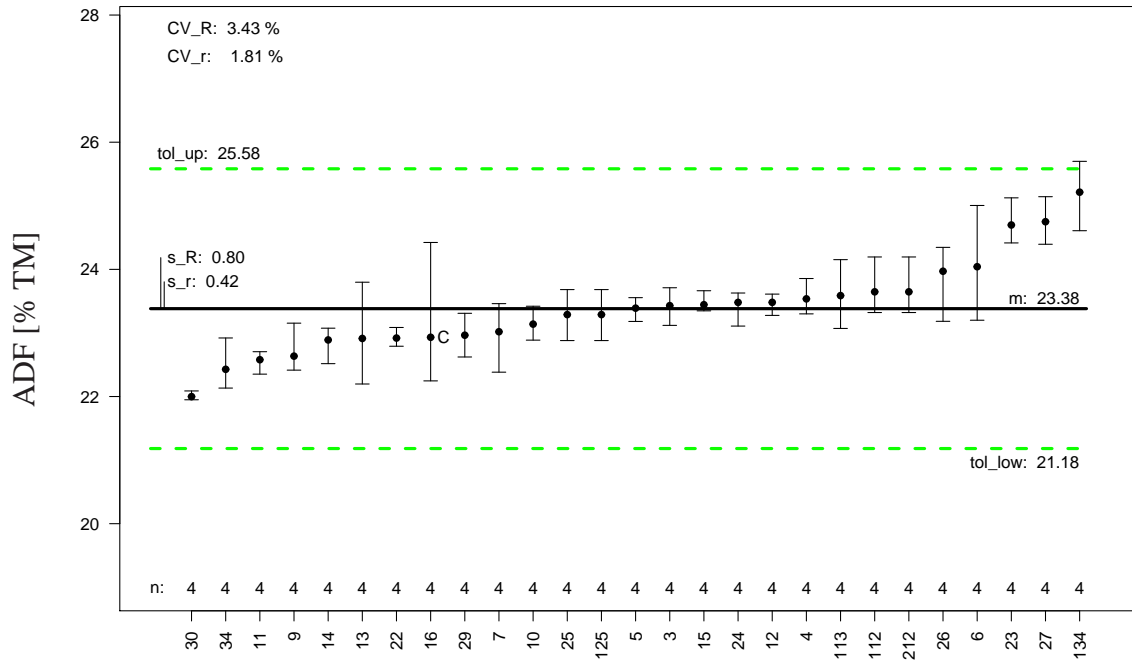


Probe/Sample 2205:



ADF

Probe/Sample 2206:



Elos / Cellulase

5.12 Merkmal / Constituent: Elos / Cellulase

Einheit / Unit: % TM

5.12.1 Anmerkungen / Annotations

5.12.2 Methodenbeschreibung / Method Description

Probe/Sample	2201	2202	2203	2204	2205	2206	VDLUFASR
n	108	108	109	108	108	108	
p	27	27	27	27	27	27	
n ₁	108	104	105	108	104	108	
p ₁	27	26	26	27	26	27	
m	67.79	74.05	74.45	71.86	74.32	69.93	
s _r	0.66	0.71	0.59	0.70	0.59	0.63	
CV _r	0.97	0.95	0.80	0.98	0.80	0.89	
r	1.86	2.00	1.68	1.99	1.67	1.77	
s _R	2.00	1.38	1.28	1.88	1.32	1.81	1.75
CV _R	2.94	1.87	1.72	2.62	1.77	2.58	
R	5.65	3.91	3.63	5.33	3.73	5.11	4.95
HORRAT ¹	1.39	0.89	0.82	1.25	0.85	1.22	

¹ siehe Anmerkung zu HORRAT im Vorspann, S. 8
remark to HORRAT in preamble, page 8

Elos / Cellulase

Ausreißer bei der Methodenbeschreibung nach ISO 5725 / Outlier in method description according to ISO 5725

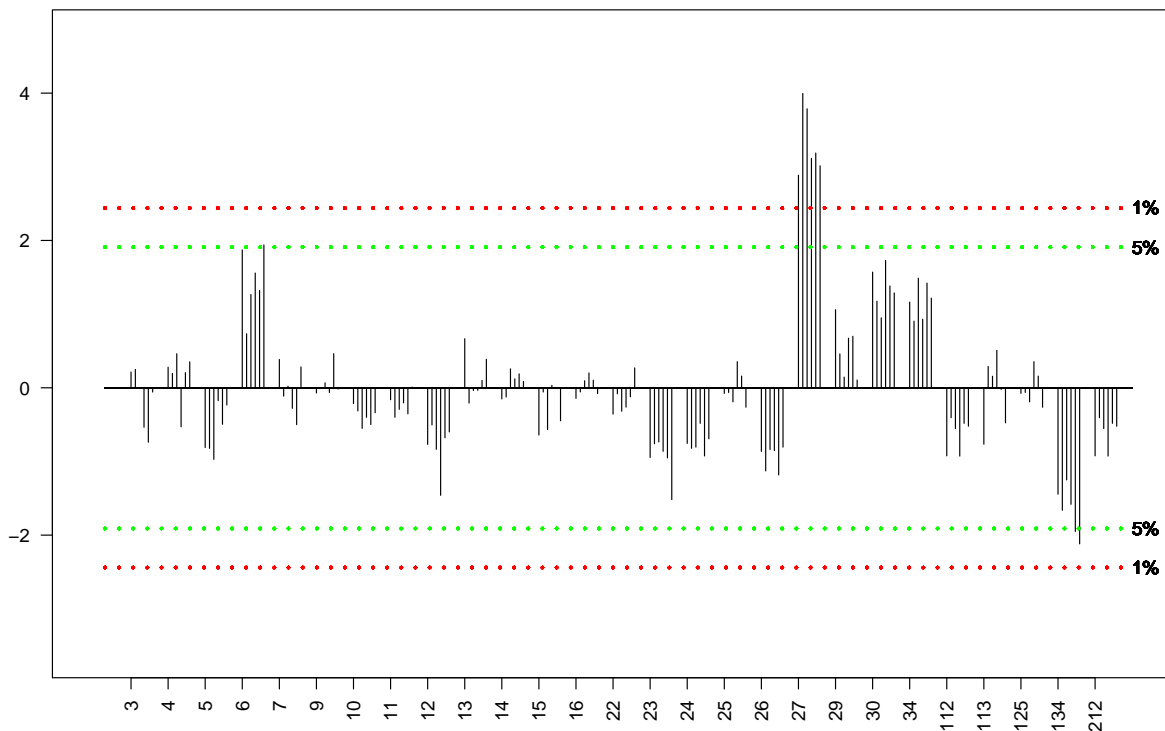
In der folgenden Tabelle wird für jedes Labor angegeben, bei welchen Proben es als Ausreißer aufgefallen ist.

In the following table each lab is marked which was flagged as an outlier for a sample.

Labor	2201	2202	2203	2204	2205	2206
6						c
26					C	
27	b	B	B	b	B	b

Elos / Cellulase

Labormittelwertvergleich nach Mandels h / Lab mean comparison to Mandel's h



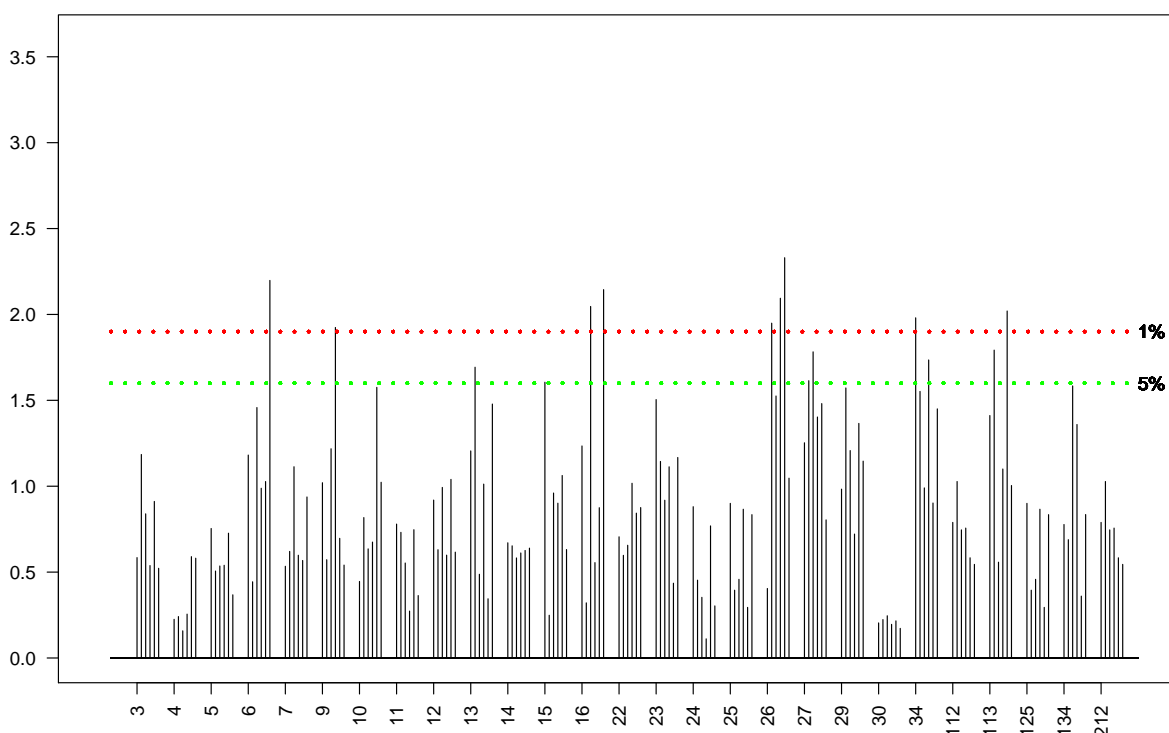
Oberste und unterste Linie 1%-Signifikanz-Niveau, mittlere Linien 5%-Signifikanz-Niveau.

Waagrecht finden sich die Labore mit jeweils einem Balken für jede Probe. Balken nach unten sind negative Abweichungen des Messwertes dieser Proben, Balken nach oben positive Abweichungen. Die Länge der Balken ist normiert, so dass Proben mit unterschiedlichen Gehalten verglichen werden können.

Upper and lower lines 1% significance level, intermediate lines 5% significance level.

The labs are ordered horizontally with a bar for each sample. Bars oriented downwards represent negative deviations for a sample, bar oriented upwards positive deviations. The bar lengths are normed, to allow to compare samples with different concentrations.

**Vergleich der laborinternen Streuung nach Mandels k / Lab
internal repeatability comparison Mandel's k**



Obere Linie 1%-Signifikanz-Niveau, untere Linie 5%-Signifikanz-Niveau.

Waagrecht finden sich die Labore mit jeweils einem Balken für jede Probe. Die Balken für die einzelnen Proben beginnen immer bei der Markierung der ganzen Zahl, d.h. z.B. für Labor 5 bei 5.0.

Die Balkenlänge ist die normierte laborinterne Streuung für die Wiederholungen dieser Probe. Lange Balken kennzeichnen eine große laborinterne Streuung.

Upper line 1% significance level, lower line 5% significance level.

The labs are ordered horizontally with a bar for each sample. The bar for the first sample from one lab always start at the whole number, i.e. for lab 5 at 5.0.

Bar lengths represent the lab internal repeatability. Long bars mark large deviations between repeats inside that laboratory.

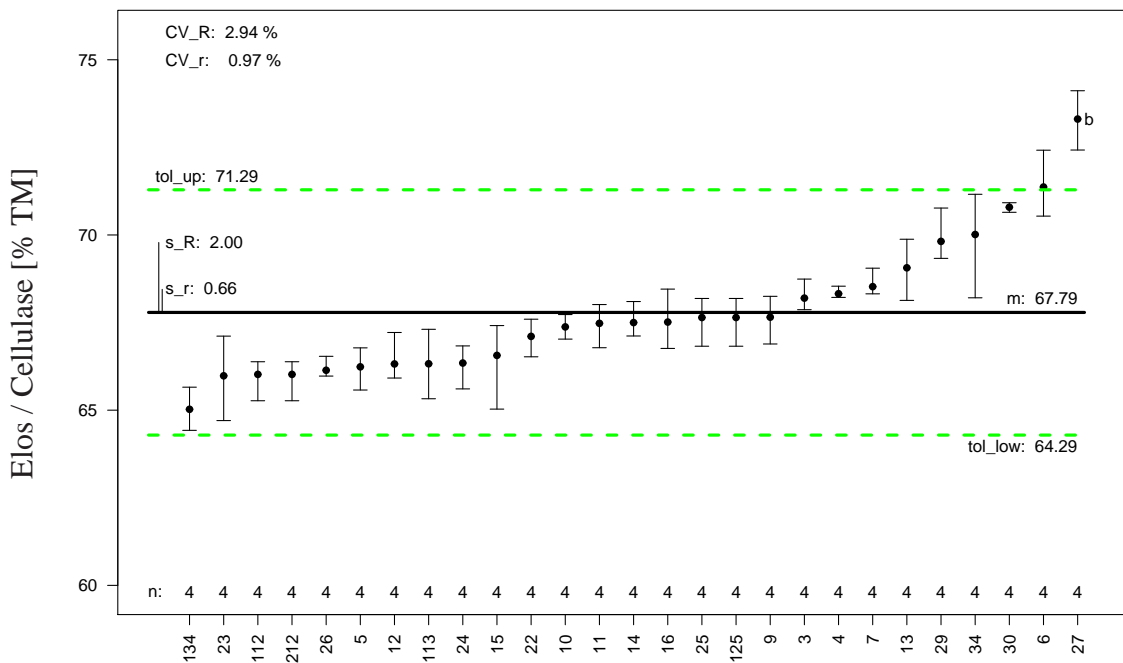
Einzelproben / Single Samples Die durchgezogene, schwarze, waagerechte Linien kennzeichnen den Mittelwert der Analysen für die Proben in diesem Ringversuch. Falls vorhanden, markieren die schwarzen, gestrichelten Linien den "wahren Wert" für die

Elos / Cellulase

Proben. Die grünen, gestrichelten Linien markieren die Toleranz-Grenzen ($2 \cdot s_R$) für die Analysen zu der Probe, die falls vorhanden mit der Vergleichsstandardabweichung der Methode nach Norm, sonst mit der Vergleichsstandardabweichung aus diesem Ringversuch berechnet wurden.

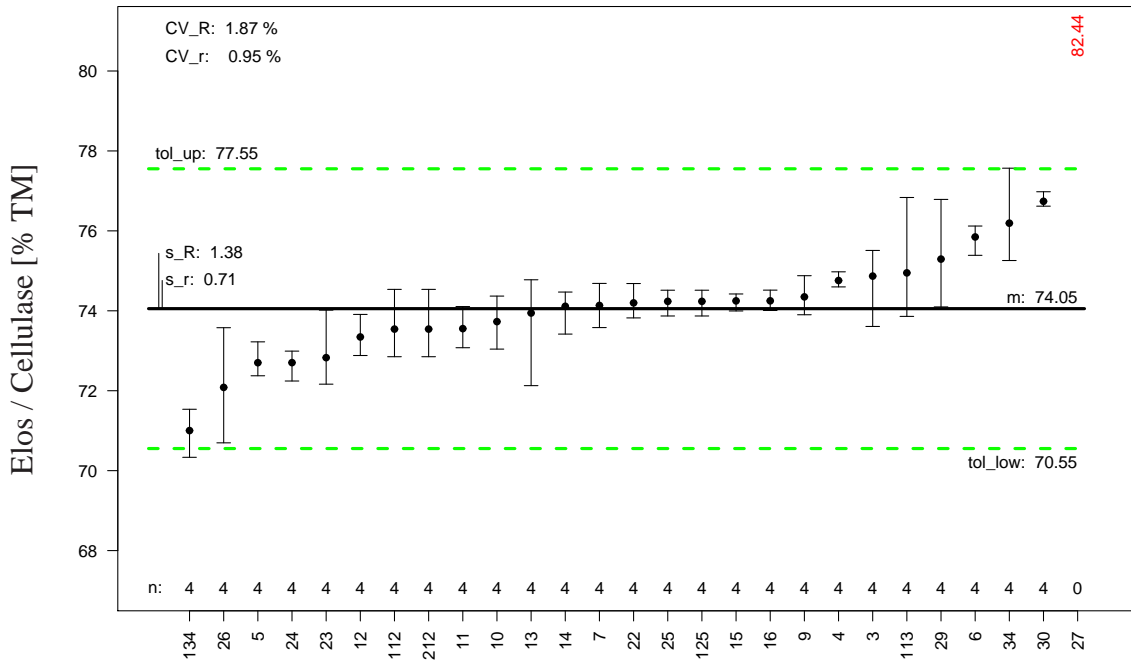
The solid, black, horizontal lines are the mean of analyses from this proficiency test for a sample. If present the black, dashed lines mark the "true value" of the samples. The green, dashed lines mark the tolerance limits for the analyses for the sample calculated either with the reproducibility from the method description, if given, else with the reproducibility from this proficiency trial ($2 \cdot s_R$).

Probe/Sample 2201:

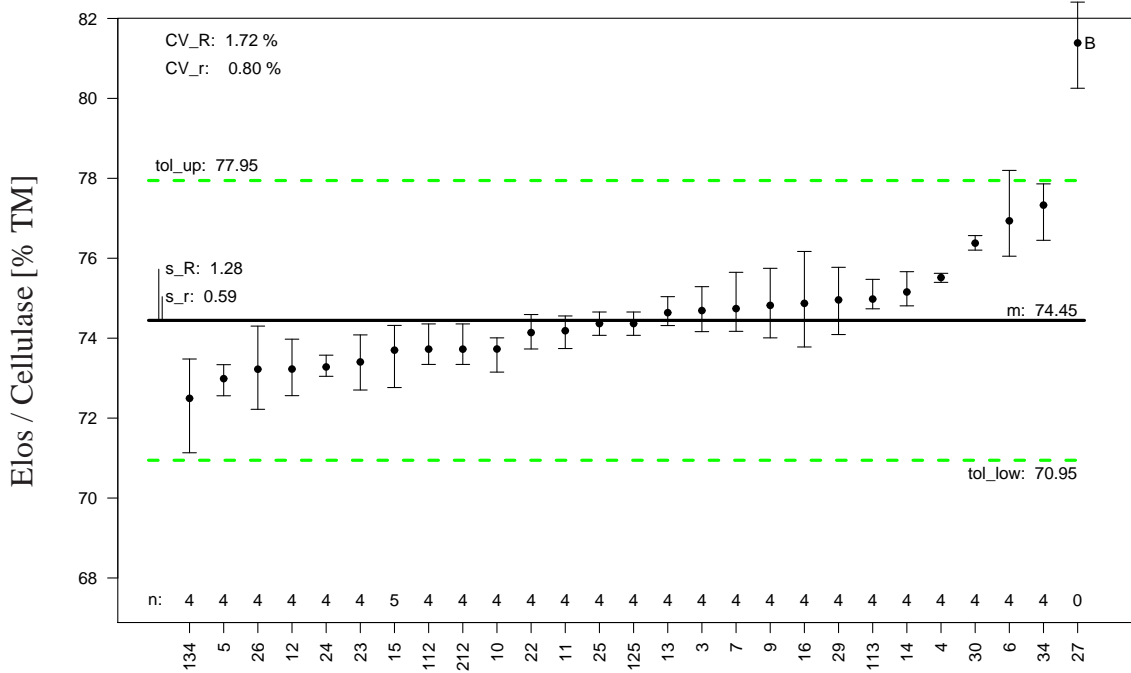


Elos / Cellulase

Probe/Sample 2202:

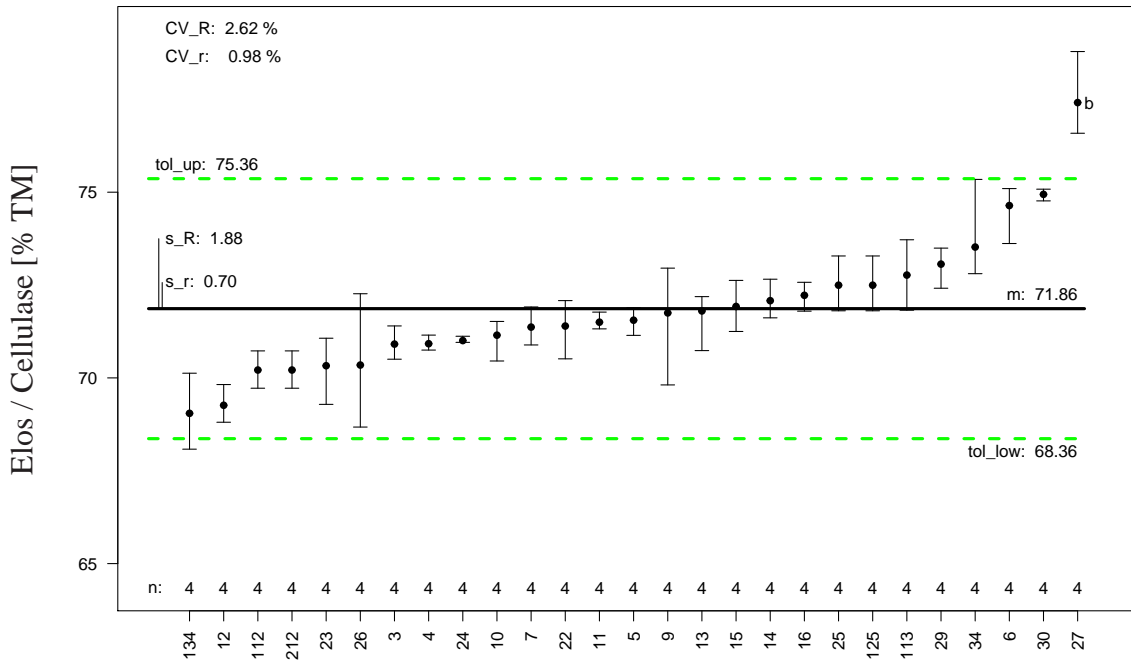


Probe/Sample 2203:

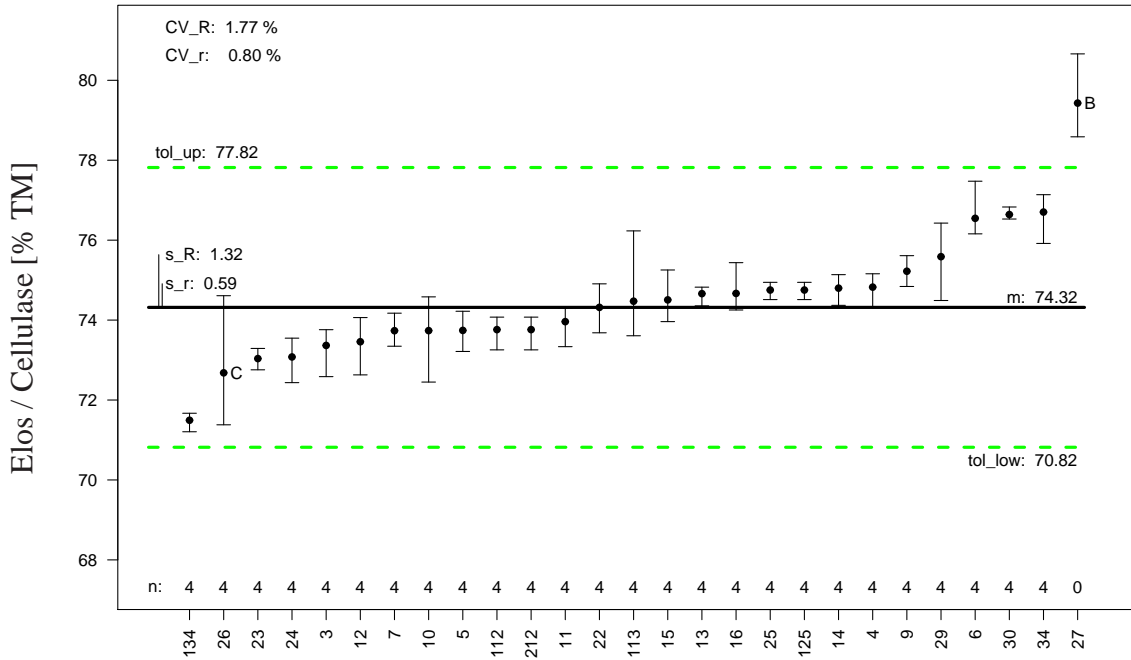


Elos / Cellulase

Probe/Sample 2204:

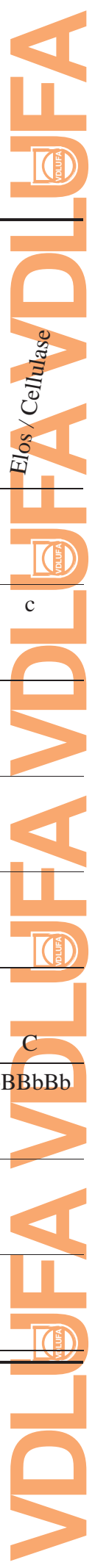


Probe/Sample 2205:



5.13 Zusammenfassung der Ausreißer / Summary of Outliers

Labor	Trockenmasse / dry matter	Rohprotein / XP	Rohfaser / XF	Rohfett / XL	Stärke / XS	Zucker / XZ	aNDFom	ADFom	ADL	NDF	ADF	Elos / Cellulase
3		c	b	c								
4									b			
5												
6											b	c
7												
9				c								
10												
11												
12												
13							CC					
14												
15												
16			c		c		C	C		C	cC	
22												
23	C											
24												
25	c											
26			c		cc		cC	c		c	c	C
27		BBBBBB	BB	c		B	b	Bb	BBBBB	b		bBBbBb
29		cC		c		C	b	BcB	CC	bCC		
30					b			BbbbB				
34		C	c								c	
112												
113												
125												
134						c		b			b	
212												



