ÖQUASTA

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Overall Report

Round 38 of

Urinalysis quantitative

External Quality Assessment

Vienna, 30.04.2021

Dear Colleague,

The distribution of samples for round 38 of the external quality assessment scheme Urinalysis quantitative was started on 12.04.2021. The return deadline was 24.04.2021. Statistical analysis and evaluation of results were performed on 30.04.2021.
The following samples were circulated:

Sample option	Name	Manufacturer
A	Liquicheck Urine Chemistry Contr. L2, Microalbumin Control L2	BioRad
B	Liquicheck Urine Chemistry Contr. L1, Microalbumin Control L1	BioRad

Explanatory notes on the table columns

Sample	respective sample
AnzE	number of reported results

Metric results

Collective	collective of methods to which your results were assigned
*	collective not evaluated (either because the number of results in the collective is less than 6 or the number of results within the acceptance limits is less than 5); results are given for informative purposes only
Target value	target value assigned to the sample in this round [method used to determine the target value]: [a] Reference value [b] Consensus value
%-Dev	acceptable deviation from target value in %
ALimits	acceptance interval
Inside	number and proportion of results that lie within the acceptance interval
Outside	number and proportion of results that lie outside the acceptance interval
MV	mean
Median	median
SD	Standard deviation
CV	coefficient of variation

Nominal results

Result	results reported by participants
Reference	the result(s) assigned to the sample in the respective round [method used to determine the reference]: [a] Reference value [b] Consensus value
Proportion	Number and proportion of results that correspond to the reference(s)

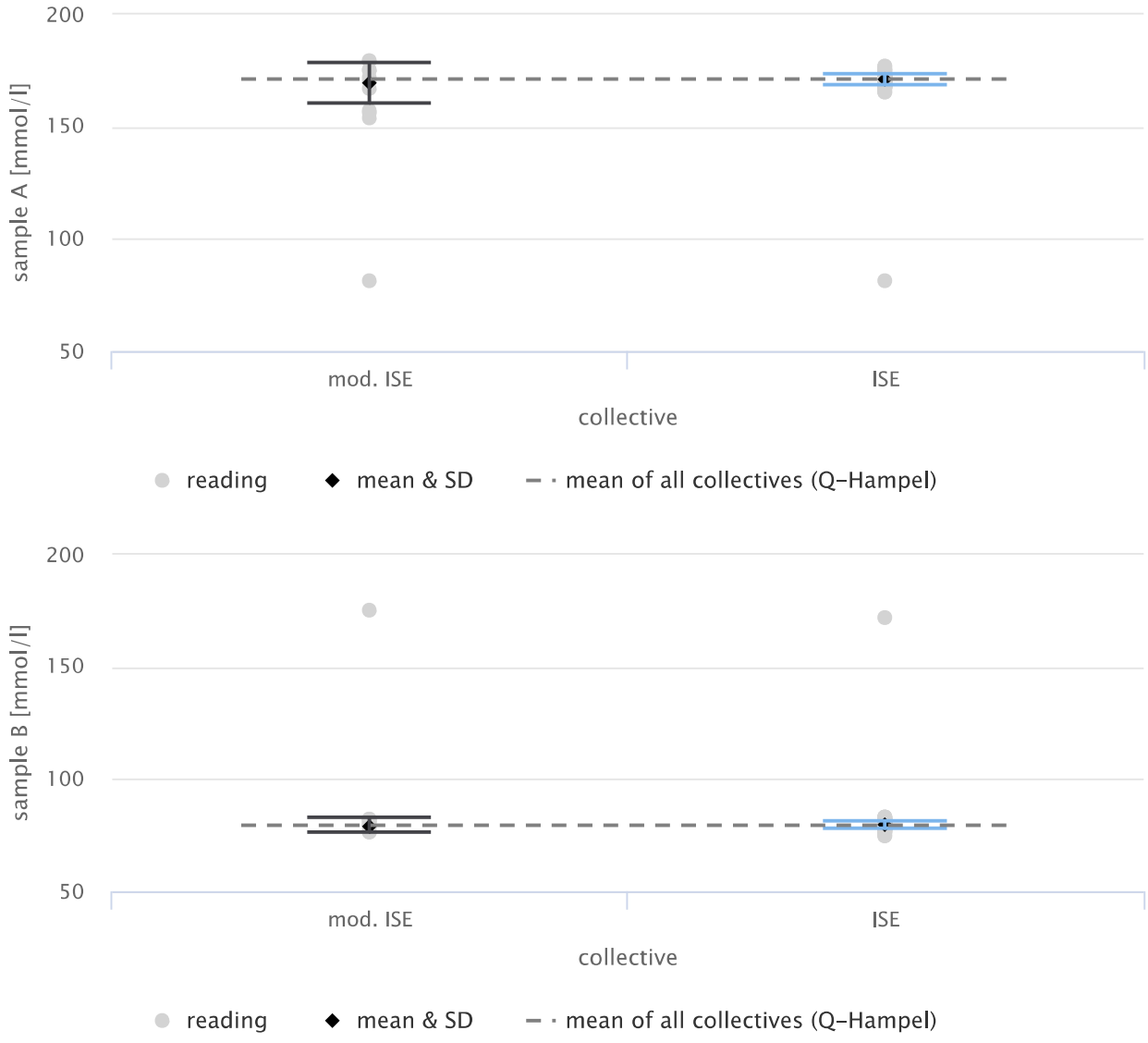
The following results were obtained:

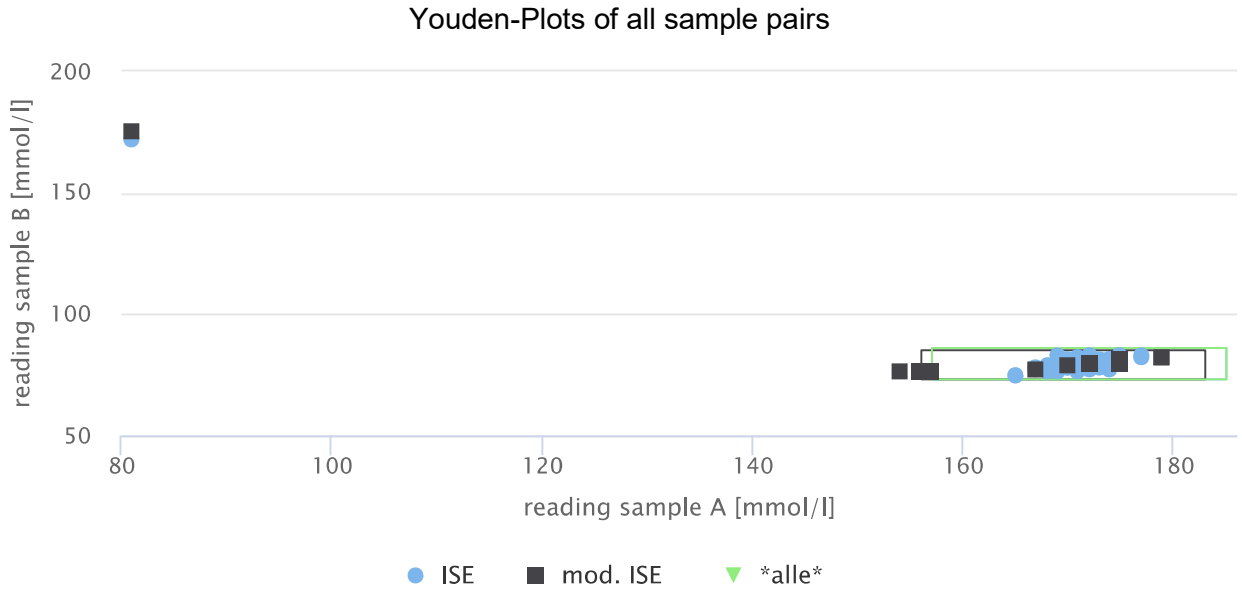
U-sodium mmol/l

Split: Methode

Collective	Sample	AnzE	Target	%-Abw	limits	correct	outliers	MW	Median	SD	CV %
all	A	96	171 [b]	8	[157...185]	92 (96%)	4 (4%)	171	171	3	1.75
	B	96	79 [b]	8	[73...86]	94 (98%)	2 (2%)	79	79	2	2.66
ISE	A	84	171 [b]	8	[157...185]	83 (99%)	1 (1%)	171	171	3	1.48
	B	84	79 [b]	8	[73...86]	83 (99%)	1 (1%)	79	79	2	2.46
mod. ISE	A	12	169 [b]	8	[156...183]	10 (83%)	2 (17%)	169	171	9	5.40
	B	12	79 [b]	8	[73...85]	11 (92%)	1 (8%)	79	80	3	4.03

S-Curves of all samples