Trockenmasse / dry matter

Probe/Sample	2201	2202	2203	2204	2205	2206
n	108	108	109	108	108	108
p	27	27	27	27	27	27
n ₁	108	108	109	108	108	108
p ₁	27	27	27	27	27	27
ISO 5725						
m	91.10	91.03	91.12	91.63	90.99	90.83
s _r	0.18	0.15	0.16	0.16	0.16	0.15
s _R	0.80	0.78	0.84	0.77	0.79	0.90
ISO 13528						
m	91.09	91.02	91.09	91.60	90.96	90.78
s _r	0.11	0.10	0.09	0.12	0.10	0.11
s _R	0.81	0.72	0.78	0.80	0.72	0.82

Rohprotein / XP

Probe/Sample	2201	2202	2203	2204	2205	2206
n	108	108	109	108	108	108
p	27	27	27	27	27	27
n ₁	104	104	105	104	104	104
p ₁	26	26	26	26	26	26
ISO 5725						
m	5.79	6.61	6.73	6.63	6.01	6.09
s _r	0.12	0.11	0.09	0.12	0.10	0.11
s _R	0.31	0.30	0.33	0.31	0.32	0.29
ISO 13528						
m	5.79	6.62	6.73	6.62	6.01	6.09
s _r	0.09	0.06	0.07	0.07	0.07	0.07
s _R	0.35	0.34	0.37	0.37	0.34	0.31

Rohfaser / XF

Probe/Sample	2201	2202	2203	2204	2205	2206
n	108	108	109	108	108	108
p	27	27	27	27	27	27
n ₁	108	104	105	108	108	108
p ₁	27	26	26	27	27	27
ISO 5725						
m	20.04	15.56	15.82	17.20	16.14	18.66
s _r	0.46	0.45	0.35	0.43	0.39	0.42
s _R	0.97	0.68	0.57	0.92	0.72	0.75
ISO 13528						
m	20.05	15.55	15.83	17.20	16.12	18.63
s _r	0.30	0.25	0.25	0.26	0.27	0.25
s _R	1.04	0.70	0.56	0.95	0.61	0.74

Rohfett / XL

Probe/Sample	2201	2202	2203	2204	2205	2206
n	108	108	109	108	108	108
p	27	27	27	27	27	27
n ₁	108	108	109	108	108	108
p ₁	27	27	27	27	27	27
ISO 5725						
m	2.35	2.74	2.55	3.04	2.82	2.19
s _r	0.08	0.09	0.08	0.10	0.08	0.07
s _R	0.22	0.25	0.23	0.25	0.25	0.22
ISO 13528						
m	2.34	2.74	2.54	3.04	2.81	2.19
s _r	0.06	0.00	0.05	0.07	0.04	0.05
s _R	0.22	0.26	0.22	0.25	0.25	0.23

Stärke / XS

Probe/Sample	2201	2202	2203	2204	2205	2206
n	108	108	109	108	108	108
p	27	27	27	27	27	27
n ₁	108	108	109	108	108	108
p ₁	27	27	27	27	27	27
ISO 5725						
m	30.04	39.83	34.11	37.37	39.35	29.87
s _r	0.77	0.71	0.73	0.84	0.68	0.70
s _R	1.65	1.61	1.63	1.79	1.52	1.49
ISO 13528						
m	29.96	39.86	34.14	37.31	39.30	29.83
s _r	0.57	0.45	0.50	0.53	0.45	0.35
s _R	1.62	1.57	1.50	1.80	1.34	1.46

Zucker / XZ

Probe/Sample	2201	2202	2203	2204	2205	2206
n	108	108	109	108	108	108
p	27	27	27	27	27	27
n ₁	108	108	109	104	108	108
p ₁	27	27	27	26	27	27
ISO 5725						
m	9.50	7.43	11.79	5.45	7.15	11.05
s _r	0.29	0.31	0.38	0.24	0.23	0.28
s _R	0.76	0.80	0.81	0.59	0.86	0.77
ISO 13528						
m	9.52	7.44	11.79	5.48	7.12	11.02
s _r	0.23	0.18	0.26	0.00	0.17	0.18
s _R	0.79	0.85	0.83	0.64	0.86	0.72

aNDFom

Probe/Sample	2201	2202	2203	2204	2205	2206
n	108	108	109	108	108	108
p	27	27	27	27	27	27
n ₁	108	108	109	108	108	108
p ₁	27	27	27	27	27	27
ISO 5725						
m	42.72	35.56	36.14	39.39	37.10	40.76
s _r	0.56	0.57	0.55	0.56	0.59	0.52
s _R	1.34	1.27	1.29	1.27	1.18	1.27
ISO 13528						
m	42.79	35.54	36.07	39.34	37.09	40.73
s _r	0.44	0.38	0.39	0.38	0.38	0.32
s _R	1.32	1.19	1.06	1.21	1.13	1.11

ADFom

Probe/Sample	2201	2202	2203	2204	2205	2206
n	108	108	109	108	108	108
p	27	27	27	27	27	27
n ₁	100	108	109	108	104	108
p ₁	25	27	27	27	26	27
ISO 5725						
m	24.32	18.76	19.05	20.87	18.94	22.37
s _r	0.47	0.48	0.41	0.44	0.40	0.38
s _R	0.82	1.05	0.90	1.17	0.87	1.05
ISO 13528						
m	24.21	18.80	19.07	20.91	19.00	22.31
s _r	0.36	0.25	0.27	0.33	0.26	0.22
s _R	0.99	0.70	0.71	1.00	0.78	0.75

Robuste Auswertung / Robust results

ADL

Probe/Sample	2201	2202	2203	2204	2205	2206
n	108	108	109	108	108	108
p	27	27	27	27	27	27
n ₁	108	104	105	104	104	104
p ₁	27	26	26	26	26	26
ISO 5725						
m	2.26	1.90	1.68	2.01	1.76	2.17
s _r	0.06	0.06	0.06	0.06	0.06	0.06
s _R	0.25	0.20	0.18	0.19	0.19	0.18
ISO 13528						
m	2.27	1.90	1.68	2.01	1.75	2.17
s _r	0.05	0.05	0.04	0.04	0.04	0.04
s _R	0.23	0.20	0.18	0.20	0.20	0.19

NDF

Probe/Sample	2201	2202	2203	2204	2205	2206
n	108	108	109	108	108	108
p	27	27	27	27	27	27
n ₁	108	108	109	108	108	108
p ₁	27	27	27	27	27	27
ISO 5725						
m	43.24	35.90	36.20	39.29	37.07	41.19
s _r	0.65	0.72	0.61	0.69	0.61	0.57
s _R	1.38	1.09	1.06	1.37	1.27	1.22
ISO 13528						
m	43.30	35.91	36.22	39.27	36.99	41.14
s _r	0.49	0.39	0.46	0.48	0.42	0.33
s _R	1.35	0.94	1.00	1.34	1.08	1.14

ADF

Probe/Sample	2201	2202	2203	2204	2205	2206
n	108	108	109	108	108	108
p	27	27	27	27	27	27
n ₁	108	108	109	108	108	108
p ₁	27	27	27	27	27	27
ISO 5725						
m	25.25	19.77	19.56	21.66	20.11	23.38
s _r	0.50	0.47	0.41	0.50	0.44	0.42
s _R	0.96	0.83	0.72	1.00	0.87	0.80
ISO 13528						
m	25.26	19.71	19.55	21.67	20.07	23.39
s _r	0.36	0.30	0.29	0.33	0.31	0.28
s _R	1.01	0.67	0.65	1.02	0.80	0.00

Elos / Cellulase

Probe/Sample	2201	2202	2203	2204	2205	2206
n	108	108	109	108	108	108
p	27	27	27	27	27	27
n ₁	108	104	105	108	104	108
p ₁	27	26	26	27	26	27
ISO 5725						
m	67.79	74.05	74.45	71.86	74.32	69.93
s _r	0.66	0.71	0.59	0.70	0.59	0.63
s _R	2.00	1.38	1.28	1.88	1.32	1.81
ISO 13528						
m	67.60	74.06	74.39	71.66	74.36	69.75
s _r	0.48	0.44	0.43	0.47	0.37	0.42
s _R	1.76	1.30	1.32	1.61	1.36	1.36

7 Anhang / Appendix

7.1 Trockenmasse / dry matter

7.1.1 z-Werte / z Scores

Labor/Lab	2201	2202	2203	2204	2205	2206
3	0.77	0.84	0.91	0.87	0.63	0.94
4	-0.50	-0.54	0.09	0.20	-0.21	0.07
5	-0.72	-0.27	-0.04	-1.03	-0.51	-0.37
6	1.39	2.22	2.22	2.48	2.18	1.92
7	-0.67	-0.61	-0.73	-0.78	-0.73	-0.45
9	2.28	2.01	2.27	1.62	2.01	2.32
10	-1.01	-1.07	-0.80	-0.97	-1.10	-0.76
11	-1.98	-2.00	-1.64	-1.70	-1.54	-1.30
12	0.40	0.12	-0.09	0.14	0.04	-0.01
13	-0.13	0.01	-0.02	-0.12	-0.20	-0.44
14	-0.39	-0.57	-0.29	-0.71	-0.40	-0.35
15	-0.91	-0.85	-0.97	-1.01	-0.53	-0.88
16	0.78	0.81	0.48	0.64	0.82	0.64
22	-0.82	-0.63	-0.54	-0.40	-0.46	-0.40
23	0.80	0.06	0.47	-0.19	0.51	0.12
24	-0.19	-0.23	-0.53	-0.50	-0.41	-0.42
25	-0.60	-0.36	-0.43	-0.31	-0.83	-0.84
26	-1.47	-1.79	-2.00	-1.57	-1.87	-2.08
27	0.97	0.81	0.65	0.39	0.69	0.68
29	0.30	0.21	-0.16	0.14	-0.37	-0.19
30	-0.41	0.15	0.15	0.56	0.67	0.29
34	0.69	0.67	0.67	0.81	0.95	0.50
112	-0.27	-0.44	-0.62	-0.41	-0.36	-0.41
113	1.10	1.02	0.54	0.93	0.78	0.79
125	-0.60	-0.36	-0.43	-0.31	-0.83	-0.84
134	1.45	1.21	1.45	1.63	1.44	1.87
212	-0.27	-0.44	-0.62	-0.41	-0.36	-0.41

7.1.2 Einzelwerte / Single Values

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single values			
2201	3	4	91.71	0.04	91.77	91.71	91.71	91.67
2202	3	4	91.69	0.02	91.67	91.67	91.70	91.71
2203	3	4	91.88	0.16	91.71	92.07	91.95	91.81
2204	3	4	92.30	0.12	92.13	92.27	92.39	92.39
2205	3	4	91.49	0.10	91.51	91.35	91.52	91.59
2206	3	4	91.67	0.09	91.57	91.78	91.65	91.69
2201	4	4	90.69	0.14	90.87	90.57	90.74	90.60
2202	4	4	90.61	0.04	90.62	90.56	90.63	90.65
2203	4	4	91.20	0.11	91.32	91.09	91.26	91.13
2204	4	4	91.78	0.11	91.86	91.69	91.89	91.69
2205	4	4	90.83	0.08	90.92	90.72	90.85	90.81
2206	4	4	90.89	0.09	91.01	90.85	90.90	90.79
2201	5	4	90.52	0.06	90.61	90.52	90.47	90.48
2202	5	4	90.82	0.15	90.88	90.94	90.86	90.60
2203	5	4	91.09	0.02	91.09	91.09	91.11	91.07
2204	5	4	90.84	0.08	90.75	90.88	90.92	90.79
2205	5	4	90.59	0.12	90.52	90.76	90.59	90.49

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values				
2206	5	4	90.49	0.06	90.57	90.43	90.51	90.46	
2201	6	4	92.20	0.05	92.26	92.20	92.14	92.22	
2202	6	4	92.75	0.09	92.83	92.65	92.70	92.83	
2203	6	4	92.99	0.11	92.97	93.05	93.09	92.85	
2204	6	4	93.53	0.07	93.46	93.58	93.47	93.61	
2205	6	4	92.72	0.19	92.89	92.50	92.61	92.88	
2206	6	4	92.56	0.11	92.53	92.72	92.50	92.52	
2201	7	4	90.56	0.05	90.53	90.59	90.62	90.52	
2202	7	4	90.56	0.10	90.60	90.67	90.49	90.46	
2203	7	4	90.51	0.13	90.51	90.56	90.64	90.33	
2204	7	4	91.02	0.25	91.23	91.19	90.99	90.68	
2205	7	4	90.41	0.20	90.61	90.43	90.47	90.14	
2206	7	4	90.42	0.26	90.65	90.64	90.28	90.13	
2201	9	4	92.92	0.23	92.90	93.20	92.96	92.63	
2202	9	4	92.59	0.18	92.75	92.56	92.71	92.36	
2203	9	4	93.04	0.25	93.33	93.15	92.81	92.85	
2204	9	4	92.87	0.17	92.91	92.66	92.85	93.08	
2205	9	4	92.58	0.25	92.79	92.79	92.31	92.44	
2206	9	4	92.92	0.19	92.86	92.75	93.19	92.91	
2201	10	4	90.29	0.08	90.25	90.25	90.26	90.41	
2202	10	4	90.20	0.11	90.08	90.34	90.18	90.21	
2203	10	4	90.45	0.33	90.00	90.77	90.61	90.43	
2204	10	4	90.89	0.05	90.95	90.84	90.88	90.88	
2205	10	4	90.12	0.12	89.95	90.19	90.17	90.20	
2206	10	4	90.14	0.05	90.06	90.17	90.17	90.15	
2201	11	4	89.52	0.18	89.47	89.29	89.57	89.73	
2202	11	4	89.48	0.03	89.48	89.43	89.47	89.51	
2203	11	4	89.74	0.12	89.92	89.64	89.69	89.73	
2204	11	4	90.32	0.09	90.26	90.28	90.45	90.30	
2205	11	4	89.77	0.06	89.85	89.71	89.81	89.73	
2206	11	4	89.66	0.05	89.69	89.58	89.70	89.66	
2201	12	4	91.42	0.17	91.56	91.47	91.47	91.17	
2202	12	4	91.12	0.04	91.10	91.18	91.11	91.10	
2203	12	4	91.04	0.08	91.01	91.14	90.96	91.06	
2204	12	4	91.74	0.11	91.70	91.90	91.70	91.65	
2205	12	4	91.02	0.07	90.95	91.00	91.01	91.12	
2206	12	4	90.82	0.13	90.97	90.64	90.84	90.83	
2201	13	4	90.99	0.12	90.84	90.97	91.06	91.10	
2202	13	4	91.04	0.25	91.22	90.87	90.78	91.29	
2203	13	4	91.10	0.04	91.11	91.05	91.11	91.15	
2204	13	4	91.53	0.13	91.37	91.54	91.53	91.69	
2205	13	4	90.83	0.17	90.79	90.88	90.63	91.02	
2206	13	4	90.43	0.20	90.25	90.44	90.34	90.71	
2201	14	4	90.79	0.08	90.83	90.67	90.81	90.84	
2202	14	4	90.59	0.08	90.66	90.47	90.64	90.60	
2203	14	4	90.88	0.12	91.05	90.78	90.85	90.84	
2204	14	4	91.09	0.11	90.97	91.20	91.16	91.02	
2205	14	4	90.67	0.15	90.57	90.57	90.88	90.67	
2206	14	4	90.51	0.15	90.65	90.31	90.49	90.58	
2201	15	4	90.37	0.13	90.35	90.55	90.33	90.26	
2202	15	4	90.37	0.14	90.45	90.27	90.23	90.54	
2203	15	5	90.31	0.08	90.41	90.30	90.20	90.29	90.34
2204	15	4	90.85	0.25	90.61	90.76	90.85	91.19	

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2205	15	4	90.57	0.19	90.81	90.65	90.39	90.43
2206	15	4	90.03	0.21	90.31	89.98	89.81	90.01
2201	16	4	91.72	0.08	91.80	91.77	91.70	91.62
2202	16	4	91.66	0.09	91.72	91.64	91.74	91.53
2203	16	4	91.53	0.05	91.45	91.58	91.54	91.54
2204	16	4	92.12	0.11	92.10	92.28	92.01	92.08
2205	16	4	91.64	0.05	91.58	91.61	91.65	91.70
2206	16	4	91.41	0.11	91.55	91.29	91.40	91.39
2201	22	4	90.44	0.09	90.44	90.34	90.55	90.44
2202	22	4	90.54	0.06	90.49	90.49	90.56	90.62
2203	22	4	90.67	0.15	90.61	90.89	90.55	90.61
2204	22	4	91.32	0.05	91.33	91.32	91.26	91.37
2205	22	4	90.63	0.14	90.76	90.58	90.45	90.72
2206	22	4	90.47	0.17	90.71	90.37	90.44	90.34
2201	23	4	91.74	0.11	91.88	91.73	91.63	91.71
2202	23	4	91.08	0.26	90.90	90.98	91.46	90.97
2203	23	4	91.52	0.25	91.84	91.53	91.23	91.47
2204	23	4	91.48	0.34	91.03	91.76	91.73	91.42
2205	23	4	91.39	0.41C	91.88	91.49	90.89	91.31
2206	23	4	90.94	0.14	90.91	90.92	91.13	90.80
2201	24	4	90.95	0.14	91.08	90.94	91.00	90.76
2202	24	4	90.86	0.17	91.10	90.83	90.79	90.70
2203	24	4	90.68	0.11	90.76	90.53	90.74	90.69
2204	24	4	91.24	0.22	91.56	91.14	91.21	91.06
2205	24	4	90.67	0.12	90.65	90.50	90.76	90.77
2206	24	4	90.45	0.13	90.33	90.58	90.34	90.53
2201	25	4	90.62	0.40 c	90.02	90.89	90.71	90.85
2202	25	4	90.75	0.16	90.62	90.63	90.96	90.78
2203	25	4	90.76	0.06	90.75	90.76	90.69	90.83
2204	25	4	91.39	0.17	91.18	91.32	91.49	91.57
2205	25	4	90.33	0.06	90.30	90.27	90.35	90.41
2206	25	4	90.07	0.12	89.92	90.16	90.05	90.16
2201	26	4	89.92	0.35	90.28	90.13	89.77	89.50
2202	26	4	89.64	0.17	89.68	89.75	89.40	89.75
2203	26	4	89.44	0.15	89.50	89.41	89.61	89.25
2204	26	4	90.42	0.17	90.49	90.62	90.23	90.33
2205	26	4	89.51	0.18	89.58	89.72	89.42	89.31
2206	26	4	88.94	0.11	88.95	88.97	88.80	89.06
2201	27	4	91.87	0.13	91.98	91.68	91.94	91.89
2202	27	4	91.66	0.02	91.66	91.63	91.67	91.68
2203	27	4	91.67	0.15	91.56	91.62	91.61	91.89
2204	27	4	91.93	0.17	92.04	91.87	91.71	92.09
2205	27	4	91.54	0.17	91.37	91.47	91.54	91.78
2206	27	4	91.44	0.16	91.56	91.56	91.41	91.23
2201	29	4	91.34	0.11	91.28	91.45	91.41	91.21
2202	29	4	91.20	0.14	91.01	91.29	91.17	91.31
2203	29	4	90.99	0.17	91.03	90.74	91.13	91.05
2204	29	4	91.73	0.19	91.47	91.88	91.74	91.84
2205	29	4	90.70	0.14	90.58	90.65	90.68	90.89
2206	29	4	90.66	0.16	90.54	90.61	90.89	90.58
2201	30	4	90.77	0.25	90.44	90.71	90.89	91.03
2202	30	4	91.15	0.18	90.94	91.21	91.10	91.35
2203	30	4	91.25	0.17	91.06	91.37	91.15	91.41

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2204	30	4	92.05	0.16	91.83	92.13	92.04	92.21
2205	30	4	91.52	0.03	91.49	91.51	91.52	91.56
2206	30	4	91.09	0.16	90.90	91.16	91.03	91.27
2201	34	4	91.64	0.13	91.69	91.60	91.81	91.49
2202	34	4	91.55	0.27	91.76	91.45	91.79	91.22
2203	34	4	91.68	0.30	91.50	91.60	92.13	91.50
2204	34	4	92.25	0.18	92.04	92.31	92.46	92.18
2205	34	4	91.74	0.11	91.71	91.60	91.80	91.85
2206	34	4	91.28	0.13	91.15	91.23	91.28	91.45
2201	112	4	90.88	0.13	90.95	91.01	90.83	90.73
2202	112	4	90.69	0.08	90.66	90.74	90.77	90.59
2203	112	4	90.60	0.02	90.63	90.61	90.58	90.60
2204	112	4	91.31	0.10	91.20	91.32	91.45	91.29
2205	112	4	90.71	0.05	90.77	90.69	90.64	90.73
2206	112	4	90.45	0.23	90.49	90.32	90.25	90.76
2201	113	4	91.97	0.21	92.21	92.06	91.72	91.90
2202	113	4	91.82	0.25	91.51	91.88	92.11	91.78
2203	113	4	91.58	0.13	91.68	91.65	91.38	91.60
2204	113	4	92.34	0.10	92.39	92.36	92.19	92.41
2205	113	4	91.61	0.27	91.65	91.75	91.82	91.21
2206	113	4	91.55	0.12	91.65	91.39	91.63	91.51
2201	125	4	90.62	0.40	90.02	90.89	90.71	90.85
2202	125	4	90.75	0.16	90.62	90.63	90.96	90.78
2203	125	4	90.76	0.06	90.75	90.76	90.69	90.83
2204	125	4	91.39	0.17	91.18	91.32	91.49	91.57
2205	125	4	90.33	0.06	90.30	90.27	90.35	90.41
2206	125	4	90.07	0.12	89.92	90.16	90.05	90.16
2201	134	4	92.25	0.16	92.29	92.46	92.14	92.12
2202	134	4	91.97	0.16	91.92	91.92	91.84	92.20
2203	134	4	92.34	0.34	92.02	92.53	92.09	92.72
2204	134	4	92.88	0.15	92.97	92.97	92.66	92.91
2205	134	4	92.13	0.12	92.17	92.28	92.00	92.08
2206	134	4	92.52	0.12	92.56	92.38	92.47	92.67
2201	212	4	90.88	0.13	90.95	91.01	90.83	90.73
2202	212	4	90.69	0.08	90.66	90.74	90.77	90.59
2203	212	4	90.60	0.02	90.63	90.61	90.58	90.60
2204	212	4	91.31	0.10	91.20	91.32	91.45	91.29
2205	212	4	90.71	0.05	90.77	90.69	90.64	90.73
2206	212	4	90.45	0.23	90.49	90.32	90.25	90.76

7.2 Rohprotein / XP

7.2.1 z-Werte / z Scores

Labor/Lab	2201	2202	2203	2204	2205	2206
3	-0.03	-0.20	-0.29	-0.48	-1.07	-0.15
4	-1.01	-0.80	-1.22	-1.08	-0.41	-0.80
5	0.19	0.49	0.66	0.91	0.67	0.78
6	-1.07	-1.12	-0.90	-1.01	-1.42	-1.19
7	1.34	0.75	1.23	1.01	1.19	1.05
9	-1.37	-1.07	-1.58	-0.73	-0.75	-1.32
10	0.62	0.66	0.41	0.43	0.60	0.49
11	0.73	0.35	0.40	0.18	0.31	0.55
12	-0.58	-0.57	-0.46	-0.78	-0.67	-0.21
13	0.22	-0.45	0.00	-0.42	-0.36	-0.11
14	0.17	0.42	0.41	0.38	0.58	0.32
15	0.21	0.28	0.35	0.36	0.29	0.40
16	1.47	1.49	1.83	1.68	1.54	1.37
22	0.08	-0.07	-0.07	0.01	-0.05	-0.01
23	-0.19	0.26	0.23	0.17	0.15	0.12
24	0.57	0.60	0.15	0.52	0.52	0.57
25	0.33	0.29	0.26	0.34	0.36	0.26
26	0.86	0.98	0.93	0.80	0.76	0.88
27	-5.62	-7.05	-5.78	-6.80	-7.14	-6.91
29	0.16	-0.19	0.06	-0.65	-0.57	-0.35
30	-1.54	-1.82	-1.64	-1.36	-1.90	-1.31
34	0.59	0.33	0.32	0.54	0.56	0.16
112	-0.76	-0.55	-0.55	-0.75	-0.42	-0.42
113	0.27	1.06	1.14	1.04	0.86	0.41
125	0.33	0.29	0.26	0.34	0.36	0.26
134	-0.81	-0.88	-1.37	-0.72	-0.70	-1.35
212	-0.76	-0.55	-0.55	-0.75	-0.42	-0.42

7.2.2 Einzelwerte / Single Values

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single values				
2201	3	4	5.78	0.07	5.77	5.83	5.83	5.68	
2202	3	4	6.54	0.04	6.49	6.52	6.56	6.58	
2203	3	4	6.62	0.08	6.75	6.61	6.55	6.59	
2204	3	4	6.44	0.11	6.31	6.41	6.51	6.55	
2205	3	4	5.60	0.22 c	5.32	5.77	5.80	5.53	
2206	3	4	6.03	0.22	5.76	6.06	6.02	6.30	
2201	4	4	5.41	0.07	5.46	5.39	5.47	5.32	
2202	4	4	6.31	0.10	6.25	6.42	6.21	6.38	
2203	4	4	6.28	0.04	6.24	6.33	6.24	6.30	
2204	4	4	6.22	0.03	6.21	6.21	6.21	6.26	
2205	4	4	5.85	0.04	5.89	5.85	5.81	5.87	
2206	4	4	5.79	0.09	5.71	5.91	5.74	5.80	
2201	5	4	5.86	0.02	5.85	5.89	5.86	5.84	
2202	5	4	6.80	0.12	6.88	6.74	6.66	6.91	
2203	5	4	6.98	0.07	7.08	6.95	6.91	6.99	
2204	5	4	6.97	0.07	7.04	6.89	6.92	7.01	
2205	5	4	6.26	0.08	6.26	6.15	6.34	6.28	

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values				
2206	5	4	6.38	0.03	6.36	6.42	6.36	6.39	
2201	6	4	5.39	0.14	5.29	5.24	5.45	5.56	
2202	6	4	6.19	0.16	6.04	6.33	6.33	6.07	
2203	6	4	6.40	0.06	6.35	6.48	6.34	6.41	
2204	6	4	6.25	0.17	6.26	6.01	6.41	6.30	
2205	6	4	5.47	0.17	5.35	5.66	5.57	5.31	
2206	6	4	5.64	0.21	5.69	5.75	5.34	5.79	
2201	7	4	6.29	0.08	6.34	6.34	6.18	6.31	
2202	7	4	6.89	0.04	6.89	6.90	6.85	6.94	
2203	7	4	7.20	0.05	7.17	7.17	7.18	7.27	
2204	7	4	7.01	0.07	6.97	7.12	6.96	6.97	
2205	7	4	6.45	0.10	6.50	6.43	6.33	6.57	
2206	7	4	6.48	0.10	6.57	6.37	6.44	6.56	
2201	9	4	5.28	0.12	5.26	5.35	5.38	5.11	
2202	9	4	6.21	0.17	6.15	6.07	6.16	6.46	
2203	9	4	6.14	0.08	6.03	6.13	6.18	6.21	
2204	9	4	6.35	0.07	6.36	6.41	6.38	6.25	
2205	9	4	5.73	0.15	5.93	5.73	5.67	5.58	
2206	9	4	5.60	0.09	5.64	5.67	5.47	5.61	
2201	10	4	6.02	0.12	5.98	6.14	6.08	5.88	
2202	10	4	6.86	0.03	6.87	6.87	6.82	6.89	
2203	10	4	6.89	0.08	7.00	6.82	6.88	6.85	
2204	10	4	6.79	0.04	6.83	6.74	6.82	6.76	
2205	10	4	6.23	0.07	6.25	6.13	6.29	6.24	
2206	10	4	6.27	0.05	6.27	6.31	6.20	6.32	
2201	11	4	6.06	0.14	6.09	6.25	5.94	5.96	
2202	11	4	6.75	0.07	6.67	6.78	6.83	6.71	
2203	11	4	6.89	0.07	6.83	6.92	6.96	6.83	
2204	11	4	6.69	0.06	6.77	6.65	6.65	6.69	
2205	11	4	6.12	0.05	6.07	6.14	6.10	6.19	
2206	11	4	6.30	0.04	6.29	6.32	6.24	6.33	
2201	12	4	5.57	0.10	5.48	5.68	5.63	5.50	
2202	12	4	6.40	0.08	6.30	6.44	6.38	6.48	
2203	12	4	6.56	0.05	6.48	6.59	6.58	6.59	
2204	12	4	6.33	0.17	6.15	6.44	6.51	6.23	
2205	12	4	5.75	0.08	5.71	5.67	5.80	5.83	
2206	12	4	6.01	0.06	6.07	6.06	5.94	5.97	
2201	13	4	5.87	0.10	5.86	5.75	6.00	5.88	
2202	13	4	6.45	0.16	6.22	6.54	6.59	6.44	
2203	13	4	6.73	0.05	6.74	6.70	6.80	6.69	
2204	13	4	6.47	0.05	6.50	6.40	6.52	6.45	
2205	13	4	5.87	0.07	5.87	5.78	5.93	5.92	
2206	13	4	6.05	0.15	6.02	5.87	6.23	6.08	
2201	14	4	5.85	0.03	5.89	5.83	5.83	5.86	
2202	14	4	6.77	0.05	6.71	6.77	6.83	6.76	
2203	14	4	6.89	0.07	6.78	6.95	6.90	6.92	
2204	14	4	6.77	0.05	6.74	6.79	6.71	6.83	
2205	14	4	6.22	0.03	6.21	6.26	6.23	6.19	
2206	14	4	6.21	0.03	6.17	6.25	6.21	6.20	
2201	15	4	5.87	0.16	5.87	5.65	5.97	5.99	
2202	15	4	6.72	0.07	6.73	6.77	6.76	6.62	
2203	15	5	6.86	0.04	6.87	6.80	6.88	6.87	6.90
2204	15	4	6.76	0.07	6.86	6.71	6.75	6.73	

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2205	15	4	6.12	0.08	6.22	6.14	6.05	6.05
2206	15	4	6.24	0.05	6.23	6.21	6.31	6.20
2201	16	4	6.34	0.08	6.27	6.27	6.40	6.42
2202	16	4	7.17	0.06	7.08	7.22	7.18	7.21
2203	16	4	7.42	0.13	7.27	7.37	7.55	7.49
2204	16	4	7.26	0.05	7.32	7.20	7.28	7.22
2205	16	4	6.59	0.11	6.58	6.71	6.61	6.45
2206	16	4	6.60	0.16	6.65	6.62	6.39	6.76
2201	22	4	5.82	0.05	5.85	5.85	5.85	5.74
2202	22	4	6.59	0.03	6.62	6.58	6.56	6.59
2203	22	4	6.71	0.06	6.64	6.78	6.72	6.70
2204	22	4	6.63	0.07	6.54	6.67	6.70	6.61
2205	22	4	5.99	0.07	5.99	6.00	5.89	6.08
2206	22	4	6.09	0.08	6.04	6.17	6.01	6.12
2201	23	4	5.72	0.13	5.54	5.85	5.76	5.73
2202	23	4	6.71	0.12	6.79	6.76	6.53	6.77
2203	23	4	6.82	0.10	6.89	6.72	6.92	6.75
2204	23	4	6.69	0.16	6.91	6.63	6.53	6.70
2205	23	4	6.06	0.15	6.07	5.96	6.27	5.94
2206	23	4	6.14	0.09	6.12	6.19	6.02	6.21
2201	24	4	6.00	0.14	5.95	6.19	6.02	5.85
2202	24	4	6.84	0.08	6.89	6.73	6.91	6.82
2203	24	4	6.79	0.14	6.99	6.68	6.70	6.79
2204	24	4	6.82	0.13	6.87	6.62	6.90	6.88
2205	24	4	6.20	0.03	6.17	6.23	6.18	6.23
2206	24	4	6.30	0.06	6.24	6.38	6.29	6.30
2201	25	4	5.91	0.12	6.04	5.78	5.85	5.98
2202	25	4	6.72	0.02	6.74	6.73	6.71	6.71
2203	25	4	6.83	0.09	6.88	6.74	6.94	6.76
2204	25	4	6.75	0.04	6.80	6.72	6.71	6.78
2205	25	4	6.14	0.02	6.14	6.17	6.13	6.13
2206	25	4	6.19	0.04	6.22	6.14	6.16	6.23
2201	26	4	6.11	0.08	6.08	6.03	6.12	6.22
2202	26	4	6.98	0.08	7.02	7.04	6.87	7.00
2203	26	4	7.08	0.13	7.19	7.13	6.89	7.12
2204	26	4	6.93	0.06	6.94	7.00	6.86	6.92
2205	26	4	6.29	0.14	6.24	6.11	6.40	6.41
2206	26	4	6.42	0.09	6.30	6.41	6.46	6.51
2201	27	0	3.68B	0.42C	3.25	4.05	4.03	3.40
2202	27	0	3.97B	0.29C	3.80	3.64	4.23	4.20
2203	27	0	4.57B	0.43C	4.35	4.95	4.07	4.90
2204	27	0	4.08B	0.14	4.09	3.95	4.26	4.01
2205	27	0	3.33B	0.16	3.57	3.28	3.26	3.21
2206	27	0	3.50B	0.07	3.52	3.40	3.52	3.54
2201	29	4	5.85	0.26 c	5.71	5.99	6.13	5.56
2202	29	4	6.54	0.28C	6.56	6.61	6.84	6.16
2203	29	4	6.76	0.12	6.66	6.90	6.80	6.67
2204	29	4	6.38	0.22	6.37	6.68	6.17	6.30
2205	29	4	5.79	0.03	5.82	5.77	5.78	5.82
2206	29	4	5.96	0.19	5.69	6.02	6.16	5.96
2201	30	4	5.21	0.03	5.25	5.23	5.18	5.20
2202	30	4	5.93	0.02	5.91	5.92	5.96	5.93
2203	30	4	6.12	0.03	6.16	6.09	6.12	6.11

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2204	30	4	6.12	0.01	6.13	6.13	6.11	6.10
2205	30	4	5.29	0.03	5.26	5.34	5.29	5.28
2206	30	4	5.60	0.03	5.62	5.56	5.61	5.59
2201	34	4	6.01	0.18	5.92	5.91	5.94	6.28
2202	34	4	6.74	0.13	6.60	6.91	6.70	6.72
2203	34	4	6.85	0.18	6.87	6.61	6.90	7.04
2204	34	4	6.83	0.34C	6.79	6.70	6.53	7.31
2205	34	4	6.22	0.11	6.33	6.16	6.09	6.29
2206	34	4	6.15	0.09	6.06	6.25	6.11	6.20
2201	112	4	5.51	0.05	5.54	5.45	5.54	5.49
2202	112	4	6.41	0.09	6.51	6.39	6.30	6.43
2203	112	4	6.53	0.03	6.49	6.50	6.55	6.56
2204	112	4	6.35	0.15	6.47	6.15	6.30	6.46
2205	112	4	5.85	0.09	5.95	5.79	5.76	5.89
2206	112	4	5.93	0.12	5.93	5.77	5.98	6.05
2201	113	4	5.89	0.14	5.89	5.88	5.72	6.07
2202	113	4	7.01	0.11	7.14	7.02	6.87	7.01
2203	113	4	7.16	0.13	7.30	6.99	7.16	7.19
2204	113	4	7.01	0.10	7.07	7.10	6.88	7.01
2205	113	4	6.33	0.11	6.33	6.21	6.31	6.48
2206	113	4	6.24	0.13	6.08	6.20	6.38	6.32
2201	125	4	5.91	0.12	6.04	5.78	5.85	5.98
2202	125	4	6.72	0.02	6.74	6.73	6.71	6.71
2203	125	4	6.83	0.09	6.88	6.74	6.94	6.76
2204	125	4	6.75	0.04	6.80	6.72	6.71	6.78
2205	125	4	6.14	0.02	6.14	6.17	6.13	6.13
2206	125	4	6.19	0.04	6.22	6.14	6.16	6.23
2201	134	4	5.48	0.11	5.47	5.41	5.64	5.41
2202	134	4	6.28	0.08	6.21	6.22	6.39	6.30
2203	134	4	6.22	0.14	6.14	6.37	6.31	6.05
2204	134	4	6.36	0.12	6.28	6.53	6.30	6.31
2205	134	4	5.75	0.14	5.62	5.74	5.95	5.68
2206	134	4	5.58	0.02	5.56	5.57	5.61	5.59
2201	212	4	5.51	0.05	5.54	5.45	5.54	5.49
2202	212	4	6.41	0.09	6.51	6.39	6.30	6.43
2203	212	4	6.53	0.03	6.49	6.50	6.55	6.56
2204	212	4	6.35	0.15	6.47	6.15	6.30	6.46
2205	212	4	5.85	0.09	5.95	5.79	5.76	5.89
2206	212	4	5.93	0.12	5.93	5.77	5.98	6.05

7.3 Rohfaser / XF

7.3.1 z-Werte / z Scores

Labor/Lab	2201	2202	2203	2204	2205	2206
3	0.67	0.46	0.78	1.35	1.82	0.96
4	0.45	0.01	0.10	1.20	0.20	0.30
5	0.52	0.47	0.35	-0.43	-0.03	-0.37
6	-1.42	-0.06	-0.10	-0.87	-0.39	-0.97
7	-0.29	0.43	-0.14	0.37	0.40	0.13
9	-0.94	-1.01	-0.65	-1.16	-1.38	-0.68
10	-0.16	-0.06	0.25	0.09	-0.10	-0.00
11	-0.61	-0.22	-0.31	-0.31	-0.08	-0.45
12	0.87	0.22	0.45	1.54	0.37	0.32
13	-0.63	0.51	0.12	0.19	0.13	-0.21
14	0.34	0.16	-0.00	0.16	-0.07	0.18
15	0.43	-0.24	0.17	-0.40	-0.16	0.05
16	-0.68	-0.69	-0.89	-0.94	-0.75	-0.82
22	0.47	-0.12	0.06	0.17	-0.06	-0.31
23	1.11	0.61	0.46	0.70	0.64	1.21
24	0.42	0.34	0.21	-0.20	0.31	0.05
25	-0.10	-0.22	-0.00	-0.59	-0.37	-0.09
26	0.85	1.08	0.71	0.92	0.81	0.70
27	-1.93	-3.21	-2.48	-0.86	-0.47	-0.82
29	-1.15	-0.32	-0.11	-0.18	-0.38	-0.02
30	-1.20	-0.92	-0.64	-1.49	-0.61	-0.74
34	-0.81	-0.58	-1.01	-0.44	-0.47	-0.88
112	1.29	0.14	0.23	0.95	0.29	0.54
113	0.31	-1.01	-0.94	-1.12	-0.59	-0.18
125	-0.10	-0.22	-0.00	-0.59	-0.37	-0.09
134	1.03	1.13	0.64	0.97	1.02	1.67
212	1.29	0.14	0.23	0.95	0.29	0.54

7.3.2 Einzelwerte / Single Values

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single values				
2201	3	4	20.70	0.14	20.64	20.88	20.54	20.75	
2202	3	4	16.02	0.43	15.88	16.52	16.15	15.51	
2203	3	4	16.60	0.13	16.55	16.73	16.45	16.68	
2204	3	4	18.54	0.08	18.43	18.59	18.62	18.54	
2205	3	4	17.97 ^b	0.46	18.05	17.74	17.51	18.57	
2206	3	4	19.62	0.07	19.63	19.53	19.62	19.69	
2201	4	4	20.48	0.23	20.43	20.27	20.82	20.42	
2202	4	4	15.56	0.22	15.60	15.26	15.77	15.62	
2203	4	4	15.92	0.10	15.91	16.04	15.80	15.91	
2204	4	4	18.40	0.14	18.25	18.52	18.30	18.52	
2205	4	4	16.34	0.28	16.23	16.06	16.71	16.37	
2206	4	4	18.95	0.24	18.96	18.81	19.29	18.76	
2201	5	4	20.55	0.24	20.50	20.34	20.48	20.89	
2202	5	4	16.03	0.14	15.93	16.02	16.22	15.93	
2203	5	4	16.17	0.19	15.91	16.30	16.31	16.17	
2204	5	4	16.77	0.19	16.91	16.95	16.56	16.66	
2205	5	4	16.12	0.29	16.22	15.87	16.48	15.89	

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2206	5	4	18.29	0.15	18.36	18.13	18.45	18.21
2201	6	4	18.62	0.77	19.18	17.48	18.95	18.85
2202	6	4	15.50	0.29	15.55	15.33	15.88	15.24
2203	6	4	15.72	0.63	16.01	16.22	14.80	15.84
2204	6	4	16.33	0.51	16.03	16.03	17.09	16.17
2205	6	4	15.76	0.45	15.09	16.05	15.91	15.98
2206	6	4	17.68	0.89	17.28	19.01	17.39	17.05
2201	7	4	19.74	0.24	20.02	19.43	19.78	19.75
2202	7	4	15.98	0.20	15.96	15.75	16.23	16.00
2203	7	4	15.68	0.29	15.87	15.86	15.25	15.74
2204	7	4	17.57	0.20	17.68	17.57	17.75	17.28
2205	7	4	16.54	0.29	16.46	16.84	16.70	16.18
2206	7	4	18.79	0.37	18.39	19.24	18.64	18.89
2201	9	4	19.09	0.55	18.88	19.56	18.40	19.52
2202	9	4	14.54	0.37	14.45	14.65	14.97	14.10
2203	9	4	15.17	0.38	15.70	15.13	15.06	14.78
2204	9	4	16.04	0.66	15.83	17.00	15.49	15.84
2205	9	4	14.77	0.44	14.28	14.57	14.92	15.29
2206	9	4	17.98	0.51	18.02	18.03	18.56	17.31
2201	10	4	19.87	0.19	19.94	19.70	19.73	20.11
2202	10	4	15.50	0.17	15.64	15.64	15.36	15.35
2203	10	4	16.07	0.19	15.82	16.27	16.16	16.03
2204	10	4	17.29	0.22	17.19	17.24	17.60	17.11
2205	10	4	16.04	0.27	16.40	15.84	15.82	16.10
2206	10	4	18.65	0.14	18.57	18.52	18.70	18.83
2201	11	4	19.42	0.37	19.30	18.96	19.82	19.61
2202	11	4	15.33	0.28	15.22	15.28	15.10	15.74
2203	11	4	15.51	0.26	15.62	15.38	15.23	15.82
2204	11	4	16.89	0.12	16.74	16.99	17.00	16.85
2205	11	4	16.06	0.28	16.45	15.91	15.82	16.05
2206	11	4	18.21	0.19	18.41	18.19	18.27	17.97
2201	12	4	20.91	0.56	21.00	20.10	21.26	21.28
2202	12	4	15.78	0.26	15.85	15.43	15.79	16.05
2203	12	4	16.27	0.41	16.62	16.62	15.83	16.00
2204	12	4	18.73	0.27	18.97	18.72	18.36	18.88
2205	12	4	16.52	0.40	17.03	16.63	16.21	16.20
2206	12	4	18.98	0.15	19.03	18.81	19.16	18.91
2201	13	4	19.40	0.47	19.87	19.74	19.01	18.99
2202	13	4	16.06	0.86	17.33	15.52	15.55	15.86
2203	13	4	15.94	0.21	15.97	16.23	15.80	15.78
2204	13	4	17.39	0.43	17.17	18.01	17.04	17.35
2205	13	4	16.28	0.09	16.21	16.40	16.31	16.19
2206	13	4	18.45	0.69	18.74	19.27	17.81	17.96
2201	14	4	20.38	0.31	20.02	20.28	20.74	20.47
2202	14	4	15.71	0.18	15.98	15.67	15.55	15.67
2203	14	4	15.82	0.29	16.22	15.53	15.72	15.80
2204	14	4	17.36	0.15	17.25	17.38	17.56	17.25
2205	14	4	16.07	0.12	16.07	16.09	15.91	16.21
2206	14	4	18.84	0.30	18.71	19.05	18.47	19.12
2201	15	4	20.46	0.90	20.23	21.78	20.07	19.77
2202	15	4	15.32	0.14	15.18	15.35	15.23	15.51
2203	15	5	15.99	0.28	16.02	16.40	15.99	15.62
2204	15	4	16.80	0.42	16.25	16.97	16.75	17.23

15.94

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2205	15	4	15.98	0.33	15.63	16.17	15.78	16.34
2206	15	4	18.71	0.12	18.87	18.72	18.57	18.68
2201	16	4	19.36	0.36	19.76	19.13	19.56	18.99
2202	16	4	14.87	0.15	15.09	14.81	14.83	14.73
2203	16	4	14.93	0.75c	15.59	15.55	14.45	14.12
2204	16	4	16.26	0.17	16.47	16.15	16.33	16.09
2205	16	4	15.40	0.41	15.36	14.85	15.55	15.83
2206	16	4	17.84	0.88	17.39	17.71	19.11	17.14
2201	22	4	20.51	0.43	20.00	20.37	20.64	21.01
2202	22	4	15.44	0.41	15.34	15.17	16.05	15.19
2203	22	4	15.88	0.21	15.68	15.73	16.01	16.11
2204	22	4	17.37	0.48	17.93	16.88	17.57	17.08
2205	22	4	16.09	0.29	16.24	16.25	15.66	16.21
2206	22	4	18.34	0.28	18.38	18.05	18.23	18.72
2201	23	4	21.15	0.49	21.37	20.51	21.66	21.04
2202	23	4	16.17	0.59	16.22	15.33	16.67	16.46
2203	23	4	16.28	0.18	16.05	16.38	16.22	16.46
2204	23	4	17.90	0.49	17.26	18.43	18.06	17.84
2205	23	4	16.78	0.46	16.67	17.18	16.19	17.10
2206	23	4	19.86	0.28	20.16	20.00	19.76	19.53
2201	24	4	20.45	0.41	20.27	19.98	20.91	20.66
2202	24	4	15.90	0.24	15.92	16.21	15.82	15.64
2203	24	4	16.03	0.22	15.88	15.82	16.27	16.15
2204	24	4	17.00	0.12	16.97	17.17	16.98	16.89
2205	24	4	16.45	0.22	16.75	16.49	16.24	16.32
2206	24	4	18.70	0.19	18.96	18.53	18.71	18.61
2201	25	4	19.93	0.27	19.64	19.91	20.29	19.90
2202	25	4	15.34	0.19	15.06	15.40	15.39	15.51
2203	25	4	15.82	0.21	15.67	15.98	15.61	16.01
2204	25	4	16.61	0.30	16.55	16.99	16.65	16.27
2205	25	4	15.77	0.12	15.77	15.62	15.91	15.79
2206	25	4	18.56	0.31	18.23	18.85	18.38	18.80
2201	26	4	20.88	0.26	20.64	21.25	20.78	20.87
2202	26	4	16.64	0.60	17.12	16.15	17.20	16.09
2203	26	4	16.53	0.47	16.02	16.93	16.93	16.24
2204	26	4	18.11	0.80	18.11	17.08	19.03	18.24
2205	26	4	16.95	0.88c	17.68	17.71	15.93	16.50
2206	26	4	19.36	0.36	19.74	19.50	19.30	18.89
2201	27	4	18.11	0.23	17.96	18.11	18.43	17.94
2202	27	0	12.35B	0.61	11.73	12.35	12.13	13.18
2203	27	0	13.34B	0.53	12.87	13.81	12.89	13.78
2204	27	4	16.33	0.85	16.96	16.11	15.22	17.05
2205	27	4	15.67	0.36	15.65	15.85	15.18	16.02
2206	27	4	17.84	0.32	18.01	18.19	17.54	17.61
2201	29	4	18.88	0.26	18.99	18.91	18.52	19.12
2202	29	4	15.24	0.80	15.28	15.66	14.11	15.90
2203	29	4	15.71	0.57	16.02	15.11	15.38	16.34
2204	29	4	17.02	0.30	17.11	16.73	16.82	17.40
2205	29	4	15.76	0.59	15.33	15.21	16.46	16.04
2206	29	4	18.64	0.36	18.80	18.49	18.23	19.04
2201	30	4	18.83	0.09	18.71	18.87	18.81	18.93
2202	30	4	14.64	0.15	14.45	14.77	14.59	14.75
2203	30	4	15.18	0.09	15.05	15.28	15.18	15.21

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2204	30	4	15.71	0.10	15.63	15.80	15.62	15.80
2205	30	4	15.53	0.04	15.51	15.57	15.49	15.57
2206	30	4	17.91	0.07	17.84	17.88	17.97	17.97
2201	34	4	19.22	1.09 ^c	18.08	20.64	18.75	19.42
2202	34	4	14.97	0.79	14.09	15.49	14.55	15.77
2203	34	4	14.81	0.23	14.67	14.88	15.10	14.58
2204	34	4	16.76	0.88	17.07	17.12	15.45	17.39
2205	34	4	15.68	0.42	15.81	15.25	16.20	15.46
2206	34	4	17.78	0.70	17.01	17.35	18.38	18.37
2201	112	4	21.32	0.38	20.96	21.80	21.07	21.46
2202	112	4	15.69	0.54	15.18	15.28	16.13	16.19
2203	112	4	16.05	0.32	15.57	16.20	16.29	16.12
2204	112	4	18.15	0.23	18.31	18.39	17.96	17.95
2205	112	4	16.44	0.28	16.85	16.27	16.38	16.24
2206	112	4	19.19	0.25	18.83	19.34	19.23	19.37
2201	113	4	20.34	0.68	19.68	20.60	21.18	19.90
2202	113	4	14.55	0.83	13.33	14.85	15.19	14.82
2203	113	4	14.88	0.33	14.44	15.23	14.96	14.90
2204	113	4	16.07	0.45	16.00	15.53	16.63	16.14
2205	113	4	15.56	0.82	16.16	16.13	15.52	14.42
2206	113	4	18.47	0.50	19.01	18.74	17.89	18.24
2201	125	4	19.93	0.27	19.64	19.91	20.29	19.90
2202	125	4	15.34	0.19	15.06	15.40	15.39	15.51
2203	125	4	15.82	0.21	15.67	15.98	15.61	16.01
2204	125	4	16.61	0.30	16.55	16.99	16.65	16.27
2205	125	4	15.77	0.12	15.77	15.62	15.91	15.79
2206	125	4	18.56	0.31	18.23	18.85	18.38	18.80
2201	134	4	21.06	0.21	21.16	21.30	20.83	20.96
2202	134	4	16.69	0.38	16.82	17.02	16.76	16.14
2203	134	4	16.46	0.53	16.40	16.01	16.22	17.21
2204	134	4	18.17	0.68	17.90	17.36	18.92	18.50
2205	134	4	17.16	0.26	17.52	17.16	16.97	16.99
2206	134	4	20.33	0.59	21.06	20.39	19.63	20.25
2201	212	4	21.32	0.38	20.96	21.80	21.07	21.46
2202	212	4	15.69	0.54	15.18	15.28	16.13	16.19
2203	212	4	16.05	0.32	15.57	16.20	16.29	16.12
2204	212	4	18.15	0.23	18.31	18.39	17.96	17.95
2205	212	4	16.44	0.28	16.85	16.27	16.38	16.24
2206	212	4	19.19	0.25	18.83	19.34	19.23	19.37

7.4 Rohfett / XL

7.4.1 z-Werte / z Scores

Labor/Lab	2201	2202	2203	2204	2205	2206
3	-0.73	-0.31	-0.21	0.53	0.29	-0.15
4	0.67	0.91	0.82	0.68	0.94	0.59
5	-0.63	-0.47	-0.67	-0.41	-0.46	-0.47
6	-0.95	-0.85	-0.96	-1.68	-0.98	-1.20
7	-0.30	-0.06	-0.36	-0.23	-0.52	-0.12
9	-0.36	-0.46	-0.50	-0.22	-0.31	-0.74
10	-0.26	-0.09	-0.22	-0.28	-0.32	-0.21
11	0.43	0.60	0.50	0.31	0.26	0.61
12	0.79	1.14	1.22	0.82	1.06	1.09
13	-0.26	-0.75	-0.39	-0.64	-0.63	-0.23
14	0.01	-0.15	-0.23	-0.12	-0.14	0.01
15	-0.12	-0.44	0.01	-0.12	-0.18	-0.30
16	-0.55	-0.87	-0.49	-0.15	-0.84	-0.52
22	1.18	1.56	1.40	1.66	1.77	1.42
23	-0.52	-0.96	-0.71	-0.80	-0.78	-0.85
24	-0.20	0.07	-0.69	-0.37	-0.25	-0.35
25	0.08	-0.03	-0.05	0.06	0.23	0.09
26	-0.46	-0.87	-0.42	-1.41	-0.88	-0.21
27	-0.57	0.07	-0.29	-0.28	-0.36	-0.80
29	-0.97	-0.98	-0.78	-0.43	-0.48	-0.60
30	0.79	0.50	0.47	0.03	0.33	0.83
34	0.05	-0.36	-0.26	0.25	-0.42	0.06
112	1.34	1.40	1.41	1.28	1.35	1.12
113	-0.61	-1.01	-0.84	-1.01	-1.15	-0.76
125	0.08	-0.03	-0.05	0.06	0.23	0.09
134	0.73	1.05	0.88	1.20	0.87	0.46
212	1.34	1.40	1.41	1.28	1.35	1.12

7.4.2 Einzelwerte / Single Values

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single values			
2201	3	4	2.13	0.02	2.14	2.14	2.12	2.10
2202	3	4	2.65	0.06	2.69	2.56	2.65	2.70
2203	3	4	2.49	0.16	2.27	2.59	2.49	2.62
2204	3	4	3.20	0.15	3.07	3.07	3.28	3.36
2205	3	4	2.91	0.14	2.84	3.11	2.81	2.86
2206	3	4	2.15	0.15c	2.13	1.98	2.35	2.13
2201	4	4	2.55	0.06	2.55	2.48	2.62	2.54
2202	4	4	3.02	0.03	3.00	3.00	3.05	3.01
2203	4	4	2.80	0.07	2.77	2.71	2.84	2.87
2204	4	4	3.24	0.05	3.18	3.23	3.29	3.27
2205	4	4	3.10	0.03	3.08	3.11	3.07	3.13
2206	4	4	2.37	0.05	2.30	2.39	2.39	2.40
2201	5	4	2.16	0.03	2.15	2.16	2.13	2.19
2202	5	4	2.60	0.05	2.62	2.67	2.54	2.58
2203	5	4	2.35	0.03	2.33	2.38	2.32	2.37
2204	5	4	2.91	0.04	2.87	2.96	2.95	2.88
2205	5	4	2.68	0.06	2.59	2.71	2.73	2.69

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2206	5	4	2.05	0.04	2.11	2.01	2.03	2.07
2201	6	4	2.06	0.07	1.97	2.05	2.11	2.13
2202	6	4	2.49	0.07	2.58	2.44	2.42	2.51
2203	6	4	2.26	0.13	2.15	2.26	2.45	2.20
2204	6	4	2.53	0.09	2.61	2.62	2.46	2.44
2205	6	4	2.52	0.04	2.53	2.58	2.48	2.51
2206	6	4	1.83	0.09	1.92	1.75	1.76	1.90
2201	7	4	2.26	0.04	2.23	2.26	2.31	2.24
2202	7	4	2.73	0.13	2.62	2.91	2.70	2.67
2203	7	4	2.45	0.11	2.54	2.29	2.48	2.48
2204	7	4	2.97	0.10	2.87	3.06	2.90	3.04
2205	7	4	2.66	0.02	2.69	2.65	2.63	2.67
2206	7	4	2.16	0.06	2.21	2.07	2.17	2.17
2201	9	4	2.24	0.13	2.20	2.08	2.35	2.33
2202	9	4	2.60	0.21c	2.71	2.85	2.42	2.43
2203	9	4	2.40	0.10	2.34	2.46	2.51	2.30
2204	9	4	2.97	0.10	3.05	2.93	3.05	2.86
2205	9	4	2.73	0.13	2.62	2.91	2.71	2.65
2206	9	4	1.97	0.12	1.81	2.06	1.95	2.07
2201	10	4	2.27	0.05	2.22	2.24	2.33	2.30
2202	10	4	2.72	0.08	2.68	2.63	2.79	2.77
2203	10	4	2.49	0.03	2.50	2.48	2.52	2.45
2204	10	4	2.96	0.04	3.00	2.96	2.91	2.95
2205	10	4	2.72	0.06	2.63	2.75	2.74	2.77
2206	10	4	2.13	0.07	2.15	2.22	2.09	2.06
2201	11	4	2.48	0.04	2.52	2.49	2.42	2.47
2202	11	4	2.92	0.04	2.94	2.88	2.96	2.91
2203	11	4	2.70	0.02	2.69	2.71	2.69	2.73
2204	11	4	3.13	0.02	3.13	3.16	3.11	3.12
2205	11	4	2.89	0.04	2.85	2.94	2.88	2.91
2206	11	4	2.38	0.03	2.35	2.40	2.40	2.36
2201	12	4	2.59	0.09	2.56	2.62	2.48	2.69
2202	12	4	3.09	0.05	3.07	3.09	3.04	3.14
2203	12	4	2.92	0.04	2.92	2.96	2.92	2.88
2204	12	4	3.28	0.12	3.15	3.21	3.37	3.39
2205	12	4	3.14	0.05	3.09	3.12	3.21	3.13
2206	12	4	2.52	0.05	2.53	2.52	2.46	2.59
2201	13	4	2.27	0.03	2.27	2.23	2.29	2.28
2202	13	4	2.52	0.08	2.44	2.61	2.56	2.46
2203	13	4	2.44	0.03	2.39	2.44	2.46	2.45
2204	13	4	2.85	0.06	2.85	2.88	2.76	2.90
2205	13	4	2.63	0.05	2.62	2.59	2.70	2.60
2206	13	4	2.12	0.09	2.21	2.06	2.20	2.03
2201	14	4	2.35	0.06	2.32	2.29	2.36	2.44
2202	14	4	2.70	0.06	2.65	2.69	2.67	2.78
2203	14	4	2.49	0.02	2.47	2.48	2.51	2.48
2204	14	4	3.00	0.07	2.99	3.06	2.91	3.04
2205	14	4	2.78	0.03	2.75	2.76	2.80	2.81
2206	14	4	2.20	0.09	2.32	2.22	2.12	2.12
2201	15	4	2.31	0.03	2.33	2.32	2.33	2.27
2202	15	4	2.61	0.07	2.71	2.60	2.60	2.53
2203	15	5	2.56	0.06	2.57	2.49	2.65	2.54
2204	15	4	3.00	0.11	3.10	3.00	3.06	2.85

2.53

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2205	15	4	2.76	0.07	2.81	2.81	2.66	2.77
2206	15	4	2.10	0.02	2.09	2.08	2.13	2.12
2201	16	4	2.18	0.08	2.21	2.07	2.23	2.22
2202	16	4	2.48	0.03	2.48	2.46	2.47	2.52
2203	16	4	2.41	0.05	2.45	2.35	2.45	2.37
2204	16	4	2.99	0.03	2.97	2.98	3.04	2.98
2205	16	4	2.57	0.04	2.59	2.54	2.62	2.52
2206	16	4	2.04	0.03	2.00	2.06	2.02	2.07
2201	22	4	2.70	0.06	2.71	2.64	2.67	2.78
2202	22	4	3.21	0.09	3.25	3.07	3.27	3.25
2203	22	4	2.97	0.09	2.88	2.99	3.10	2.93
2204	22	4	3.54	0.13	3.34	3.58	3.63	3.60
2205	22	4	3.35	0.02	3.37	3.35	3.35	3.33
2206	22	4	2.62	0.10	2.50	2.73	2.60	2.65
2201	23	4	2.19	0.09	2.26	2.25	2.06	2.19
2202	23	4	2.46	0.05	2.40	2.45	2.51	2.46
2203	23	4	2.34	0.08	2.25	2.44	2.30	2.38
2204	23	4	2.80	0.12	2.93	2.71	2.88	2.67
2205	23	4	2.58	0.08	2.47	2.59	2.66	2.62
2206	23	4	1.94	0.04	1.89	1.94	2.00	1.93
2201	24	4	2.29	0.09	2.21	2.39	2.35	2.20
2202	24	4	2.76	0.10	2.81	2.68	2.88	2.69
2203	24	4	2.35	0.03	2.38	2.35	2.35	2.30
2204	24	4	2.93	0.08	2.87	2.86	2.98	3.00
2205	24	4	2.74	0.03	2.71	2.77	2.77	2.73
2206	24	4	2.09	0.05	2.10	2.15	2.03	2.07
2201	25	4	2.37	0.04	2.42	2.34	2.35	2.38
2202	25	4	2.73	0.05	2.77	2.79	2.68	2.69
2203	25	4	2.54	0.03	2.51	2.54	2.58	2.52
2204	25	4	3.06	0.05	3.01	3.09	3.02	3.11
2205	25	4	2.89	0.05	2.87	2.95	2.89	2.84
2206	25	4	2.22	0.03	2.24	2.25	2.21	2.19
2201	26	4	2.21	0.12	2.08	2.20	2.20	2.36
2202	26	4	2.48	0.03	2.46	2.53	2.47	2.46
2203	26	4	2.43	0.09	2.40	2.43	2.34	2.55
2204	26	4	2.62	0.07	2.55	2.56	2.64	2.71
2205	26	4	2.55	0.12	2.45	2.46	2.70	2.61
2206	26	4	2.13	0.03	2.10	2.16	2.16	2.10
2201	27	4	2.18	0.12	2.28	2.24	2.15	2.02
2202	27	4	2.76	0.21	2.62	3.08	2.70	2.66
2203	27	4	2.47	0.19c	2.69	2.30	2.33	2.54
2204	27	4	2.95	0.14	2.82	3.12	2.87	3.01
2205	27	4	2.71	0.16	2.68	2.88	2.76	2.51
2206	27	4	1.95	0.09	2.08	1.87	1.93	1.94
2201	29	4	2.06	0.16	2.17	2.16	1.82	2.07
2202	29	4	2.45	0.19	2.25	2.45	2.38	2.71
2203	29	4	2.32	0.09	2.41	2.30	2.37	2.21
2204	29	4	2.91	0.17	2.88	2.81	2.79	3.15
2205	29	4	2.67	0.19c	2.66	2.91	2.67	2.44
2206	29	4	2.01	0.08	2.06	2.07	2.03	1.89
2201	30	4	2.58	0.03	2.62	2.58	2.60	2.55
2202	30	4	2.89	0.02	2.90	2.89	2.90	2.87
2203	30	4	2.70	0.01	2.69	2.71	2.68	2.69

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2204	30	4	3.05	0.02	3.06	3.05	3.02	3.05
2205	30	4	2.92	0.01	2.91	2.93	2.92	2.90
2206	30	4	2.44	0.03	2.47	2.40	2.44	2.46
2201	34	4	2.36	0.11	2.34	2.38	2.50	2.23
2202	34	4	2.63	0.05	2.67	2.69	2.61	2.57
2203	34	4	2.47	0.08	2.59	2.40	2.43	2.49
2204	34	4	3.11	0.12	3.05	2.99	3.26	3.15
2205	34	4	2.69	0.04	2.69	2.64	2.73	2.71
2206	34	4	2.21	0.08	2.22	2.31	2.20	2.12
2201	112	4	2.75	0.05	2.67	2.79	2.78	2.76
2202	112	4	3.16	0.08	3.14	3.27	3.08	3.15
2203	112	4	2.98	0.06	3.01	2.88	3.00	3.02
2204	112	4	3.42	0.13	3.49	3.39	3.25	3.57
2205	112	4	3.22	0.09	3.31	3.21	3.27	3.10
2206	112	4	2.53	0.05	2.57	2.54	2.54	2.46
2201	113	4	2.17	0.12	2.02	2.13	2.29	2.22
2202	113	4	2.44	0.05	2.51	2.38	2.43	2.43
2203	113	4	2.30	0.07	2.29	2.20	2.37	2.34
2204	113	4	2.74	0.06	2.66	2.76	2.81	2.71
2205	113	4	2.47	0.05	2.45	2.42	2.51	2.52
2206	113	4	1.97	0.05	1.92	2.04	1.98	1.93
2201	125	4	2.37	0.04	2.42	2.34	2.35	2.38
2202	125	4	2.73	0.05	2.77	2.79	2.68	2.69
2203	125	4	2.54	0.03	2.51	2.54	2.58	2.52
2204	125	4	3.06	0.05	3.01	3.09	3.02	3.11
2205	125	4	2.89	0.05	2.87	2.95	2.89	2.84
2206	125	4	2.22	0.03	2.24	2.25	2.21	2.19
2201	134	4	2.57	0.08	2.68	2.48	2.54	2.57
2202	134	4	3.06	0.04	3.04	3.12	3.05	3.02
2203	134	4	2.82	0.11	2.85	2.89	2.88	2.66
2204	134	4	3.40	0.12	3.23	3.50	3.44	3.43
2205	134	4	3.08	0.06	3.15	3.03	3.11	3.02
2206	134	4	2.33	0.06	2.25	2.35	2.37	2.37
2201	212	4	2.75	0.05	2.67	2.79	2.78	2.76
2202	212	4	3.16	0.08	3.14	3.27	3.08	3.15
2203	212	4	2.98	0.06	3.01	2.88	3.00	3.02
2204	212	4	3.42	0.13	3.49	3.39	3.25	3.57
2205	212	4	3.22	0.09	3.31	3.21	3.27	3.10
2206	212	4	2.53	0.05	2.57	2.54	2.54	2.46

7.5 Stärke / XS

7.5.1 z-Werte / z Scores

Labor/Lab	2201	2202	2203	2204	2205	2206
3	-0.26	-0.31	0.08	-0.62	-1.40	-0.33
4	-1.80	-1.12	-2.06	-2.10	-0.93	-1.67
5	-0.61	-0.90	-0.47	0.30	-0.11	0.65
6	-0.35	-2.03	-2.28	-0.64	-1.66	-0.55
7	0.14	-0.82	-0.07	-1.11	-1.24	-0.35
9	2.02	1.52	0.73	1.01	2.24	1.44
10	-0.13	-0.30	-0.44	-0.40	-0.58	-0.35
11	0.68	0.29	0.64	0.38	0.30	0.88
12	-0.25	0.21	-0.26	-1.01	0.22	0.11
13	0.63	-0.65	-0.45	-0.35	-0.30	-0.32
14	-0.54	-0.67	-0.50	-0.22	-0.03	-0.42
15	-0.80	0.02	-0.73	0.35	0.63	-0.43
16	0.23	0.40	0.59	0.63	0.51	0.59
22	-0.08	1.02	0.45	0.73	1.11	0.60
23	-0.24	0.09	1.16	-0.68	0.32	-0.93
24	0.06	-0.14	-0.11	0.34	-0.16	0.33
25	0.19	0.28	0.05	1.01	0.39	0.15
26	-1.25	-2.01	-1.11	-1.63	-1.49	-1.74
27	1.25	1.77	1.67	-0.53	-1.16	-0.71
29	1.97	0.81	0.82	1.05	0.40	0.50
30	2.27	1.85	2.09	3.14	1.73	2.54
34	0.00	-0.16	0.30	-0.02	0.12	0.22
112	-1.45	0.14	-0.22	-0.78	0.19	-0.26
113	-0.12	1.27	1.35	1.60	0.76	1.09
125	0.19	0.28	0.05	1.01	0.39	0.15
134	-0.32	-0.96	-1.07	-0.68	-0.44	-0.94
212	-1.45	0.14	-0.22	-0.78	0.19	-0.26

7.5.2 Einzelwerte / Single Values

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single values			
2201	3	4	29.66	0.52	30.02	28.94	30.05	29.62
2202	3	4	39.37	0.36	39.47	38.87	39.42	39.73
2203	3	4	34.22	0.46	33.62	34.13	34.65	34.49
2204	3	4	36.44	0.45	35.99	36.88	36.77	36.12
2205	3	4	37.25	0.44	37.04	36.99	37.91	37.05
2206	3	4	29.38	0.21	29.36	29.69	29.26	29.22
2201	4	4	27.34	0.79	27.48	28.07	26.21	27.59
2202	4	4	38.15	0.49	38.15	38.55	37.45	38.44
2203	4	4	31.02	0.41	31.50	30.86	31.16	30.55
2204	4	4	34.22	0.18	34.46	34.13	34.26	34.04
2205	4	4	37.95	0.37	38.14	38.13	37.39	38.15
2206	4	4	27.37	0.23	27.24	27.63	27.12	27.47
2201	5	4	29.12	0.31	29.27	29.38	29.16	28.67
2202	5	4	38.48	0.41	38.30	39.09	38.29	38.23
2203	5	4	33.41	0.38	33.46	33.14	33.11	33.92
2204	5	4	37.83	0.32	38.04	37.61	38.16	37.50
2205	5	4	39.19	0.39	38.66	39.29	39.60	39.20

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2206	5	4	30.85	0.23	31.05	31.05	30.67	30.63
2201	6	4	29.52	0.62	29.11	30.42	29.45	29.11
2202	6	4	36.78	0.65	35.91	37.48	36.89	36.86
2203	6	4	30.69	0.15	30.82	30.53	30.81	30.60
2204	6	4	36.41	0.34	36.54	36.37	35.96	36.78
2205	6	4	36.86	0.76	37.83	36.74	36.89	35.99
2206	6	4	29.04	0.57	29.25	28.32	28.93	29.67
2201	7	4	30.26	0.63	30.54	30.88	29.41	30.19
2202	7	4	38.60	0.32	38.89	38.87	38.35	38.29
2203	7	4	34.00	1.05	32.92	34.73	35.05	33.30
2204	7	4	35.71	0.26	35.82	35.54	35.45	36.03
2205	7	4	37.49	0.70	36.70	37.70	38.34	37.22
2206	7	4	29.34	0.58	30.05	29.43	29.25	28.64
2201	9	4	33.07	0.63	33.66	33.42	32.98	32.23
2202	9	4	42.11	0.36	41.93	42.44	41.69	42.37
2203	9	4	35.20	0.96	35.39	35.02	34.03	36.36
2204	9	4	38.89	1.36	39.25	36.87	39.73	39.71
2205	9	4	42.72	0.73	43.69	42.57	42.71	41.91
2206	9	4	32.03	0.31	32.26	31.64	31.93	32.29
2201	10	4	29.85	0.45	30.12	30.04	30.08	29.17
2202	10	4	39.38	0.48	38.82	39.99	39.29	39.44
2203	10	4	33.45	0.46	33.57	33.22	32.97	34.03
2204	10	4	36.77	0.47	37.03	36.79	36.10	37.15
2205	10	4	38.49	1.08	37.03	39.38	39.23	38.30
2206	10	4	29.35	0.33	29.04	29.78	29.42	29.14
2201	11	4	31.07	0.18	31.08	31.00	30.88	31.31
2202	11	4	40.27	0.49	40.60	40.27	40.62	39.57
2203	11	4	35.07	0.37	35.25	34.87	35.50	34.66
2204	11	4	37.94	0.21	38.07	37.65	38.12	37.93
2205	11	4	39.80	0.43	39.16	40.13	39.94	39.95
2206	11	4	31.19	0.15	31.15	31.08	31.13	31.42
2201	12	4	29.66	1.15	30.13	30.81	29.59	28.11
2202	12	4	40.15	0.40	40.55	40.39	39.65	40.01
2203	12	4	33.72	0.61	32.88	34.06	33.68	34.26
2204	12	4	35.86	0.67	35.59	36.54	36.25	35.05
2205	12	4	39.69	0.49	39.07	39.61	39.83	40.25
2206	12	4	30.03	0.49	30.70	29.59	29.74	30.09
2201	13	4	30.99	0.52	30.45	30.65	31.49	31.38
2202	13	4	38.85	0.88	38.06	38.17	39.26	39.89
2203	13	4	33.43	0.56	34.02	32.89	33.03	33.79
2204	13	4	36.85	0.98	37.41	35.67	37.86	36.46
2205	13	4	38.90	0.10	38.82	38.94	38.81	39.02
2206	13	4	29.40	1.45	28.74	27.80	29.92	31.13
2201	14	4	29.23	0.72	29.97	28.84	28.43	29.68
2202	14	4	38.83	0.36	38.50	38.78	39.33	38.70
2203	14	4	33.35	0.37	32.82	33.66	33.50	33.43
2204	14	4	37.04	0.07	36.98	37.06	37.12	36.98
2205	14	4	39.30	0.46	38.94	39.35	39.93	38.99
2206	14	4	29.25	0.50	29.74	28.62	29.54	29.08
2201	15	4	28.85	1.10	29.34	27.26	29.04	29.75
2202	15	4	39.87	0.14	39.84	39.81	39.75	40.07
2203	15	5	33.02	0.64	32.97	32.25	32.97	34.02
2204	15	4	37.90	0.43	38.33	37.34	38.13	37.81

32.87

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2205	15	4	40.30	1.10	41.72	39.74	40.57	39.19
2206	15	4	29.23	0.11	29.15	29.18	29.20	29.39
2201	16	4	30.39	0.84	29.62	31.18	29.70	31.05
2202	16	4	40.43	0.28	40.16	40.82	40.46	40.29
2203	16	4	34.99	1.45	33.62	34.00	35.60	36.74
2204	16	4	38.31	0.54	38.17	38.91	37.64	38.54
2205	16	4	40.12	0.77	40.01	41.23	39.49	39.75
2206	16	4	30.76	1.64c	32.15	30.57	28.52	31.79
2201	22	4	29.92	0.45	30.30	29.85	30.20	29.31
2202	22	4	41.35	0.69	41.36	41.88	40.37	41.80
2203	22	4	34.78	0.60	35.26	35.35	34.30	34.22
2204	22	4	38.47	0.75	37.45	39.06	38.36	39.01
2205	22	4	41.02	0.50	41.65	40.53	41.18	40.73
2206	22	4	30.78	0.44	31.40	30.80	30.44	30.48
2201	23	4	29.68	1.04	29.27	30.78	28.44	30.24
2202	23	4	39.96	1.21	39.57	41.53	40.09	38.64
2203	23	4	35.85	1.52	37.98	35.32	34.39	35.70
2204	23	4	36.36	0.42	36.15	35.89	36.85	36.53
2205	23	4	39.83	0.99	41.32	39.31	39.36	39.34
2206	23	4	28.47	0.42	28.15	28.13	29.00	28.61
2201	24	4	30.13	0.93	30.41	31.26	29.07	29.80
2202	24	4	39.62	0.65	40.07	38.66	39.88	39.87
2203	24	4	33.94	0.66	34.87	33.87	33.35	33.65
2204	24	4	37.88	0.58	38.73	37.44	37.74	37.62
2205	24	4	39.12	0.51	38.58	38.85	39.72	39.33
2206	24	4	30.36	0.48	29.66	30.51	30.68	30.60
2201	25	4	30.33	0.44	29.99	30.88	29.97	30.49
2202	25	4	40.25	0.47	40.94	39.91	40.08	40.04
2203	25	4	34.18	0.39	34.74	34.04	34.10	33.84
2204	25	4	38.88	0.79	38.77	37.91	39.02	39.82
2205	25	4	39.94	0.14	39.91	40.11	39.78	39.97
2206	25	4	30.10	0.35	30.55	29.94	30.18	29.74
2201	26	4	28.17	1.01	29.57	27.45	28.25	27.42
2202	26	4	36.82	1.59c	35.57	37.91	35.34	38.45
2203	26	4	32.44	1.09	33.90	31.60	31.59	32.65
2204	26	4	34.93	1.87c	34.84	37.48	33.01	34.39
2205	26	4	37.12	1.35	36.08	36.47	39.08	36.83
2206	26	4	27.26	1.02	26.56	26.91	26.79	28.77
2201	27	4	31.91	0.13	31.82	31.86	32.11	31.86
2202	27	4	42.48	0.68	42.96	42.00	43.16	41.80
2203	27	4	36.62	0.36	36.98	36.66	36.70	36.12
2204	27	4	36.57	0.96	36.04	37.14	37.59	35.52
2205	27	4	37.61	0.66	37.78	37.07	38.48	37.11
2206	27	4	28.81	0.78	29.07	27.68	29.49	28.99
2201	29	4	33.00	0.58	32.55	33.30	33.68	32.48
2202	29	4	41.04	0.61	40.59	40.75	41.94	40.87
2203	29	4	35.34	0.53	35.27	35.38	36.01	34.71
2204	29	4	38.95	0.57	38.88	39.73	38.81	38.38
2205	29	4	39.96	0.90	39.77	41.28	39.33	39.46
2206	29	4	30.62	0.59	30.07	30.70	31.41	30.29
2201	30	4	33.45	0.06	33.53	33.46	33.38	33.42
2202	30	4	42.60	0.13	42.76	42.54	42.65	42.46
2203	30	4	37.25	0.22	37.51	37.15	37.33	36.99

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2204	30	4	42.08b	0.18	42.23	42.07	42.19	41.84
2205	30	4	41.95	0.05	41.97	41.92	42.02	41.92
2206	30	4	33.68	0.15	33.77	33.83	33.63	33.49
2201	34	4	30.05	1.56	31.34	27.88	29.98	30.99
2202	34	4	39.59	1.22	40.44	39.84	40.26	37.80
2203	34	4	34.56	0.96	34.83	33.17	35.38	34.85
2204	34	4	37.34	0.71	36.56	36.93	37.80	38.06
2205	34	4	39.53	0.43	39.29	40.02	39.08	39.73
2206	34	4	30.21	0.63	31.12	29.70	29.92	30.11
2201	112	4	27.87	0.82	28.81	27.57	28.19	26.90
2202	112	4	40.04	0.65	40.82	40.28	39.73	39.32
2203	112	4	33.78	0.47	34.26	33.53	33.25	34.06
2204	112	4	36.20	1.31	35.39	34.93	37.85	36.62
2205	112	4	39.64	0.61	38.90	39.87	39.45	40.32
2206	112	4	29.48	0.93	30.10	28.63	28.75	30.44
2201	113	4	29.86	1.35	31.27	30.00	28.03	30.14
2202	113	4	41.73	1.19	43.47	41.53	40.94	40.99
2203	113	4	36.13	0.97	37.43	36.04	35.10	35.94
2204	113	4	39.77	0.98	39.99	40.88	38.51	39.70
2205	113	4	40.49	1.09	39.56	39.74	40.73	41.93
2206	113	4	31.51	1.16	31.09	30.06	32.33	32.55
2201	125	4	30.33	0.44	29.99	30.88	29.97	30.49
2202	125	4	40.25	0.47	40.94	39.91	40.08	40.04
2203	125	4	34.18	0.39	34.74	34.04	34.10	33.84
2204	125	4	38.88	0.79	38.77	37.91	39.02	39.82
2205	125	4	39.94	0.14	39.91	40.11	39.78	39.97
2206	125	4	30.10	0.35	30.55	29.94	30.18	29.74
2201	134	4	29.55	0.54	30.03	29.57	29.82	28.80
2202	134	4	38.40	0.98	38.28	37.30	38.32	39.69
2203	134	4	32.50	0.97	31.33	33.12	32.10	33.44
2204	134	4	36.35	1.61	38.18	37.08	34.55	35.57
2205	134	4	38.70	0.28	38.58	38.98	38.88	38.36
2206	134	4	28.46	0.84	27.70	27.79	29.37	28.99
2201	212	4	27.87	0.82	28.81	27.57	28.19	26.90
2202	212	4	40.04	0.65	40.82	40.28	39.73	39.32
2203	212	4	33.78	0.47	34.26	33.53	33.25	34.06
2204	212	4	36.20	1.31	35.39	34.93	37.85	36.62
2205	212	4	39.64	0.61	38.90	39.87	39.45	40.32
2206	212	4	29.48	0.93	30.10	28.63	28.75	30.44

7.6 Zucker / XZ

7.6.1 z-Werte / z Scores

Labor/Lab	2201	2202	2203	2204	2205	2206
3	0.97	1.33	0.37	0.08	1.08	0.17
4	0.45	0.60	0.96	0.15	0.28	0.48
5	-0.70	-0.47	-1.17	-0.05	-0.81	-1.41
6	0.73	1.43	1.41	1.14	1.25	0.87
7	-1.49	-1.50	-1.49	-0.62	-1.58	-1.24
9	-1.75	-2.14	-1.50	-1.67	-2.23	-1.59
10	-0.98	-0.59	-0.87	-0.50	-0.87	-0.83
11	-1.15	-1.21	-1.19	-0.69	-1.08	-1.18
12	0.33	0.64	0.90	0.66	0.74	0.75
13	-0.62	-0.36	-0.42	-0.52	-0.71	-0.27
14	-0.32	-0.15	-0.03	-0.15	-0.39	-0.06
15	0.25	0.01	0.48	-0.09	-0.26	-0.00
16	0.42	-0.34	0.12	-0.15	-0.53	0.49
22	0.73	0.15	0.91	0.74	0.53	1.13
23	-0.84	-1.26	-1.42	-0.37	-0.72	-1.06
24	0.17	0.11	0.33	-0.01	-0.16	-0.21
25	0.14	0.16	0.08	-0.11	0.14	0.36
26	-2.14	-1.43	-1.86	-0.91	-1.13	-1.48
27	0.91	1.72	1.57	3.40	3.08	2.67
29	-0.70	-0.49	-0.44	-0.90	-0.28	-0.27
30	1.31	1.65	0.60	0.88	1.75	0.60
34	0.88	0.73	0.78	0.70	0.82	0.61
112	1.14	0.54	0.81	0.97	0.54	0.78
113	0.22	-0.77	-0.82	-0.76	-1.02	-0.92
125	0.14	0.16	0.08	-0.11	0.14	0.36
134	0.77	0.96	0.98	1.31	0.88	0.49
212	1.14	0.54	0.81	0.97	0.54	0.78

7.6.2 Einzelwerte / Single Values

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single values				
2201	3	4	10.23	0.23	10.37	9.91	10.22	10.41	
2202	3	4	8.43	0.18	8.67	8.24	8.35	8.45	
2203	3	4	12.06	0.43	12.66	11.62	11.97	12.01	
2204	3	4	5.51	0.47	6.09	5.20	5.06	5.70	
2205	3	4	7.96	0.16	7.89	8.19	7.84	7.93	
2206	3	4	11.17	0.22	10.86	11.18	11.30	11.36	
2201	4	4	9.84	0.26	9.80	9.64	10.21	9.69	
2202	4	4	7.88	0.16	7.91	7.93	8.04	7.66	
2203	4	4	12.50	0.34	12.26	12.52	12.25	12.98	
2204	4	4	5.57	0.18	5.55	5.35	5.80	5.56	
2205	4	4	7.35	0.14	7.42	7.15	7.37	7.47	
2206	4	4	11.41	0.14	11.27	11.33	11.44	11.59	
2201	5	4	8.97	0.10	9.12	8.91	8.91	8.95	
2202	5	4	7.08	0.19	7.07	7.20	7.23	6.82	
2203	5	4	10.91	0.21	10.97	11.17	10.77	10.71	
2204	5	4	5.42	0.09	5.48	5.46	5.44	5.29	
2205	5	4	6.54	0.09	6.60	6.63	6.51	6.43	

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values				
2206	5	4	9.99	0.17	10.15	9.75	10.00	10.07	
2201	6	4	10.05	0.42	9.98	10.66	9.77	9.78	
2202	6	4	8.50	0.20	8.54	8.30	8.40	8.76	
2203	6	4	12.84	0.67	12.48	12.23	13.77	12.89	
2204	6	4	6.31	0.20	6.31	6.51	6.04	6.38	
2205	6	4	8.09	0.30	8.37	7.69	8.02	8.27	
2206	6	4	11.70	0.31	12.00	11.27	11.80	11.73	
2201	7	4	8.39	0.37	8.06	8.10	8.83	8.56	
2202	7	4	6.31	0.17	6.13	6.44	6.19	6.47	
2203	7	4	10.67	0.33	10.91	10.22	10.64	10.91	
2204	7	4	4.99	0.14	5.04	4.78	5.05	5.08	
2205	7	4	5.97	0.28	6.10	5.82	5.66	6.29	
2206	7	4	10.12	0.13	10.18	9.93	10.18	10.21	
2201	9	4	8.19	0.37	8.54	7.67	8.28	8.26	
2202	9	4	5.82	0.19	5.96	5.68	5.63	6.02	
2203	9	4	10.66	0.57	9.85	10.83	11.17	10.78	
2204	9	4	4.20	0.16	4.20	3.98	4.25	4.36	
2205	9	4	5.48	0.17	5.43	5.35	5.40	5.72	
2206	9	4	9.86	0.25	9.53	10.13	9.82	9.96	
2201	10	4	8.77	0.32	8.35	8.68	9.06	8.99	
2202	10	4	6.99	0.25	6.89	6.72	7.30	7.05	
2203	10	4	11.13	0.27	11.17	11.04	11.48	10.84	
2204	10	4	5.08	0.18	5.26	5.14	4.83	5.07	
2205	10	4	6.50	0.11	6.66	6.44	6.44	6.46	
2206	10	4	10.42	0.15	10.53	10.54	10.40	10.22	
2201	11	4	8.64	0.29	8.83	8.94	8.32	8.47	
2202	11	4	6.52	0.08	6.63	6.44	6.48	6.54	
2203	11	4	10.89	0.09	10.80	11.01	10.85	10.92	
2204	11	4	4.94	0.15	5.03	5.08	4.73	4.91	
2205	11	4	6.34	0.14	6.47	6.22	6.45	6.22	
2206	11	4	10.16	0.09	10.05	10.16	10.18	10.27	
2201	12	4	9.75	0.28	9.46	9.62	9.79	10.12	
2202	12	4	7.91	0.30	7.54	7.96	8.28	7.86	
2203	12	4	12.46	0.23	12.59	12.30	12.73	12.23	
2204	12	4	5.95	0.18	5.82	5.77	6.11	6.09	
2205	12	4	7.71	0.20	7.92	7.53	7.84	7.53	
2206	12	4	11.61	0.11	11.52	11.77	11.58	11.59	
2201	13	4	9.04	0.39	9.29	9.30	9.09	8.46	
2202	13	4	7.17	1.00C	6.77	8.61	6.96	6.33	
2203	13	4	11.47	0.45	11.49	11.83	11.74	10.82	
2204	13	4	5.06	0.29	5.25	5.35	4.95	4.71	
2205	13	4	6.61	0.33	6.15	6.83	6.87	6.59	
2206	13	4	10.84	0.68C	11.40	11.10	11.02	9.85	
2201	14	4	9.26	0.20	9.04	9.34	9.50	9.16	
2202	14	4	7.32	0.08	7.34	7.21	7.33	7.40	
2203	14	4	11.76	0.16	12.00	11.72	11.65	11.68	
2204	14	4	5.34	0.17	5.39	5.56	5.19	5.23	
2205	14	4	6.86	0.11	6.98	6.80	6.92	6.73	
2206	14	4	11.00	0.10	11.06	11.00	11.07	10.86	
2201	15	4	9.69	0.15	9.61	9.56	9.90	9.67	
2202	15	4	7.44	0.11	7.57	7.40	7.31	7.46	
2203	15	5	12.14	0.15	12.25	12.00	12.35	12.00	12.12
2204	15	4	5.38	0.17	5.46	5.33	5.57	5.17	

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2205	15	4	6.95	0.12	6.91	7.11	6.84	6.96
2206	15	4	11.05	0.04	11.11	11.03	11.04	11.01
2201	16	4	9.82	0.17	9.93	9.69	9.99	9.66
2202	16	4	7.18	0.22	7.25	6.98	7.45	7.02
2203	16	4	11.88	0.16	12.02	11.99	11.84	11.66
2204	16	4	5.34	0.09	5.30	5.36	5.25	5.46
2205	16	4	6.75	0.15	6.81	6.53	6.86	6.79
2206	16	4	11.42	0.24	11.06	11.56	11.58	11.46
2201	22	4	10.05	0.46	10.15	10.43	9.38	10.23
2202	22	4	7.54	0.27	7.74	7.23	7.80	7.40
2203	22	4	12.47	0.31	12.13	12.28	12.68	12.78
2204	22	4	6.01	0.24	6.05	5.91	6.32	5.74
2205	22	4	7.54	0.26	7.18	7.69	7.76	7.55
2206	22	4	11.89	0.22	11.90	11.98	12.12	11.59
2201	23	4	8.87	0.14	8.73	8.88	8.81	9.05
2202	23	4	6.48	0.28	6.46	6.10	6.69	6.69
2203	23	4	10.72	0.43	10.12	10.83	11.14	10.80
2204	23	4	5.18	0.06	5.18	5.20	5.10	5.22
2205	23	4	6.61	0.18	6.35	6.76	6.70	6.62
2206	23	4	10.25	0.27	10.08	10.08	10.66	10.18
2201	24	4	9.63	0.23	9.43	9.62	9.96	9.53
2202	24	4	7.51	0.23	7.67	7.38	7.74	7.26
2203	24	4	12.03	0.48	11.32	12.37	12.30	12.14
2204	24	4	5.44	0.43	4.88	5.94	5.44	5.51
2205	24	4	7.03	0.20	7.04	7.11	7.22	6.75
2206	24	4	10.89	0.18	11.08	10.99	10.69	10.79
2201	25	4	9.61	0.26	9.98	9.53	9.55	9.38
2202	25	4	7.55	0.13	7.55	7.68	7.59	7.37
2203	25	4	11.85	0.27	11.80	11.60	12.23	11.75
2204	25	4	5.37	0.23	5.30	5.68	5.36	5.13
2205	25	4	7.25	0.08	7.18	7.19	7.36	7.27
2206	25	4	11.32	0.23	11.43	11.26	11.55	11.03
2201	26	4	7.90	0.35	7.49	8.05	7.75	8.29
2202	26	4	6.36	0.14	6.32	6.41	6.52	6.18
2203	26	4	10.39	0.25	10.07	10.38	10.42	10.69
2204	26	4	4.77	0.24	4.89	4.62	4.53	5.05
2205	26	4	6.30	0.26	5.97	6.20	6.50	6.53
2206	26	4	9.94	0.16	9.99	10.13	9.87	9.77
2201	27	4	10.18	0.29	10.60	10.06	9.95	10.11
2202	27	4	8.72	0.50	9.09	9.21	8.20	8.40
2203	27	4	12.96	0.40	12.79	12.78	13.57	12.72
2204	27	0	8.00B	0.33	8.21	7.52	8.05	8.21
2205	27	4	9.46	0.27	9.16	9.78	9.34	9.54
2206	27	4	13.05	0.16	12.90	13.26	12.97	13.07
2201	29	4	8.98	0.40	9.02	9.34	8.41	9.14
2202	29	4	7.06	0.32	6.79	7.51	7.07	6.88
2203	29	4	11.45	0.36	11.01	11.39	11.89	11.52
2204	29	4	4.78	0.41	4.16	5.05	4.99	4.91
2205	29	4	6.94	0.58C	7.62	6.66	7.18	6.29
2206	29	4	10.84	0.38	10.35	10.88	10.89	11.26
2201	30	4	10.49	0.09	10.57	10.50	10.36	10.51
2202	30	4	8.67	0.16	8.75	8.44	8.82	8.66
2203	30	4	12.24	0.10	12.11	12.34	12.20	12.30

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2204	30	4	6.11	0.02	6.10	6.10	6.14	6.11
2205	30	4	8.46	0.06	8.51	8.44	8.51	8.38
2206	30	4	11.50	0.13	11.55	11.36	11.43	11.65
2201	34	4	10.16	0.21	10.15	10.30	10.34	9.87
2202	34	4	7.98	0.39	7.76	7.57	8.11	8.46
2203	34	4	12.37	0.15	12.42	12.51	12.15	12.40
2204	34	4	5.98	0.34	6.12	6.13	6.19	5.46
2205	34	4	7.76	0.39	7.88	7.38	7.53	8.25
2206	34	4	11.51	0.46	11.75	12.04	11.08	11.17
2201	112	4	10.36	0.27	10.06	10.20	10.62	10.55
2202	112	4	7.84	0.29	7.59	7.85	7.67	8.23
2203	112	4	12.40	0.27	12.42	12.20	12.77	12.19
2204	112	4	6.18	0.27	6.39	6.41	5.85	6.07
2205	112	4	7.55	0.16	7.63	7.67	7.59	7.32
2206	112	4	11.63	0.41	11.60	12.04	11.79	11.09
2201	113	4	9.67	0.38	9.27	9.58	10.18	9.64
2202	113	4	6.85	0.11	6.86	6.75	6.79	7.01
2203	113	4	11.17	0.48	10.72	10.88	11.79	11.30
2204	113	4	4.88	0.19	4.88	4.61	5.04	5.00
2205	113	4	6.38	0.19	6.57	6.50	6.27	6.18
2206	113	4	10.36	0.41	10.31	10.93	10.26	9.94
2201	125	4	9.61	0.26	9.98	9.53	9.55	9.38
2202	125	4	7.55	0.13	7.55	7.68	7.59	7.37
2203	125	4	11.85	0.27	11.80	11.60	12.23	11.75
2204	125	4	5.37	0.23	5.30	5.68	5.36	5.13
2205	125	4	7.25	0.08	7.18	7.19	7.36	7.27
2206	125	4	11.32	0.23	11.43	11.26	11.55	11.03
2201	134	4	10.08	0.20	10.35	9.90	10.06	10.00
2202	134	4	8.15	0.40	8.46	8.20	8.37	7.57
2203	134	4	12.52	0.89 _c	13.17	12.97	12.73	11.22
2204	134	4	6.43	0.22	6.11	6.60	6.57	6.43
2205	134	4	7.81	0.29	7.94	7.48	8.13	7.68
2206	134	4	11.41	0.19	11.41	11.59	11.51	11.14
2201	212	4	10.36	0.27	10.06	10.20	10.62	10.55
2202	212	4	7.84	0.29	7.59	7.85	7.67	8.23
2203	212	4	12.40	0.27	12.42	12.20	12.77	12.19
2204	212	4	6.18	0.27	6.39	6.41	5.85	6.07
2205	212	4	7.55	0.16	7.63	7.67	7.59	7.32
2206	212	4	11.63	0.41	11.60	12.04	11.79	11.09

7.7 aNDFom

7.7.1 z-Werte / z Scores

Labor/Lab	2201	2202	2203	2204	2205	2206
3	-0.68	-0.67	-0.47	-0.11	-0.19	-0.38
4	1.00	0.57	1.05	1.75	0.68	1.08
5	0.48	0.38	0.37	-0.29	0.09	-0.26
6	-0.67	0.11	0.05	-0.39	0.09	-0.31
7	-0.45	0.19	-0.35	0.30	0.11	-0.11
9	0.68	0.91	1.42	0.22	0.65	0.96
10	-0.08	0.05	0.25	0.13	0.07	0.15
11	-0.59	-0.24	-0.44	-0.40	-0.25	-0.54
12	0.09	-0.37	-0.14	0.69	-0.39	-0.36
13	-0.70	0.59	0.17	0.44	0.36	0.01
14	0.02	-0.11	-0.15	-0.27	-0.38	-0.19
15	-0.09	-0.45	-0.18	-0.81	-0.47	-0.22
16	0.16	0.32	-0.16	-0.06	0.22	0.03
22	-0.04	-0.66	-0.58	-0.44	-0.64	-0.74
23	0.42	-0.10	0.07	0.09	0.17	0.79
24	-0.28	-0.30	-0.08	-0.48	-0.32	-0.63
25	-0.22	-0.26	-0.19	-0.60	-0.46	-0.25
26	0.40	0.76	0.27	0.40	0.43	0.38
27	-0.02	-0.43	-0.31	0.07	0.45	0.19
29	-2.09	-1.55	-1.30	-1.41	-1.20	-1.32
30	1.21	1.63	1.72	1.31	1.48	1.17
34	-1.05	-0.76	-1.32	-0.90	-1.11	-1.05
112	0.46	-0.39	-0.38	0.27	-0.32	-0.24
113	1.15	0.20	0.25	-0.05	0.80	0.98
125	-0.22	-0.26	-0.19	-0.60	-0.46	-0.25
134	0.66	1.22	1.03	0.85	0.90	1.35
212	0.46	-0.39	-0.38	0.27	-0.32	-0.24

7.7.2 Einzelwerte / Single Values

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single values				
2201	3	4	41.53	0.70	41.14	42.55	41.00	41.41	
2202	3	4	34.38	0.56	34.08	35.12	34.48	33.84	
2203	3	4	35.32	0.36	35.06	35.84	35.09	35.27	
2204	3	4	39.19	0.44	38.71	38.94	39.47	39.66	
2205	3	4	36.76	0.42	37.14	36.23	36.62	37.04	
2206	3	4	40.10	0.27	39.84	40.25	40.41	39.92	
2201	4	4	44.48	0.30	44.09	44.56	44.82	44.44	
2202	4	4	36.55	0.30	36.62	36.27	36.94	36.37	
2203	4	4	37.98	0.06	37.98	37.92	37.94	38.06	
2204	4	4	42.46	0.08	42.57	42.44	42.38	42.44	
2205	4	4	38.30	0.36	38.06	38.23	38.82	38.08	
2206	4	4	42.66	0.25	42.75	42.33	42.93	42.61	
2201	5	4	43.56	0.23	43.76	43.31	43.40	43.75	
2202	5	4	36.22	0.20	36.27	35.94	36.41	36.27	
2203	5	4	36.78	0.40	36.61	36.68	37.36	36.46	
2204	5	4	38.88	0.31	39.02	39.13	38.44	38.95	
2205	5	4	37.25	0.30	37.41	37.10	36.91	37.57	

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2206	5	4	40.31	0.32	40.27	40.13	40.77	40.05
2201	6	4	41.55	0.52	42.11	40.88	41.44	41.76
2202	6	4	35.76	0.56	36.53	35.22	35.55	35.73
2203	6	4	36.23	0.67	36.45	37.03	35.48	35.94
2204	6	4	38.70	0.24	38.66	38.60	39.05	38.51
2205	6	4	37.25	0.57	36.44	37.32	37.49	37.74
2206	6	4	40.22	0.61	39.97	41.01	40.34	39.56
2201	7	4	41.93	0.47	41.59	41.49	42.49	42.16
2202	7	4	35.89	0.43	35.31	36.10	36.30	35.87
2203	7	4	35.53	0.33	35.84	35.64	35.06	35.57
2204	7	4	39.91	0.40	39.95	40.30	40.05	39.35
2205	7	4	37.29	0.27	37.30	37.57	37.36	36.93
2206	7	4	40.56	0.54	39.77	40.93	40.68	40.88
2201	9	4	43.91	0.76	42.90	44.14	43.89	44.71
2202	9	4	37.14	0.91	37.87	37.56	37.32	35.82
2203	9	4	38.61	0.95	39.59	38.51	39.01	37.35
2204	9	4	39.78	0.79	39.65	40.91	39.10	39.47
2205	9	4	38.24	0.58	37.63	38.67	37.86	38.80
2206	9	4	42.44	0.51	41.99	42.25	43.17	42.34
2201	10	4	42.59	0.58	42.36	42.23	42.31	43.46
2202	10	4	35.64	0.14	35.77	35.70	35.44	35.66
2203	10	4	36.57	0.35	36.05	36.75	36.68	36.80
2204	10	4	39.61	0.29	39.27	39.55	39.98	39.64
2205	10	4	37.22	0.45	37.83	36.98	36.80	37.26
2206	10	4	41.02	0.13	41.10	40.82	41.06	41.09
2201	11	4	41.69	0.46	41.82	41.01	41.93	42.01
2202	11	4	35.14	0.39	35.02	35.08	34.79	35.70
2203	11	4	35.37	0.24	35.42	35.32	35.07	35.65
2204	11	4	38.69	0.18	38.45	38.65	38.87	38.79
2205	11	4	36.66	0.49	37.39	36.36	36.57	36.33
2206	11	4	39.82	0.20	39.91	39.71	40.06	39.61
2201	12	4	42.89	0.42	43.04	42.39	42.74	43.38
2202	12	4	34.92	0.30	34.99	34.47	35.16	35.04
2203	12	4	35.89	0.51	36.63	35.76	35.49	35.66
2204	12	4	40.59	0.49	40.81	40.26	40.13	41.17
2205	12	4	36.42	0.35	36.82	36.37	35.99	36.50
2206	12	4	40.12	0.19	40.19	40.12	40.31	39.87
2201	13	4	41.49	0.30	41.69	41.59	41.05	41.63
2202	13	4	36.59	1.08	37.94	35.35	36.28	36.78
2203	13	4	36.44	0.22	36.12	36.53	36.46	36.65
2204	13	4	40.17	0.50	39.70	40.67	39.77	40.53
2205	13	4	37.74	0.44	38.09	37.75	37.12	37.99
2206	13	4	40.77	0.98	40.57	42.21	40.12	40.20
2201	14	4	42.75	0.52	42.06	42.65	43.23	43.07
2202	14	4	35.37	0.24	35.68	35.39	35.10	35.29
2203	14	4	35.88	0.34	36.34	35.50	35.84	35.84
2204	14	4	38.92	0.24	38.62	38.84	39.15	39.06
2205	14	4	36.44	0.12	36.39	36.52	36.29	36.56
2206	14	4	40.42	0.46	40.41	40.75	39.78	40.76
2201	15	4	42.56	1.08	42.31	44.14	42.09	41.70
2202	15	4	34.77	0.46	35.34	34.96	34.41	34.39
2203	15	5	35.82	0.52	36.05	36.41	35.88	34.99
2204	15	4	37.98	0.59	37.24	38.49	37.76	38.42

35.77

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2205	15	4	36.27	0.96	35.05	36.59	36.12	37.33
2206	15	4	40.38	0.41	40.88	40.46	39.88	40.29
2201	16	4	43.01	0.31	43.33	42.79	43.21	42.70
2202	16	4	36.11	0.46	36.71	35.62	35.95	36.16
2203	16	4	35.86	0.99	36.70	36.71	35.28	34.77
2204	16	4	39.29	0.19	39.27	39.06	39.52	39.29
2205	16	4	37.49	0.81	37.49	36.36	37.87	38.23
2206	16	4	40.81	1.23C	40.08	40.58	42.61	39.95
2201	22	4	42.66	0.45	42.30	42.25	42.98	43.10
2202	22	4	34.40	0.07	34.49	34.36	34.41	34.35
2203	22	4	35.12	0.31	34.94	35.21	34.81	35.52
2204	22	4	38.61	0.62	39.51	38.09	38.38	38.47
2205	22	4	35.97	0.50	36.43	36.26	35.30	35.91
2206	22	4	39.46	0.30	39.89	39.34	39.41	39.19
2201	23	4	43.46	0.50	43.87	42.83	43.84	43.30
2202	23	4	35.38	0.89	35.46	34.10	36.03	35.94
2203	23	4	36.27	0.57	35.42	36.68	36.48	36.50
2204	23	4	39.55	0.57	38.88	40.16	39.88	39.30
2205	23	4	37.39	0.62	37.67	37.99	36.55	37.37
2206	23	4	42.15	0.15	42.33	42.17	42.14	41.96
2201	24	4	42.23	0.51	42.18	41.53	42.61	42.60
2202	24	4	35.04	0.37	34.78	35.58	34.89	34.89
2203	24	4	36.00	0.47	35.38	35.90	36.46	36.25
2204	24	4	38.56	0.39	38.27	39.13	38.45	38.38
2205	24	4	36.54	0.38	36.99	36.70	36.14	36.32
2206	24	4	39.66	0.29	40.09	39.46	39.52	39.59
2201	25	4	42.34	0.44	41.83	42.49	42.86	42.18
2202	25	4	35.10	0.25	34.72	35.23	35.23	35.21
2203	25	4	35.80	0.42	35.40	36.15	35.47	36.18
2204	25	4	38.34	0.45	38.34	38.77	38.53	37.72
2205	25	4	36.30	0.25	36.56	35.97	36.39	36.27
2206	25	4	40.32	0.51	39.83	40.83	39.91	40.69
2201	26	4	43.42	0.53	42.84	44.12	43.39	43.32
2202	26	4	36.90	1.00	37.84	36.09	37.67	35.98
2203	26	4	36.60	0.70	35.95	36.98	37.40	36.08
2204	26	4	40.09	1.21 c	40.25	38.52	41.47	40.10
2205	26	4	37.84	1.43C	39.16	38.90	36.16	37.14
2206	26	4	41.42	0.69	42.01	41.49	41.73	40.44
2201	27	4	42.68	0.38	43.02	42.53	42.21	42.97
2202	27	4	34.80	0.64	34.40	35.57	34.15	35.07
2203	27	4	35.59	0.27	35.60	35.31	35.51	35.95
2204	27	4	39.52	0.65	40.00	39.54	38.60	39.92
2205	27	4	37.88	0.61	37.43	38.40	37.27	38.41
2206	27	4	41.10	0.40	41.62	41.16	40.94	40.67
2201	29	4	39.07b	0.63	39.50	38.44	38.62	39.71
2202	29	4	32.84	0.95	33.40	32.68	31.57	33.72
2203	29	4	33.86	0.84	34.51	33.34	32.95	34.63
2204	29	4	36.92	0.74	36.91	35.89	37.33	37.56
2205	29	4	35.00	0.78	34.51	34.21	35.37	35.91
2206	29	4	38.46	0.54	39.17	38.03	38.04	38.58
2201	30	4	44.84	0.04	44.85	44.83	44.89	44.81
2202	30	4	38.41	0.15	38.20	38.57	38.41	38.44
2203	30	4	39.14	0.02	39.12	39.16	39.13	39.17

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2204	30	4	41.68	0.07	41.63	41.74	41.61	41.73
2205	30	4	39.69	0.07	39.71	39.68	39.59	39.77
2206	30	4	42.81	0.08	42.88	42.69	42.82	42.85
2201	34	4	40.89	1.12	40.31	42.36	41.12	39.78
2202	34	4	34.22	0.22	34.16	34.19	34.02	34.53
2203	34	4	33.83	0.98	33.41	35.28	33.43	33.17
2204	34	4	37.82	0.74	38.29	38.38	37.84	36.76
2205	34	4	35.16	0.61	35.06	34.62	36.02	34.92
2206	34	4	38.93	0.68	38.06	38.70	39.42	39.52
2201	112	4	43.54	0.39	43.15	43.82	43.27	43.92
2202	112	4	34.88	0.42	34.32	34.85	35.31	35.03
2203	112	4	35.47	0.32	35.20	35.91	35.28	35.48
2204	112	4	39.86	0.70	40.08	40.75	39.18	39.46
2205	112	4	36.54	0.40	37.01	36.04	36.59	36.53
2206	112	4	40.34	0.24	39.99	40.53	40.39	40.47
2201	113	4	44.73	0.81	43.89	45.11	45.67	44.25
2202	113	4	35.91	1.07	34.34	36.13	36.64	36.53
2203	113	4	36.57	0.64	35.91	37.29	36.91	36.19
2204	113	4	39.31	0.64	39.10	38.71	40.21	39.21
2205	113	4	38.49	0.89	39.17	39.20	38.30	37.31
2206	113	4	42.48	0.65	42.88	43.18	41.87	41.98
2201	125	4	42.34	0.44	41.83	42.49	42.86	42.18
2202	125	4	35.10	0.25	34.72	35.23	35.23	35.21
2203	125	4	35.80	0.42	35.40	36.15	35.47	36.18
2204	125	4	38.34	0.45	38.34	38.77	38.53	37.72
2205	125	4	36.30	0.25	36.56	35.97	36.39	36.27
2206	125	4	40.32	0.51	39.83	40.83	39.91	40.69
2201	134	4	43.89	0.55	43.60	44.52	43.30	44.13
2202	134	4	37.70	0.43	37.79	38.13	37.78	37.09
2203	134	4	37.94	0.90	37.62	37.79	37.12	39.23
2204	134	4	40.87	0.79	40.03	40.39	41.62	41.47
2205	134	4	38.67	0.72	39.07	38.92	37.60	39.08
2206	134	4	43.12	0.63	43.49	43.22	42.19	43.57
2201	212	4	43.54	0.39	43.15	43.82	43.27	43.92
2202	212	4	34.88	0.42	34.32	34.85	35.31	35.03
2203	212	4	35.47	0.32	35.20	35.91	35.28	35.48
2204	212	4	39.86	0.70	40.08	40.75	39.18	39.46
2205	212	4	36.54	0.40	37.01	36.04	36.59	36.53
2206	212	4	40.34	0.24	39.99	40.53	40.39	40.47

7.8 ADFom

7.8.1 z-Werte / z Scores

Labor/Lab	2201	2202	2203	2204	2205	2206
3	-0.34	-0.01	-0.03	0.71	1.07	0.01
4	-0.06	-0.07	0.14	0.94	0.09	0.22
5	0.21	0.42	0.40	-0.63	-0.13	-0.55
6	-0.23	1.18	0.76	0.16	1.16	0.04
7	-0.94	0.10	-0.38	0.24	0.24	-0.20
9	0.91	0.85	1.27	0.49	0.59	1.05
10	-0.67	-0.39	-0.04	-0.11	-0.18	-0.17
11	-0.54	0.01	-0.16	-0.10	0.02	-0.42
12	0.20	0.00	0.35	1.08	0.16	0.06
13	-0.99	0.41	0.17	0.23	0.20	-0.24
14	-0.17	-0.07	-0.27	-0.27	-0.29	-0.22
15	-0.02	-0.35	0.09	-0.61	-0.35	-0.17
16	-0.16	-0.08	-0.39	-0.41	-0.08	-0.06
22	-0.24	-0.52	-0.29	-0.22	-0.46	-0.63
23	0.69	0.24	0.18	0.37	0.53	1.11
24	-0.40	-0.09	0.13	-0.27	0.13	-0.16
25	-0.42	-0.24	-0.13	-0.60	-0.18	-0.12
26	0.21	0.72	0.23	0.31	0.52	0.11
27	1.11	1.82	1.47	2.48	3.31	2.52
29	-2.44	-1.46	-1.09	-1.42	-1.27	-1.13
30	-3.01	-2.56	-2.23	-3.03	-2.29	-2.47
34	-1.03	-0.59	-1.06	-0.59	-0.68	-0.71
112	0.65	-0.18	-0.01	0.56	-0.02	0.03
113	0.71	-0.52	-0.39	-0.75	-0.00	0.29
125	-0.42	-0.24	-0.13	-0.60	-0.18	-0.12
134	1.27	1.81	1.42	1.47	1.41	1.93
212	0.65	-0.18	-0.01	0.56	-0.02	0.03

7.8.2 Einzelwerte / Single Values

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single values				
2201	3	4	23.95	0.23	23.98	24.23	23.66	23.94	
2202	3	4	18.75	0.51	18.51	19.50	18.66	18.33	
2203	3	4	19.01	0.43	19.28	19.48	18.72	18.58	
2204	3	4	21.64	0.27	21.62	21.46	21.45	22.03	
2205	3	4	20.11	0.32	20.17	19.92	19.82	20.53	
2206	3	4	22.38	0.22	22.19	22.25	22.68	22.39	
2201	4	4	24.26	0.17	24.16	24.11	24.49	24.28	
2202	4	4	18.69	0.33	18.80	18.37	19.10	18.48	
2203	4	4	19.20	0.13	19.03	19.21	19.22	19.34	
2204	4	4	21.91	0.09	21.82	21.85	21.94	22.01	
2205	4	4	19.03	0.30	18.86	18.88	19.49	18.90	
2206	4	4	22.60	0.14	22.61	22.58	22.78	22.44	
2201	5	4	24.56	0.27	24.51	24.28	24.51	24.93	
2202	5	4	19.22	0.19	19.25	19.02	19.46	19.14	
2203	5	4	19.48	0.25	19.39	19.47	19.83	19.25	
2204	5	4	20.17	0.15	20.18	20.39	20.05	20.08	
2205	5	4	18.80	0.30	19.14	18.92	18.45	18.68	

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2206	5	4	21.76	0.16	21.61	21.66	21.96	21.82
2201	6	4	24.07	0.29	24.46	23.77	23.97	24.10
2202	6	4	20.06	0.37	20.56	19.72	19.85	20.10
2203	6	4	19.88	0.21	19.89	20.16	19.66	19.81
2204	6	4	21.04	0.28	20.79	21.26	21.30	20.81
2205	6	4	20.21	0.36	19.95	19.99	20.19	20.73
2206	6	4	22.41	0.70	22.02	23.22	22.72	21.66
2201	7	4	23.29	0.41	23.11	22.83	23.78	23.44
2202	7	4	18.87	0.20	18.64	18.91	18.82	19.11
2203	7	4	18.63	0.43	19.08	18.28	18.24	18.91
2204	7	4	21.13	0.31	21.15	21.55	21.04	20.79
2205	7	4	19.20	0.12	19.39	19.16	19.15	19.12
2206	7	4	22.14	0.36	21.63	22.41	22.13	22.38
2201	9	4	25.32	0.52	24.78	25.38	25.12	26.00
2202	9	4	19.69	0.51	20.05	19.82	19.96	18.93
2203	9	4	20.44	0.57	21.00	20.38	20.71	19.67
2204	9	4	21.41	0.61	21.22	22.22	20.75	21.44
2205	9	4	19.58	0.49	19.08	20.14	19.29	19.81
2206	9	4	23.52	0.32	23.13	23.45	23.91	23.61
2201	10	4	23.59	0.39	23.45	23.38	23.37	24.17
2202	10	4	18.33	0.20	18.60	18.34	18.20	18.16
2203	10	4	19.00	0.37	18.58	19.43	19.15	18.86
2204	10	4	20.75	0.20	20.62	20.74	21.03	20.59
2205	10	4	18.73	0.45	19.27	18.39	18.34	18.93
2206	10	4	22.17	0.21	22.26	21.91	22.13	22.40
2201	11	4	23.73	0.25	23.70	23.42	24.01	23.81
2202	11	4	18.77	0.25	18.65	18.79	18.54	19.11
2203	11	4	18.87	0.24	18.94	18.84	18.56	19.13
2204	11	4	20.75	0.14	20.55	20.82	20.84	20.80
2205	11	4	18.95	0.29	19.36	18.70	18.82	18.93
2206	11	4	21.90	0.15	22.07	21.87	21.97	21.70
2201	12	4	24.54	0.52	24.68	23.82	24.59	25.07
2202	12	4	18.76	0.24	18.84	18.41	18.96	18.84
2203	12	4	19.43	0.51	20.14	19.46	19.01	19.09
2204	12	4	22.06	0.41	22.19	21.80	21.67	22.57
2205	12	4	19.12	0.34	19.56	19.19	18.92	18.79
2206	12	4	22.43	0.18	22.46	22.20	22.64	22.43
2201	13	4	23.24	0.40	23.72	23.42	22.86	22.95
2202	13	4	19.21	0.77	20.33	18.66	18.79	19.07
2203	13	4	19.24	0.13	19.06	19.37	19.30	19.21
2204	13	4	21.12	0.55	20.72	21.83	20.64	21.29
2205	13	4	19.16	0.16	19.25	19.20	18.92	19.25
2206	13	4	22.10	0.63	22.30	22.91	21.62	21.56
2201	14	4	24.14	0.36	23.75	24.05	24.61	24.15
2202	14	4	18.68	0.27	18.98	18.50	18.42	18.82
2203	14	4	18.74	0.43	19.31	18.27	18.75	18.65
2204	14	4	20.57	0.05	20.56	20.61	20.60	20.50
2205	14	4	18.62	0.17	18.61	18.41	18.62	18.84
2206	14	4	22.12	0.24	22.32	22.07	21.81	22.29
2201	15	4	24.30	0.81	24.07	25.47	24.05	23.62
2202	15	4	18.37	0.18	18.35	18.28	18.23	18.63
2203	15	5	19.14	0.40	19.27	19.75	18.97	18.66
2204	15	4	20.19	0.43	19.62	20.49	20.12	20.55

19.08

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2205	15	4	18.55	0.60	17.86	18.83	18.28	19.22
2206	15	4	22.18	0.17	22.18	22.41	22.00	22.11
2201	16	4	24.14	0.48	24.56	23.90	24.53	23.59
2202	16	4	18.67	0.10	18.81	18.65	18.68	18.55
2203	16	4	18.62	0.86	19.40	19.30	18.04	17.73
2204	16	4	20.41	0.21	20.63	20.28	20.54	20.19
2205	16	4	18.85	0.49	18.79	18.18	19.15	19.28
2206	16	4	22.30	0.93C	21.82	22.18	23.65	21.56
2201	22	4	24.06	0.52	23.54	23.94	24.00	24.77
2202	22	4	18.19	0.38	18.25	17.80	18.70	18.02
2203	22	4	18.73	0.25	18.87	18.51	18.53	19.02
2204	22	4	20.62	0.50	21.29	20.15	20.71	20.34
2205	22	4	18.43	0.27	18.37	18.79	18.15	18.42
2206	22	4	21.67	0.14	21.80	21.74	21.65	21.48
2201	23	4	25.09	0.50	25.30	24.47	25.64	24.92
2202	23	4	19.03	0.75	19.18	17.93	19.48	19.51
2203	23	4	19.24	0.58	18.38	19.50	19.62	19.45
2204	23	4	21.28	0.46	20.81	21.91	21.21	21.18
2205	23	4	19.52	0.41	19.19	19.84	19.14	19.91
2206	23	4	23.59	0.26	23.93	23.58	23.53	23.30
2201	24	4	23.88	0.56	23.84	23.11	24.27	24.30
2202	24	4	18.66	0.40	18.42	19.23	18.36	18.64
2203	24	4	19.19	0.25	18.88	19.12	19.48	19.29
2204	24	4	20.57	0.23	20.47	20.91	20.47	20.43
2205	24	4	19.08	0.29	19.47	19.12	18.79	18.96
2206	24	4	22.19	0.15	22.37	22.01	22.19	22.18
2201	25	4	23.87	0.42	23.45	23.84	24.44	23.73
2202	25	4	18.50	0.12	18.37	18.50	18.66	18.46
2203	25	4	18.90	0.29	18.59	19.09	18.73	19.19
2204	25	4	20.21	0.46	20.02	20.80	20.27	19.73
2205	25	4	18.73	0.11	18.83	18.57	18.75	18.79
2206	25	4	22.23	0.35	21.86	22.63	22.04	22.39
2201	26	4	24.55	0.24	24.30	24.89	24.53	24.49
2202	26	4	19.55	0.84	20.43	18.99	20.11	18.69
2203	26	4	19.30	0.64	18.57	19.77	19.90	18.97
2204	26	4	21.21	0.92	21.32	19.93	22.12	21.46
2205	26	4	19.50	0.92 c	20.22	20.23	18.32	19.25
2206	26	4	22.48	0.52	22.85	22.62	22.73	21.71
2201	27	4	25.55	0.52	26.09	25.27	24.97	25.86
2202	27	4	20.76	0.41	20.84	21.16	20.19	20.85
2203	27	4	20.66	0.29	20.75	20.34	21.01	20.54
2204	27	4	23.60	0.52	23.73	23.37	23.04	24.26
2205	27	0	22.58B	0.52	22.25	23.18	22.05	22.81
2206	27	4	25.13 b	0.38	25.34	25.55	24.91	24.73
2201	29	0	21.64B	0.41	22.01	21.64	21.07	21.84
2202	29	4	17.16	1.06 c	17.01	17.46	15.80	18.35
2203	29	4	17.84	0.60	18.11	17.20	17.52	18.55
2204	29	4	19.30	0.53	19.29	18.57	19.56	19.80
2205	29	4	17.54B	0.51	17.36	16.90	17.93	17.98
2206	29	4	21.12	0.32	21.21	21.26	20.65	21.35
2201	30	0	21.01B	0.10	20.88	21.03	21.02	21.11
2202	30	4	15.94 b	0.13	15.76	16.04	15.95	16.01
2203	30	4	16.59 b	0.12	16.43	16.71	16.61	16.61

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2204	30	4	17.54 b	0.11	17.41	17.61	17.49	17.64
2205	30	4	16.42B	0.06	16.41	16.38	16.37	16.51
2206	30	4	19.65	0.08	19.58	19.59	19.66	19.75
2201	34	4	23.19	0.91	22.72	24.41	23.32	22.33
2202	34	4	18.12	0.46	17.88	17.94	17.85	18.80
2203	34	4	17.88	0.62	17.48	18.81	17.66	17.59
2204	34	4	20.22	0.53	20.58	20.66	20.14	19.49
2205	34	4	18.19	0.37	18.14	17.99	18.72	17.91
2206	34	4	21.59	0.24	21.29	21.50	21.71	21.84
2201	112	4	25.04	0.37	24.72	25.44	24.72	25.25
2202	112	4	18.57	0.47	17.91	18.53	18.91	18.92
2203	112	4	19.04	0.14	18.84	19.14	19.01	19.15
2204	112	4	21.49	0.48	21.73	22.05	21.08	21.10
2205	112	4	18.91	0.20	19.18	18.81	18.91	18.73
2206	112	4	22.40	0.31	22.09	22.74	22.57	22.19
2201	113	4	25.11	0.73	24.41	25.36	26.02	24.63
2202	113	4	18.18	0.93	16.85	18.42	19.00	18.47
2203	113	4	18.62	0.35	18.12	18.88	18.84	18.65
2204	113	4	20.04	0.56	19.97	19.37	20.72	20.12
2205	113	4	18.93	0.81	19.36	19.53	19.11	17.75
2206	113	4	22.69	0.55	23.19	23.14	22.29	22.15
2201	125	4	23.87	0.42	23.45	23.84	24.44	23.73
2202	125	4	18.50	0.12	18.37	18.50	18.66	18.46
2203	125	4	18.90	0.29	18.59	19.09	18.73	19.19
2204	125	4	20.21	0.46	20.02	20.80	20.27	19.73
2205	125	4	18.73	0.11	18.83	18.57	18.75	18.79
2206	125	4	22.23	0.35	21.86	22.63	22.04	22.39
2201	134	4	25.72	0.39	25.49	26.23	25.35	25.82
2202	134	4	20.76	0.46	20.58	21.38	20.75	20.31
2203	134	4	20.60	0.44	20.66	20.40	20.16	21.20
2204	134	4	22.48	0.68	21.90	21.89	23.07	23.05
2205	134	4	20.48	0.17	20.67	20.56	20.29	20.41
2206	134	4	24.48 b	0.43	24.87	24.73	23.89	24.46
2201	212	4	25.04	0.37	24.72	25.44	24.72	25.25
2202	212	4	18.57	0.47	17.91	18.53	18.91	18.92
2203	212	4	19.04	0.14	18.84	19.14	19.01	19.15
2204	212	4	21.49	0.48	21.73	22.05	21.08	21.10
2205	212	4	18.91	0.20	19.18	18.81	18.91	18.73
2206	212	4	22.40	0.31	22.09	22.74	22.57	22.19

7.9 ADL

7.9.1 z-Werte / z Scores

Labor/Lab	2201	2202	2203	2204	2205	2206
3	-0.96	-1.19	-1.08	-0.07	-0.77	-0.78
4	-1.41	-1.53	-2.78	-0.63	-1.23	-2.17
5	-0.18	-0.37	0.20	-1.04	-0.83	-0.73
6	0.86	1.95	0.59	2.11	1.88	0.75
7	0.29	0.40	0.77	0.30	0.52	0.48
9	1.85	1.61	0.90	1.48	1.94	1.96
10	0.38	0.16	0.84	0.20	0.16	0.54
11	1.53	1.66	1.86	1.54	1.59	1.49
12	0.22	-0.17	0.29	0.62	-0.10	0.05
13	-0.02	0.16	0.09	0.17	0.00	-0.17
14	0.13	0.10	-0.55	-0.06	0.06	-0.15
15	-0.33	-0.72	-0.37	-0.91	-0.58	-0.52
16	0.34	0.10	0.10	-0.73	0.06	0.51
22	-0.83	-1.47	-1.05	-1.04	-1.25	-1.49
23	1.08	0.94	1.12	1.06	0.82	1.35
24	-0.28	-0.41	-0.05	-0.43	-0.33	-0.04
25	-0.18	-0.13	0.05	-0.47	-0.39	-0.13
26	1.30	1.43	1.55	1.32	1.51	0.71
27	-2.79	-4.56	-4.40	-4.65	-4.07	-4.16
29	-1.40	-1.64	-1.34	-2.07	-1.82	-1.82
30	-0.36	-0.21	0.14	-0.10	0.01	0.06
34	-0.48	-0.15	-0.71	-0.29	-0.22	-0.37
112	-0.05	-0.56	-0.38	-0.36	-0.75	-0.43
113	0.79	-0.11	0.52	-0.78	0.03	0.72
125	-0.18	-0.13	0.05	-0.47	-0.39	-0.13
134	0.71	0.84	-0.37	0.98	0.81	0.74
212	-0.05	-0.56	-0.38	-0.36	-0.75	-0.43

7.9.2 Einzelwerte / Single Values

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single values				
2201	3	4	2.02	0.03	2.00	2.03	2.00	2.06	
2202	3	4	1.66	0.12	1.54	1.82	1.67	1.62	
2203	3	4	1.48	0.11	1.52	1.58	1.49	1.32	
2204	3	4	2.00	0.04	1.97	2.02	1.97	2.04	
2205	3	4	1.61	0.07	1.55	1.55	1.67	1.68	
2206	3	4	2.03	0.11	1.91	2.17	1.97	2.06	
2201	4	4	1.91	0.03	1.91	1.93	1.87	1.93	
2202	4	4	1.59	0.03	1.62	1.57	1.61	1.56	
2203	4	4	1.17b	0.02	1.18	1.18	1.14	1.18	
2204	4	4	1.89	0.02	1.90	1.86	1.92	1.90	
2205	4	4	1.52	0.05	1.54	1.48	1.58	1.48	
2206	4	4	1.78	0.03	1.75	1.81	1.79	1.76	
2201	5	4	2.22	0.03	2.23	2.19	2.20	2.25	
2202	5	4	1.83	0.03	1.83	1.80	1.87	1.81	
2203	5	4	1.71	0.03	1.70	1.69	1.76	1.69	
2204	5	4	1.82	0.03	1.86	1.81	1.81	1.78	
2205	5	4	1.60	0.07	1.69	1.61	1.52	1.57	

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2206	5	4	2.04	0.01	2.02	2.03	2.05	2.04
2201	6	4	2.48	0.07	2.52	2.53	2.39	2.46
2202	6	4	2.30	0.02	2.29	2.33	2.29	2.29
2203	6	4	1.78	0.03	1.82	1.79	1.75	1.78
2204	6	4	2.41	0.04	2.38	2.41	2.47	2.40
2205	6	4	2.13	0.07	2.10	2.06	2.12	2.22
2206	6	4	2.30	0.09	2.23	2.41	2.35	2.22
2201	7	4	2.33	0.07	2.28	2.27	2.39	2.40
2202	7	4	1.99	0.03	2.00	1.95	1.97	2.02
2203	7	4	1.82	0.06	1.86	1.75	1.77	1.88
2204	7	4	2.07	0.06	2.13	2.12	2.04	2.00
2205	7	4	1.86	0.03	1.88	1.83	1.89	1.84
2206	7	4	2.25	0.04	2.23	2.31	2.22	2.26
2201	9	4	2.72	0.05	2.73	2.76	2.65	2.76
2202	9	4	2.23	0.07	2.27	2.27	2.27	2.12
2203	9	4	1.84	0.06	1.92	1.79	1.84	1.81
2204	9	4	2.29	0.10	2.24	2.39	2.19	2.36
2205	9	4	2.14	0.03	2.12	2.17	2.10	2.16
2206	9	4	2.52	0.03	2.47	2.54	2.54	2.53
2201	10	4	2.36	0.03	2.33	2.36	2.33	2.40
2202	10	4	1.94	0.05	2.00	1.97	1.90	1.88
2203	10	4	1.83	0.07	1.74	1.91	1.83	1.83
2204	10	4	2.05	0.03	2.06	2.05	2.09	2.02
2205	10	4	1.79	0.04	1.84	1.75	1.77	1.81
2206	10	4	2.26	0.05	2.28	2.20	2.25	2.32
2201	11	4	2.64	0.01	2.65	2.64	2.65	2.63
2202	11	4	2.24	0.02	2.26	2.25	2.22	2.23
2203	11	4	2.02	0.02	2.02	2.02	1.99	2.02
2204	11	4	2.31	0.01	2.29	2.30	2.31	2.31
2205	11	4	2.07	0.03	2.09	2.03	2.07	2.09
2206	11	4	2.44	0.03	2.47	2.44	2.42	2.41
2201	12	4	2.32	0.08	2.33	2.21	2.40	2.32
2202	12	4	1.87	0.07	1.87	1.78	1.89	1.94
2203	12	4	1.73	0.08	1.82	1.72	1.64	1.74
2204	12	4	2.13	0.04	2.17	2.11	2.09	2.15
2205	12	4	1.74	0.09	1.85	1.71	1.76	1.64
2206	12	4	2.18	0.05	2.19	2.10	2.23	2.19
2201	13	4	2.26	0.05	2.31	2.24	2.27	2.20
2202	13	4	1.94	0.10	2.06	1.81	1.92	1.95
2203	13	4	1.69	0.03	1.68	1.68	1.73	1.68
2204	13	4	2.05	0.05	1.98	2.10	2.07	2.03
2205	13	4	1.76	0.04	1.75	1.77	1.72	1.80
2206	13	4	2.14	0.02	2.12	2.17	2.14	2.12
2201	14	4	2.29	0.03	2.28	2.27	2.29	2.34
2202	14	4	1.92	0.04	1.99	1.90	1.92	1.90
2203	14	4	1.58	0.04	1.62	1.53	1.60	1.55
2204	14	4	2.00	0.03	2.01	1.95	2.02	2.02
2205	14	4	1.77	0.01	1.77	1.76	1.78	1.78
2206	14	4	2.14	0.07	2.23	2.09	2.09	2.15
2201	15	4	2.18	0.05	2.15	2.25	2.18	2.14
2202	15	4	1.76	0.07	1.68	1.75	1.75	1.85
2203	15	5	1.61	0.06	1.60	1.68	1.53	1.57
2204	15	4	1.84	0.05	1.78	1.85	1.82	1.91

1.66

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2205	15	4	1.65	0.04	1.60	1.67	1.63	1.69
2206	15	4	2.07	0.04	2.11	2.11	2.04	2.04
2201	16	4	2.35	0.07	2.37	2.35	2.42	2.25
2202	16	4	1.92	0.02	1.91	1.95	1.91	1.92
2203	16	4	1.69	0.07	1.72	1.79	1.63	1.64
2204	16	4	1.88	0.03	1.92	1.87	1.87	1.84
2205	16	4	1.77	0.03	1.76	1.74	1.77	1.82
2206	16	4	2.26	0.06	2.21	2.25	2.35	2.23
2201	22	4	2.05	0.07	2.06	2.05	1.98	2.14
2202	22	4	1.61	0.06	1.66	1.56	1.66	1.54
2203	22	4	1.48	0.06	1.52	1.46	1.42	1.54
2204	22	4	1.82	0.04	1.85	1.80	1.84	1.77
2205	22	4	1.52	0.05	1.50	1.58	1.47	1.52
2206	22	4	1.90	0.10	2.01	1.96	1.85	1.79
2201	23	4	2.53	0.09	2.57	2.42	2.62	2.52
2202	23	4	2.09	0.05	2.11	2.03	2.14	2.10
2203	23	4	1.88	0.05	1.82	1.85	1.93	1.92
2204	23	4	2.21	0.07	2.15	2.31	2.17	2.23
2205	23	4	1.92	0.04	1.87	1.94	1.90	1.97
2206	23	4	2.41	0.03	2.44	2.42	2.37	2.41
2201	24	4	2.19	0.05	2.17	2.13	2.24	2.23
2202	24	4	1.82	0.04	1.81	1.86	1.78	1.83
2203	24	4	1.67	0.04	1.73	1.65	1.64	1.64
2204	24	4	1.93	0.04	2.00	1.92	1.90	1.91
2205	24	4	1.70	0.05	1.76	1.69	1.67	1.66
2206	24	4	2.16	0.05	2.13	2.11	2.21	2.19
2201	25	4	2.22	0.08	2.12	2.20	2.31	2.23
2202	25	4	1.88	0.04	1.86	1.83	1.91	1.91
2203	25	4	1.68	0.02	1.69	1.70	1.65	1.70
2204	25	4	1.93	0.05	1.89	1.98	1.96	1.87
2205	25	4	1.68	0.02	1.70	1.66	1.67	1.70
2206	25	4	2.14	0.04	2.13	2.20	2.12	2.13
2201	26	4	2.59	0.07	2.67	2.61	2.56	2.50
2202	26	4	2.19	0.09	2.32	2.13	2.21	2.11
2203	26	4	1.96	0.07	1.88	2.03	2.00	1.93
2204	26	4	2.26	0.08	2.27	2.16	2.34	2.29
2205	26	4	2.06	0.09	2.13	2.12	1.95	2.02
2206	26	4	2.29	0.03	2.32	2.29	2.31	2.26
2201	27	4	1.57	0.04	1.56	1.51	1.59	1.60
2202	27	0	0.98B	0.13	0.95	0.80	1.07	1.10
2203	27	0	0.87B	0.11	0.72	0.98	0.85	0.92
2204	27	0	1.13B	0.08	1.18	1.01	1.17	1.16
2205	27	0	0.97B	0.11	1.03	0.99	0.81	1.04
2206	27	0	1.42B	0.06	1.46	1.47	1.40	1.34
2201	29	4	1.91	0.11	1.86	1.96	2.04	1.80
2202	29	4	1.57	0.07	1.64	1.62	1.55	1.48
2203	29	4	1.43	0.12	1.33	1.40	1.38	1.60
2204	29	4	1.62	0.12	1.68	1.74	1.59	1.46
2205	29	4	1.41	0.17C	1.43	1.19	1.39	1.61
2206	29	4	1.84	0.14C	1.64	1.86	1.91	1.94
2201	30	4	2.17	0.03	2.14	2.17	2.16	2.21
2202	30	4	1.86	0.03	1.82	1.87	1.87	1.88
2203	30	4	1.70	0.02	1.68	1.72	1.71	1.70

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2204	30	4	1.99	0.02	1.97	2.02	1.99	2.00
2205	30	4	1.76	0.02	1.76	1.76	1.74	1.78
2206	30	4	2.18	0.02	2.16	2.20	2.15	2.20
2201	34	4	2.14	0.06	2.20	2.16	2.15	2.06
2202	34	4	1.87	0.05	1.88	1.81	1.88	1.92
2203	34	4	1.55	0.10	1.47	1.70	1.50	1.52
2204	34	4	1.96	0.13	1.98	2.08	1.99	1.78
2205	34	4	1.72	0.03	1.72	1.70	1.75	1.70
2206	34	4	2.10	0.07	2.11	2.04	2.05	2.20
2201	112	4	2.25	0.06	2.23	2.30	2.18	2.29
2202	112	4	1.79	0.09	1.66	1.84	1.85	1.81
2203	112	4	1.61	0.01	1.60	1.60	1.61	1.62
2204	112	4	1.95	0.04	1.98	1.97	1.94	1.89
2205	112	4	1.62	0.04	1.62	1.65	1.56	1.63
2206	112	4	2.09	0.02	2.09	2.12	2.07	2.09
2201	113	4	2.46	0.05	2.44	2.52	2.47	2.41
2202	113	4	1.88	0.09	1.76	1.92	1.97	1.88
2203	113	4	1.77	0.02	1.75	1.79	1.76	1.78
2204	113	4	1.87	0.06	1.88	1.78	1.94	1.86
2205	113	4	1.77	0.08	1.76	1.84	1.81	1.65
2206	113	4	2.30	0.04	2.35	2.29	2.29	2.25
2201	125	4	2.22	0.08	2.12	2.20	2.31	2.23
2202	125	4	1.88	0.04	1.86	1.83	1.91	1.91
2203	125	4	1.68	0.02	1.69	1.70	1.65	1.70
2204	125	4	1.93	0.05	1.89	1.98	1.96	1.87
2205	125	4	1.68	0.02	1.70	1.66	1.67	1.70
2206	125	4	2.14	0.04	2.13	2.20	2.12	2.13
2201	134	4	2.44	0.06	2.38	2.50	2.39	2.48
2202	134	4	2.07	0.04	2.07	2.08	2.12	2.02
2203	134	4	1.61	0.09	1.61	1.57	1.51	1.73
2204	134	4	2.20	0.07	2.21	2.10	2.22	2.27
2205	134	4	1.92	0.04	1.94	1.91	1.95	1.87
2206	134	4	2.30	0.03	2.34	2.28	2.28	2.30
2201	212	4	2.25	0.06	2.23	2.30	2.18	2.29
2202	212	4	1.79	0.09	1.66	1.84	1.85	1.81
2203	212	4	1.61	0.01	1.60	1.60	1.61	1.62
2204	212	4	1.95	0.04	1.98	1.97	1.94	1.89
2205	212	4	1.62	0.04	1.62	1.65	1.56	1.63
2206	212	4	2.09	0.02	2.09	2.12	2.07	2.09

7.10 NDF

7.10.1 z-Werte / z Scores

Labor/Lab	2201	2202	2203	2204	2205	2206
3	0.00	0.10	0.41	0.83	1.18	0.48
4	0.83	0.38	0.94	1.41	0.41	0.82
5	0.50	0.40	0.35	-0.40	-0.08	-0.38
6	-0.38	0.59	0.56	-0.08	0.47	0.01
7	-0.80	0.02	-0.55	0.13	-0.11	-0.41
9	0.18	0.16	0.73	-0.50	-0.29	0.29
10	-0.33	-0.17	0.05	-0.03	-0.18	-0.14
11	-0.53	-0.21	-0.47	-0.48	-0.31	-0.64
12	0.31	-0.15	0.09	0.81	-0.18	-0.20
13	-0.67	0.53	0.21	0.37	0.20	-0.12
14	0.20	0.05	0.00	-0.21	-0.36	-0.05
15	0.19	-0.08	0.06	-0.57	-0.36	-0.09
16	0.26	0.29	-0.15	-0.17	0.04	0.02
22	0.15	-0.35	-0.31	-0.19	-0.48	-0.55
23	0.68	0.15	0.22	0.27	0.35	0.94
24	-0.17	-0.20	0.02	-0.47	-0.21	-0.35
25	-0.10	-0.19	-0.17	-0.59	-0.38	-0.23
26	0.41	0.74	0.27	0.38	0.39	0.13
27	-0.16	-0.39	-0.44	1.35	1.95	1.24
29	-2.12	-1.41	-1.07	-1.42	-1.18	-1.04
30	-0.98	-0.66	-0.43	-0.94	-0.70	-0.90
34	-1.00	-0.71	-1.24	-0.96	-1.11	-0.96
112	0.76	-0.08	-0.13	0.57	-0.07	-0.03
113	1.26	0.18	0.25	-0.03	0.57	0.87
125	-0.10	-0.19	-0.17	-0.59	-0.38	-0.23
134	0.87	1.29	1.12	0.94	0.91	1.53
212	0.76	-0.08	-0.13	0.57	-0.07	-0.03

7.10.2 Einzelwerte / Single Values

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single values			
2201	3	4	43.24	0.48	43.35	43.68	42.56	43.38
2202	3	4	36.08	0.73	36.03	37.04	36.00	35.26
2203	3	4	36.92	0.68	36.24	37.65	36.45	37.32
2204	3	4	40.74	0.53	40.25	40.38	40.96	41.38
2205	3	4	39.13	0.66	39.54	38.55	38.59	39.85
2206	3	4	42.03	0.45	41.79	41.62	42.65	42.08
2201	4	4	44.69	0.38	44.27	44.63	45.18	44.67
2202	4	4	36.57	0.47	36.74	36.12	37.17	36.27
2203	4	4	37.85	0.12	37.68	37.91	37.85	37.95
2204	4	4	41.74	0.08	41.77	41.73	41.65	41.83
2205	4	4	37.78	0.34	37.59	37.62	38.30	37.62
2206	4	4	42.62	0.32	42.89	42.24	42.89	42.48
2201	5	4	44.12	0.28	44.17	43.86	43.95	44.49
2202	5	4	36.59	0.21	36.64	36.34	36.85	36.55
2203	5	4	36.82	0.39	36.70	36.73	37.37	36.47
2204	5	4	38.58	0.25	38.52	38.90	38.31	38.59
2205	5	4	36.94	0.31	37.32	37.00	36.57	36.85

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2206	5	4	40.53	0.24	40.51	40.34	40.88	40.40
2201	6	4	42.57	0.57	43.19	41.87	42.37	42.83
2202	6	4	36.93	0.53	37.69	36.46	36.77	36.80
2203	6	4	37.18	0.56	37.44	37.84	36.61	36.82
2204	6	4	39.15	0.34	38.81	39.20	39.60	38.98
2205	6	4	37.90	0.53	37.36	37.67	37.97	38.60
2206	6	4	41.20	0.88	40.74	42.24	41.58	40.26
2201	7	4	41.84	0.53	41.47	41.38	42.53	41.98
2202	7	4	35.94	0.40	35.35	36.23	36.08	36.10
2203	7	4	35.23	0.50	35.67	35.42	34.52	35.32
2204	7	4	39.52	0.57	39.44	40.27	39.47	38.89
2205	7	4	36.87	0.08	36.93	36.93	36.89	36.75
2206	7	4	40.49	0.58	39.63	40.93	40.70	40.67
2201	9	4	43.55	0.63	42.86	43.67	43.31	44.35
2202	9	4	36.19	0.74	36.79	36.53	36.31	35.11
2203	9	4	37.47	0.90	38.36	37.47	37.83	36.23
2204	9	4	38.40	0.77	38.35	39.43	37.58	38.26
2205	9	4	36.56	0.67	35.85	37.14	36.13	37.12
2206	9	4	41.71	0.61	41.18	41.36	42.55	41.73
2201	10	4	42.66	0.56	42.36	42.30	42.49	43.49
2202	10	4	35.60	0.20	35.77	35.77	35.40	35.45
2203	10	4	36.29	0.40	35.70	36.54	36.53	36.39
2204	10	4	39.23	0.25	38.97	39.20	39.58	39.19
2205	10	4	36.75	0.56	37.49	36.49	36.18	36.82
2206	10	4	40.94	0.15	41.02	40.74	40.95	41.08
2201	11	4	42.31	0.44	42.33	41.69	42.60	42.62
2202	11	4	35.54	0.38	35.45	35.45	35.17	36.08
2203	11	4	35.37	0.31	35.52	35.33	34.96	35.68
2204	11	4	38.45	0.20	38.17	38.51	38.64	38.47
2205	11	4	36.53	0.45	37.19	36.22	36.46	36.24
2206	11	4	40.07	0.22	40.17	40.02	40.31	39.79
2201	12	4	43.78	0.62	43.93	43.03	43.62	44.51
2202	12	4	35.63	0.32	35.70	35.21	35.98	35.64
2203	12	4	36.37	0.64	37.29	36.23	35.83	36.13
2204	12	4	40.71	0.60	40.89	40.38	40.10	41.47
2205	12	4	36.75	0.41	37.28	36.80	36.31	36.63
2206	12	4	40.84	0.15	40.88	40.74	41.04	40.70
2201	13	4	42.07	0.43	42.57	42.21	41.54	41.96
2202	13	4	36.83	1.15	38.38	35.67	36.37	36.90
2203	13	4	36.57	0.14	36.38	36.70	36.59	36.63
2204	13	4	39.94	0.57	39.48	40.68	39.51	40.09
2205	13	4	37.42	0.35	37.64	37.56	36.90	37.59
2206	13	4	40.99	0.98	40.97	42.38	40.26	40.35
2201	14	4	43.59	0.56	42.90	43.43	44.22	43.80
2202	14	4	35.99	0.33	36.34	35.93	35.57	36.12
2203	14	4	36.20	0.60	36.98	35.53	36.21	36.09
2204	14	4	38.92	0.18	38.74	39.05	39.08	38.79
2205	14	4	36.44	0.16	36.47	36.24	36.41	36.63
2206	14	4	41.11	0.41	41.27	41.36	40.49	41.31
2201	15	4	43.56	1.16	43.29	45.25	43.11	42.61
2202	15	4	35.75	0.25	36.03	35.59	35.51	35.88
2203	15	5	36.30	0.52	36.47	37.05	36.19	35.60 36.20
2204	15	4	38.28	0.63	37.46	38.75	38.12	38.79

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2205	15	4	36.44	0.94	35.31	36.63	36.24	37.57
2206	15	4	41.03	0.28	41.24	41.29	40.69	40.90
2201	16	4	43.69	0.39	44.12	43.48	43.88	43.26
2202	16	4	36.42	0.31	36.83	36.09	36.41	36.33
2203	16	4	35.93	1.15	36.84	37.01	35.12	34.77
2204	16	4	38.99	0.24	39.17	38.72	39.22	38.85
2205	16	4	37.14	0.81	37.14	36.00	37.56	37.85
2206	16	4	41.23	1.36C	40.44	40.96	43.23	40.30
2201	22	4	43.51	0.69	42.78	43.11	43.87	44.27
2202	22	4	35.28	0.42	35.17	34.73	35.58	35.64
2203	22	4	35.66	0.46	35.47	35.45	35.36	36.34
2204	22	4	38.95	0.85	40.13	38.13	38.73	38.80
2205	22	4	36.22	0.56	36.25	36.86	35.49	36.28
2206	22	4	40.23	0.21	40.49	40.03	40.33	40.09
2201	23	4	44.42	0.42	44.55	43.93	44.92	44.30
2202	23	4	36.16	1.04	36.33	34.65	36.81	36.87
2203	23	4	36.58	0.81	35.38	37.13	36.96	36.86
2204	23	4	39.77	0.56	39.08	40.43	39.90	39.65
2205	23	4	37.68	0.53	37.72	38.25	36.97	37.77
2206	23	4	42.85	0.30	43.20	42.79	42.93	42.47
2201	24	4	42.95	0.70	43.05	41.93	43.32	43.49
2202	24	4	35.54	0.49	35.17	36.23	35.22	35.55
2203	24	4	36.24	0.30	36.02	36.00	36.65	36.29
2204	24	4	38.47	0.31	38.45	38.91	38.28	38.23
2205	24	4	36.70	0.40	37.21	36.81	36.29	36.47
2206	24	4	40.59	0.32	40.79	40.11	40.68	40.76
2201	25	4	43.06	0.61	42.41	43.17	43.85	42.80
2202	25	4	35.57	0.23	35.26	35.70	35.80	35.51
2203	25	4	35.91	0.46	35.36	36.33	35.69	36.23
2204	25	4	38.24	0.58	38.14	38.92	38.39	37.53
2205	25	4	36.41	0.22	36.59	36.10	36.54	36.42
2206	25	4	40.80	0.56	40.23	41.41	40.41	41.13
2201	26	4	43.95	0.41	43.55	44.51	43.95	43.80
2202	26	4	37.20	1.04	38.12	36.41	38.07	36.19
2203	26	4	36.68	0.72	36.00	37.10	37.48	36.14
2204	26	4	39.95	1.25	40.30	38.22	41.19	40.09
2205	26	4	37.76	1.44 c	38.99	38.91	36.07	37.05
2206	26	4	41.42	0.78	42.12	41.44	41.80	40.32
2201	27	4	42.96	0.32	43.27	43.19	42.83	42.58
2202	27	4	35.22	1.04	34.65	36.28	34.05	35.89
2203	27	4	35.44	0.44	35.27	35.28	35.12	36.08
2204	27	4	41.65	1.12	41.95	41.60	40.17	42.87
2205	27	4	40.49b	0.70	39.78	41.13	40.01	41.04
2206	27	4	43.37	0.61	43.36	44.23	42.84	43.04
2201	29	4	39.53b	1.17	40.67	39.14	38.06	40.22
2202	29	4	33.43	2.02C	33.12	33.73	30.99	35.90
2203	29	4	34.32	1.04	35.29	33.29	33.56	35.14
2204	29	4	36.81	1.70C	36.27	34.80	37.32	38.84
2205	29	4	35.00	0.74	34.28	34.45	35.78	35.48
2206	29	4	39.37	0.59	39.98	39.41	38.57	39.53
2201	30	4	41.53	0.03	41.52	41.50	41.56	41.54
2202	30	4	34.75	0.16	34.53	34.90	34.72	34.84
2203	30	4	35.45	0.09	35.33	35.51	35.43	35.52

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2204	30	4	37.64	0.12	37.57	37.71	37.52	37.77
2205	30	4	35.85	0.08	35.88	35.80	35.77	35.94
2206	30	4	39.61	0.13	39.57	39.45	39.69	39.74
2201	34	4	41.48	1.38	40.87	43.31	41.66	40.08
2202	34	4	34.65	0.60	34.18	34.51	34.39	35.52
2203	34	4	34.04	0.80	33.75	35.23	33.61	33.56
2204	34	4	37.61	0.69	37.98	38.30	37.46	36.71
2205	34	4	35.13	0.65	35.07	34.50	36.03	34.90
2206	34	4	39.52	0.54	39.03	39.06	39.90	40.08
2201	112	4	44.57	0.43	44.12	44.95	44.27	44.92
2202	112	4	35.76	0.56	35.00	35.66	36.16	36.20
2203	112	4	35.98	0.40	35.63	36.56	35.86	35.86
2204	112	4	40.28	0.68	40.51	41.14	39.66	39.82
2205	112	4	36.94	0.39	37.37	36.63	37.17	36.59
2206	112	4	41.15	0.23	40.84	41.39	41.24	41.13
2201	113	4	45.44	0.91	44.52	45.91	46.48	44.86
2202	113	4	36.21	1.12	34.57	36.41	37.07	36.77
2203	113	4	36.63	0.67	35.90	37.41	36.91	36.30
2204	113	4	39.23	0.67	39.13	38.48	40.10	39.23
2205	113	4	38.07	1.10	38.91	38.82	37.99	36.54
2206	113	4	42.72	0.75	43.29	43.45	42.05	42.10
2201	125	4	43.06	0.61	42.41	43.17	43.85	42.80
2202	125	4	35.57	0.23	35.26	35.70	35.80	35.51
2203	125	4	35.91	0.46	35.36	36.33	35.69	36.23
2204	125	4	38.24	0.58	38.14	38.92	38.39	37.53
2205	125	4	36.41	0.22	36.59	36.10	36.54	36.42
2206	125	4	40.80	0.56	40.23	41.41	40.41	41.13
2201	134	4	44.77	0.58	44.65	45.56	44.17	44.68
2202	134	4	38.15	0.42	38.11	38.62	38.28	37.61
2203	134	4	38.16	0.91	38.10	38.11	37.11	39.33
2204	134	4	40.92	0.84	40.28	40.11	41.75	41.55
2205	134	4	38.66	0.67	39.24	38.91	37.69	38.80
2206	134	4	43.88	0.70	44.43	44.26	42.86	43.95
2201	212	4	44.57	0.43	44.12	44.95	44.27	44.92
2202	212	4	35.76	0.56	35.00	35.66	36.16	36.20
2203	212	4	35.98	0.40	35.63	36.56	35.86	35.86
2204	212	4	40.28	0.68	40.51	41.14	39.66	39.82
2205	212	4	36.94	0.39	37.37	36.63	37.17	36.59
2206	212	4	41.15	0.23	40.84	41.39	41.24	41.13

7.11 ADF

7.11.1 z-Werte / z Scores

Labor/Lab	2201	2202	2203	2204	2205	2206
3	-0.03	-0.24	0.04	0.29	0.66	0.04
4	0.35	0.13	0.20	1.29	0.11	0.14
5	0.76	0.81	0.91	-0.24	0.16	0.01
6	0.38	1.67	1.22	0.89	1.78	0.60
7	-0.83	0.16	-0.34	0.06	0.24	-0.33
9	-0.74	-0.67	-0.54	-0.65	-1.28	-0.68
10	-0.52	-0.26	0.13	-0.05	-0.09	-0.22
11	-0.72	-0.33	-0.40	-0.53	-0.37	-0.73
12	0.47	0.10	0.43	1.29	0.14	0.09
13	-0.97	0.25	-0.02	0.05	-0.11	-0.43
14	-0.23	-0.19	-0.54	-0.53	-0.64	-0.45
15	0.36	-0.13	0.26	-0.50	-0.43	0.06
16	-0.26	-0.31	-0.57	-0.57	-0.50	-0.41
22	0.46	-0.19	0.04	0.08	-0.24	-0.42
23	0.82	0.33	0.23	0.56	0.41	1.20
24	-0.01	0.13	0.11	-0.32	0.09	0.09
25	-0.14	-0.22	-0.09	-0.67	-0.33	-0.08
26	0.77	1.08	0.76	0.68	0.75	0.54
27	0.05	-0.19	-0.22	0.89	1.38	1.24
29	-1.48	-0.88	-0.64	-1.09	-0.79	-0.38
30	-1.63	-1.17	-0.82	-1.76	-0.91	-1.26
34	-0.85	-0.70	-1.15	-0.85	-0.90	-0.87
112	1.12	0.10	0.24	0.87	0.14	0.24
113	0.75	-0.65	-0.45	-0.81	-0.29	0.19
125	-0.14	-0.22	-0.09	-0.67	-0.33	-0.08
134	1.16	1.49	1.06	1.41	1.23	1.67
212	1.12	0.10	0.24	0.87	0.14	0.24

7.11.2 Einzelwerte / Single Values

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single values				
2201	3	4	25.22	0.36	25.29	25.58	24.72	25.27	
2202	3	4	19.51	0.47	19.45	20.16	19.38	19.05	
2203	3	4	19.61	0.37	19.60	20.13	19.39	19.32	
2204	3	4	21.98	0.41	21.59	21.73	22.11	22.49	
2205	3	4	20.83	0.40	20.85	20.79	20.36	21.34	
2206	3	4	23.43	0.29	23.12	23.25	23.64	23.71	
2201	4	4	25.63	0.21	25.46	25.47	25.92	25.65	
2202	4	4	19.92	0.26	19.97	19.69	20.26	19.76	
2203	4	4	19.78	0.05	19.73	19.75	19.84	19.82	
2204	4	4	23.08	0.11	23.03	22.96	23.23	23.11	
2205	4	4	20.23	0.32	20.07	20.00	20.70	20.15	
2206	4	4	23.54	0.23	23.51	23.30	23.86	23.48	
2201	5	4	26.08	0.32	26.03	25.71	26.09	26.49	
2202	5	4	20.66	0.21	20.80	20.38	20.82	20.64	
2203	5	4	20.57	0.28	20.57	20.34	20.96	20.40	
2204	5	4	21.39	0.14	21.33	21.59	21.27	21.37	
2205	5	4	20.29	0.39	20.78	20.44	19.97	19.98	

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values				
2206	5	4	23.39	0.17	23.18	23.31	23.55	23.51	
2201	6	4	25.67	0.32	26.07	25.38	25.44	25.78	
2202	6	4	21.61b	0.39	22.06	21.20	21.39	21.78	
2203	6	4	20.90	0.37	21.23	21.21	20.61	20.56	
2204	6	4	22.64	0.21	22.40	22.68	22.90	22.57	
2205	6	4	22.07	0.44	21.90	21.80	21.85	22.73	
2206	6	4	24.04	0.78	23.66	25.00	24.30	23.20	
2201	7	4	24.33	0.23	24.27	24.06	24.63	24.36	
2202	7	4	19.95	0.29	19.70	19.72	20.08	20.30	
2203	7	4	19.19	0.37	19.42	19.18	18.67	19.48	
2204	7	4	21.72	0.26	21.61	21.99	21.87	21.41	
2205	7	4	20.38	0.18	20.57	20.49	20.26	20.19	
2206	7	4	23.02	0.46	22.38	23.46	23.17	23.06	
2201	9	4	24.44	0.51	24.10	24.58	23.98	25.09	
2202	9	4	19.03	0.33	19.09	19.11	19.36	18.58	
2203	9	4	18.96	0.52	19.55	18.94	19.08	18.29	
2204	9	4	20.94	0.79	20.82	22.03	20.13	20.80	
2205	9	4	18.70	0.52	18.05	19.17	18.53	19.07	
2206	9	4	22.64	0.35	22.43	22.54	23.15	22.41	
2201	10	4	24.67	0.22	24.60	24.50	24.60	24.99	
2202	10	4	19.49	0.23	19.77	19.57	19.24	19.36	
2203	10	4	19.70	0.23	19.45	19.96	19.81	19.57	
2204	10	4	21.60	0.25	21.52	21.51	21.97	21.42	
2205	10	4	20.01	0.52	20.72	19.66	19.58	20.09	
2206	10	4	23.14	0.23	23.20	22.89	23.05	23.42	
2201	11	4	24.45	0.33	24.17	24.23	24.88	24.51	
2202	11	4	19.41	0.29	19.34	19.48	19.06	19.76	
2203	11	4	19.12	0.26	19.26	19.03	18.79	19.38	
2204	11	4	21.07	0.18	20.81	21.18	21.21	21.09	
2205	11	4	19.71	0.36	20.22	19.40	19.59	19.63	
2206	11	4	22.58	0.16	22.70	22.57	22.69	22.35	
2201	12	4	25.76	0.59	25.86	24.92	25.96	26.30	
2202	12	4	19.89	0.25	19.92	19.53	20.04	20.07	
2203	12	4	20.03	0.34	20.49	20.08	19.69	19.86	
2204	12	4	23.08	0.38	23.22	22.90	22.66	23.54	
2205	12	4	20.26	0.46	20.92	20.22	19.91	20.01	
2206	12	4	23.48	0.14	23.54	23.28	23.61	23.50	
2201	13	4	24.17	0.54	24.76	24.49	23.79	23.65	
2202	13	4	20.05	0.88	21.35	19.39	19.65	19.80	
2203	13	4	19.54	0.21	19.46	19.83	19.56	19.32	
2204	13	4	21.72	0.52	21.41	22.47	21.35	21.64	
2205	13	4	19.99	0.11	19.86	20.12	19.98	19.99	
2206	13	4	22.91	0.73	23.22	23.80	22.44	22.20	
2201	14	4	24.99	0.36	24.58	24.93	25.45	25.01	
2202	14	4	19.56	0.28	19.89	19.44	19.24	19.68	
2203	14	4	18.97	0.41	19.51	18.54	18.99	18.85	
2204	14	4	21.08	0.15	20.96	21.12	21.27	20.96	
2205	14	4	19.41	0.20	19.41	19.18	19.37	19.66	
2206	14	4	22.89	0.26	22.90	23.07	22.52	23.07	
2201	15	4	25.64	0.87	25.41	26.92	25.33	24.92	
2202	15	4	19.63	0.18	19.59	19.47	19.58	19.89	
2203	15	5	19.85	0.38	19.85	20.48	19.71	19.47	19.74
2204	15	4	21.10	0.42	20.57	21.39	20.97	21.48	

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2205	15	4	19.64	0.55	19.01	19.80	19.45	20.30
2206	15	4	23.44	0.15	23.36	23.66	23.40	23.35
2201	16	4	24.96	0.48	25.39	24.70	25.34	24.42
2202	16	4	19.43	0.13	19.58	19.49	19.35	19.30
2203	16	4	18.93	0.93 c	19.73	19.73	18.23	18.03
2204	16	4	21.03	0.26	21.21	20.79	21.30	20.83
2205	16	4	19.56	0.46	19.63	18.90	19.79	19.94
2206	16	4	22.93	1.01C	22.34	22.71	24.42	22.25
2201	22	4	25.75	0.50	25.30	25.62	25.61	26.46
2202	22	4	19.57	0.39	19.60	19.09	20.04	19.55
2203	22	4	19.60	0.14	19.67	19.43	19.57	19.75
2204	22	4	21.75	0.67	22.61	21.01	21.82	21.56
2205	22	4	19.85	0.28	19.88	20.05	19.44	20.03
2206	22	4	22.92	0.13	23.09	22.95	22.86	22.79
2201	23	4	26.15	0.59	26.40	25.40	26.78	26.01
2202	23	4	20.14	0.60	20.42	19.25	20.34	20.53
2203	23	4	19.82	0.61	18.94	19.98	20.35	20.01
2204	23	4	22.27	0.40	22.06	22.87	22.02	22.14
2205	23	4	20.56	0.35	20.12	20.94	20.47	20.70
2206	23	4	24.70	0.31	25.12	24.72	24.42	24.53
2201	24	4	25.23	0.53	25.15	24.51	25.66	25.61
2202	24	4	19.92	0.32	19.80	20.39	19.68	19.79
2203	24	4	19.68	0.26	19.93	19.34	19.84	19.60
2204	24	4	21.31	0.14	21.47	21.38	21.20	21.19
2205	24	4	20.21	0.34	20.66	20.20	19.85	20.13
2206	24	4	23.48	0.25	23.59	23.11	23.60	23.63
2201	25	4	25.10	0.42	24.80	24.95	25.72	24.91
2202	25	4	19.53	0.14	19.36	19.49	19.68	19.58
2203	25	4	19.46	0.27	19.18	19.66	19.28	19.72
2204	25	4	20.92	0.48	20.74	21.56	20.95	20.42
2205	25	4	19.75	0.09	19.81	19.62	19.82	19.76
2206	25	4	23.29	0.37	22.88	23.68	23.08	23.52
2201	26	4	26.10	0.31	25.71	26.47	26.09	26.11
2202	26	4	20.96	0.83	21.61	20.43	21.73	20.08
2203	26	4	20.40	0.56	19.75	20.86	20.87	20.12
2204	26	4	22.41	1.05	22.58	20.98	23.51	22.57
2205	26	4	20.94	0.97 c	21.78	21.63	19.71	20.64
2206	26	4	23.97	0.54	24.35	24.08	24.27	23.18
2201	27	4	25.30	0.26	25.62	25.19	25.00	25.38
2202	27	4	19.56	0.38	19.18	19.99	19.30	19.78
2203	27	4	19.32	0.30	19.32	18.98	19.70	19.26
2204	27	4	22.64	0.82	23.08	22.40	21.61	23.48
2205	27	4	21.63	0.40	21.53	21.98	21.11	21.92
2206	27	4	24.75	0.37	24.99	25.14	24.47	24.39
2201	29	4	23.62	0.59	23.93	23.39	22.91	24.25
2202	29	4	18.80	0.75	18.56	19.16	17.88	19.61
2203	29	4	18.86	0.59	18.85	18.29	18.63	19.67
2204	29	4	20.46	0.73	20.24	19.77	20.35	21.49
2205	29	4	19.24	0.46	18.83	18.95	19.85	19.32
2206	29	4	22.96	0.29	22.87	23.06	22.62	23.31
2201	30	4	23.45	0.07	23.37	23.42	23.48	23.54
2202	30	4	18.48	0.14	18.29	18.62	18.46	18.55
2203	30	4	18.66	0.10	18.54	18.77	18.62	18.72

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2204	30	4	19.72	0.10	19.59	19.80	19.68	19.81
2205	30	4	19.11	0.06	19.11	19.11	19.04	19.18
2206	30	4	22.00	0.06	21.95	21.95	22.00	22.09
2201	34	4	24.31	1.15 c	23.75	25.79	24.55	23.14
2202	34	4	19.00	0.52	18.86	18.58	18.82	19.76
2203	34	4	18.30	0.63	18.20	19.18	18.12	17.69
2204	34	4	20.72	0.58	20.98	21.24	20.76	19.90
2205	34	4	19.13	0.43	19.14	18.83	19.73	18.81
2206	34	4	22.43	0.36	22.13	22.17	22.49	22.92
2201	112	4	26.48	0.30	26.21	26.79	26.25	26.69
2202	112	4	19.89	0.59	19.14	19.68	20.33	20.40
2203	112	4	19.82	0.22	19.56	20.10	19.79	19.85
2204	112	4	22.61	0.49	22.75	23.25	22.19	22.27
2205	112	4	20.27	0.34	20.71	20.25	20.23	19.89
2206	112	4	23.65	0.41	23.32	24.20	23.72	23.35
2201	113	4	26.07	0.82	25.26	26.44	27.03	25.53
2202	113	4	19.06	0.90	17.76	19.37	19.84	19.27
2203	113	4	19.06	0.41	18.52	19.44	19.33	18.96
2204	113	4	20.76	0.55	20.74	20.07	21.42	20.83
2205	113	4	19.80	0.90	20.38	20.45	19.85	18.50
2206	113	4	23.59	0.55	24.15	23.95	23.17	23.07
2201	125	4	25.10	0.42	24.80	24.95	25.72	24.91
2202	125	4	19.53	0.14	19.36	19.49	19.68	19.58
2203	125	4	19.46	0.27	19.18	19.66	19.28	19.72
2204	125	4	20.92	0.48	20.74	21.56	20.95	20.42
2205	125	4	19.75	0.09	19.81	19.62	19.82	19.76
2206	125	4	23.29	0.37	22.88	23.68	23.08	23.52
2201	134	4	26.52	0.37	26.46	26.96	26.07	26.58
2202	134	4	21.41b	0.48	21.43	21.91	21.55	20.76
2203	134	4	20.73	0.50	20.78	20.46	20.28	21.41
2204	134	4	23.20	0.71	22.79	22.43	23.91	23.68
2205	134	4	21.46	0.47	22.11	21.40	20.99	21.36
2206	134	4	25.21	0.47	25.70	25.42	24.61	25.13
2201	212	4	26.48	0.30	26.21	26.79	26.25	26.69
2202	212	4	19.89	0.59	19.14	19.68	20.33	20.40
2203	212	4	19.82	0.22	19.56	20.10	19.79	19.85
2204	212	4	22.61	0.49	22.75	23.25	22.19	22.27
2205	212	4	20.27	0.34	20.71	20.25	20.23	19.89
2206	212	4	23.65	0.41	23.32	24.20	23.72	23.35

7.12 Elos / Cellulase

7.12.1 z-Werte / z Scores

Labor/Lab	2201	2202	2203	2204	2205	2206
3	0.23	0.47	0.14	-0.55	-0.54	-0.06
4	0.31	0.40	0.61	-0.54	0.29	0.35
5	-0.89	-0.77	-0.83	-0.18	-0.33	-0.23
6	2.05	1.03	1.42	1.59	1.27	1.91
7	0.42	0.05	0.17	-0.28	-0.33	0.28
9	-0.08	0.17	0.21	-0.07	0.52	-0.02
10	-0.24	-0.19	-0.41	-0.41	-0.33	-0.33
11	-0.18	-0.29	-0.15	-0.21	-0.20	0.01
12	-0.84	-0.40	-0.70	-1.49	-0.49	-0.59
13	0.73	-0.06	0.11	-0.04	0.20	0.38
14	-0.16	0.03	0.41	0.12	0.28	0.08
15	-0.70	0.11	-0.43	0.03	0.11	-0.44
16	-0.16	0.11	0.24	0.21	0.20	-0.08
22	-0.39	0.08	-0.17	-0.27	0.00	0.27
23	-1.03	-0.70	-0.59	-0.88	-0.73	-1.49
24	-0.83	-0.77	-0.67	-0.49	-0.71	-0.68
25	-0.08	0.10	-0.05	0.36	0.25	-0.26
26	-0.94	-1.13	-0.70	-0.87	-0.94	-0.79
27	3.15	4.79	3.97	3.17	2.92	2.96
29	1.16	0.71	0.29	0.69	0.73	0.10
30	1.72	1.53	1.10	1.76	1.33	1.27
34	1.27	1.22	1.65	0.95	1.36	1.20
112	-1.01	-0.29	-0.41	-0.94	-0.32	-0.51
113	-0.84	0.51	0.31	0.52	0.09	-0.47
125	-0.08	0.10	-0.05	0.36	0.25	-0.26
134	-1.58	-1.74	-1.11	-1.61	-1.61	-2.08
212	-1.01	-0.29	-0.41	-0.94	-0.32	-0.51

7.12.2 Einzelwerte / Single Values

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single values			
2201	3	4	68.20	0.39	68.19	68.00	68.74	67.87
2202	3	4	74.87	0.86	75.32	73.61	75.04	75.51
2203	3	4	74.69	0.52	74.16	74.36	75.29	74.95
2204	3	4	70.91	0.38	71.40	70.97	70.76	70.50
2205	3	4	73.37	0.55	73.37	73.76	73.75	72.58
2206	3	4	69.83	0.33	70.19	70.01	69.59	69.51
2201	4	4	68.32	0.15	68.54	68.23	68.31	68.22
2202	4	4	74.76	0.18	74.60	74.97	74.63	74.82
2203	4	4	75.52	0.10	75.62	75.49	75.56	75.40
2204	4	4	70.92	0.18	70.97	71.15	70.75	70.81
2205	4	4	74.82	0.36	74.93	75.16	74.32	74.89
2206	4	4	70.53	0.36	70.79	70.63	70.00	70.72
2201	5	4	66.24	0.50	66.33	66.78	66.26	65.58
2202	5	4	72.70	0.37	72.54	73.22	72.67	72.37
2203	5	4	72.99	0.33	72.92	73.34	72.56	73.13
2204	5	4	71.55	0.38	71.14	71.31	71.87	71.89
2205	5	4	73.74	0.44	73.22	73.96	73.58	74.22

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2206	5	4	69.52	0.23	69.81	69.53	69.25	69.51
2201	6	4	71.37	0.78	70.54	72.42	71.28	71.24
2202	6	4	75.85	0.32	75.87	76.01	75.39	76.12
2203	6	4	76.94	0.90	76.69	76.05	78.20	76.80
2204	6	4	74.64	0.70	75.06	75.10	73.62	74.79
2205	6	4	76.55	0.62	77.47	76.25	76.31	76.16
2206	6	4	73.27	1.38 ^c	73.78	71.25	73.68	74.35
2201	7	4	68.53	0.35	68.36	69.05	68.37	68.32
2202	7	4	74.13	0.45	74.11	74.69	74.16	73.58
2203	7	4	74.74	0.69	74.24	74.91	75.65	74.17
2204	7	4	71.37	0.42	71.29	70.89	71.38	71.91
2205	7	4	73.73	0.34	73.35	73.64	74.17	73.78
2206	7	4	70.41	0.59	71.14	69.78	70.58	70.16
2201	9	4	67.65	0.67	68.19	67.29	68.25	66.89
2202	9	4	74.35	0.42	74.17	74.44	73.90	74.88
2203	9	4	74.82	0.76	74.01	75.07	74.46	75.75
2204	9	4	71.75	1.35	72.21	69.81	72.95	72.02
2205	9	4	75.22	0.42	75.56	74.87	75.61	74.84
2206	9	4	69.90	0.34	70.19	69.86	69.44	70.10
2201	10	4	67.38	0.29	67.29	67.45	67.73	67.03
2202	10	4	73.73	0.60	73.04	73.45	74.37	74.05
2203	10	4	73.73	0.39	74.01	73.15	73.94	73.81
2204	10	4	71.15	0.47	71.27	71.35	70.45	71.52
2205	10	4	73.74	0.95	72.45	74.58	74.32	73.60
2206	10	4	69.34	0.64	69.38	70.07	69.41	68.51
2201	11	4	67.48	0.51	68.01	67.50	66.78	67.62
2202	11	4	73.55	0.53	73.91	73.08	74.11	73.12
2203	11	4	74.19	0.34	74.14	74.31	74.56	73.74
2204	11	4	71.50	0.19	71.77	71.44	71.32	71.47
2205	11	4	73.96	0.45	73.33	74.30	74.29	73.92
2206	11	4	69.94	0.23	69.63	69.94	70.03	70.17
2201	12	4	66.32	0.61	66.14	67.22	65.92	66.00
2202	12	4	73.34	0.46	73.51	73.91	73.08	72.88
2203	12	4	73.23	0.62	72.56	72.93	73.97	73.44
2204	12	4	69.26	0.42	69.15	69.27	69.82	68.81
2205	12	4	73.46	0.63	72.63	73.33	73.81	74.06
2206	12	4	68.90	0.39	68.48	69.37	68.71	69.02
2201	13	4	69.06	0.79	68.13	68.70	69.54	69.88
2202	13	4	73.94	1.23	72.13	74.78	74.63	74.24
2203	13	4	74.64	0.30	74.54	74.32	74.66	75.04
2204	13	4	71.80	0.71	72.19	70.73	72.16	72.12
2205	13	4	74.66	0.21	74.82	74.36	74.75	74.71
2206	13	4	70.59	0.92	70.13	69.52	71.35	71.38
2201	14	4	67.50	0.44	68.10	67.56	67.12	67.22
2202	14	4	74.11	0.48	73.42	74.21	74.47	74.35
2203	14	4	75.16	0.36	74.81	75.66	75.08	75.07
2204	14	4	72.08	0.43	72.00	72.66	71.62	72.04
2205	14	4	74.80	0.38	74.59	75.10	75.14	74.37
2206	14	4	70.07	0.40	69.82	70.18	70.59	69.70
2201	15	4	66.56	1.06	67.06	65.03	66.75	67.41
2202	15	4	74.25	0.18	74.42	74.26	74.32	74.00
2203	15	5	73.70	0.60	73.65	72.77	74.10	74.32
2204	15	4	71.92	0.63	72.62	71.55	72.27	71.25

73.67

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2205	15	4	74.51	0.64	75.25	73.96	74.83	73.98
2206	15	4	69.16	0.39	69.58	68.63	69.13	69.28
2201	16	4	67.51	0.81	66.91	67.93	66.76	68.45
2202	16	4	74.25	0.23	74.11	74.01	74.52	74.37
2203	16	4	74.87	1.27	73.78	73.78	75.75	76.17
2204	16	4	72.22	0.39	71.80	72.54	71.99	72.57
2205	16	4	74.67	0.53	74.58	75.44	74.40	74.25
2206	16	4	69.79	1.34	70.66	70.13	67.81	70.56
2201	22	4	67.11	0.46	67.60	66.97	67.33	66.52
2202	22	4	74.20	0.44	73.84	74.45	73.82	74.68
2203	22	4	74.14	0.41	73.87	74.37	74.59	73.73
2204	22	4	71.40	0.72	70.51	72.08	71.13	71.86
2205	22	4	74.32	0.51	74.22	73.68	74.91	74.46
2206	22	4	70.39	0.55	69.64	70.41	70.58	70.94
2201	23	4	65.98	0.99	65.95	67.11	64.70	66.16
2202	23	4	72.83	0.83	72.16	74.02	72.77	72.36
2203	23	4	73.41	0.57	74.08	73.52	72.70	73.31
2204	23	4	70.33	0.78	70.76	69.29	71.07	70.19
2205	23	4	73.04	0.26	73.23	72.76	73.29	72.87
2206	23	4	67.31	0.73	66.52	66.99	68.22	67.53
2201	24	4	66.34	0.58	66.78	66.83	65.61	66.16
2202	24	4	72.70	0.33	72.70	72.24	72.88	72.99
2203	24	4	73.28	0.22	73.24	73.58	73.05	73.26
2204	24	4	71.00	0.08	70.96	70.96	70.98	71.12
2205	24	4	73.08	0.47	72.44	73.14	73.55	73.19
2206	24	4	68.73	0.19	68.46	68.88	68.76	68.83
2201	25	4	67.64	0.59	68.19	67.94	66.83	67.62
2202	25	4	74.24	0.29	74.41	74.52	74.15	73.87
2203	25	4	74.37	0.28	74.56	74.18	74.66	74.07
2204	25	4	72.50	0.61	72.53	71.81	72.36	73.28
2205	25	4	74.75	0.18	74.51	74.94	74.78	74.77
2206	25	4	69.47	0.52	69.92	68.96	69.92	69.09
2201	26	4	66.14	0.27	66.54	65.97	66.01	66.04
2202	26	4	72.08	1.42	70.70	73.00	71.06	73.58
2203	26	4	73.22	0.95	74.30	72.22	72.68	73.69
2204	26	4	70.35	1.47	70.28	72.27	68.68	70.17
2205	26	4	72.68	1.41C	71.38	71.94	74.61	72.79
2206	26	4	68.54	0.65	68.36	68.37	67.95	69.48
2201	27	4	73.31 b	0.83	73.90	72.80	72.42	74.12
2202	27	0	82.44B	1.18	83.59	82.95	82.37	80.84
2203	27	0	81.39B	1.11	82.26	80.25	82.41	80.63
2204	27	4	77.41 b	0.99	76.82	77.46	78.79	76.59
2205	27	0	79.43B	0.90	79.47	78.59	80.66	79.00
2206	27	4	75.12 b	0.50	74.67	74.69	75.56	75.54
2201	29	4	69.82	0.65	69.33	69.66	70.77	69.51
2202	29	4	75.29	1.14	75.48	74.81	76.79	74.10
2203	29	4	74.96	0.75	74.62	75.77	75.35	74.09
2204	29	4	73.06	0.51	72.91	73.49	73.44	72.41
2205	29	4	75.59	0.83	76.43	75.95	74.49	75.48
2206	29	4	70.11	0.72	70.35	70.12	70.84	69.13
2201	30	4	70.79	0.13	70.89	70.71	70.92	70.65
2202	30	4	76.74	0.16	76.98	76.62	76.69	76.67
2203	30	4	76.38	0.15	76.57	76.20	76.33	76.41

Probe/Sample	Labor/Lab	n	Mittel/Mean	Std/SD	Einzelwerte/Single Values			
2204	30	4	74.94	0.14	75.08	74.77	75.02	74.91
2205	30	4	76.64	0.13	76.59	76.61	76.83	76.53
2206	30	4	72.14	0.11	72.09	72.30	72.13	72.05
2201	34	4	70.01	1.30	71.16	68.21	70.74	69.95
2202	34	4	76.19	1.13	77.57	75.28	76.67	75.26
2203	34	4	77.33	0.61	77.86	76.45	77.42	77.58
2204	34	4	73.52	1.22	73.09	72.85	75.34	72.81
2205	34	4	76.70	0.55	76.76	77.14	75.92	77.00
2206	34	4	72.02	0.91	72.93	72.59	71.61	70.95
2201	112	4	66.02	0.52	66.36	65.27	66.38	66.08
2202	112	4	73.54	0.75	74.54	73.68	72.85	73.10
2203	112	4	73.73	0.46	74.36	73.34	73.42	73.78
2204	112	4	70.21	0.53	69.78	69.72	70.61	70.73
2205	112	4	73.76	0.35	73.25	73.83	74.07	73.88
2206	112	4	69.03	0.34	69.42	68.60	68.99	69.10
2201	113	4	66.32	0.93	67.31	65.77	65.33	66.89
2202	113	4	74.95	1.30	76.83	74.40	73.86	74.70
2203	113	4	74.98	0.35	75.47	74.74	74.73	74.97
2204	113	4	72.77	0.77	72.77	73.72	71.82	72.76
2205	113	4	74.47	1.22	73.61	73.67	74.38	76.23
2206	113	4	69.11	0.63	68.46	68.69	69.53	69.75
2201	125	4	67.64	0.59	68.19	67.94	66.83	67.62
2202	125	4	74.24	0.29	74.41	74.52	74.15	73.87
2203	125	4	74.37	0.28	74.56	74.18	74.66	74.07
2204	125	4	72.50	0.61	72.53	71.81	72.36	73.28
2205	125	4	74.75	0.18	74.51	74.94	74.78	74.77
2206	125	4	69.47	0.52	69.92	68.96	69.92	69.09
2201	134	4	65.03	0.51	65.13	64.42	65.66	64.89
2202	134	4	71.00	0.50	71.15	70.33	70.99	71.54
2203	134	4	72.49	0.98	72.69	72.68	73.48	71.13
2204	134	4	69.05	0.96	69.55	70.13	68.42	68.08
2205	134	4	71.49	0.22	71.21	71.44	71.67	71.66
2206	134	4	66.28	0.52	66.08	65.96	67.06	66.01
2201	212	4	66.02	0.52	66.36	65.27	66.38	66.08
2202	212	4	73.54	0.75	74.54	73.68	72.85	73.10
2203	212	4	73.73	0.46	74.36	73.34	73.42	73.78
2204	212	4	70.21	0.53	69.78	69.72	70.61	70.73
2205	212	4	73.76	0.35	73.25	73.83	74.07	73.88
2206	212	4	69.03	0.34	69.42	68.60	68.99	69.10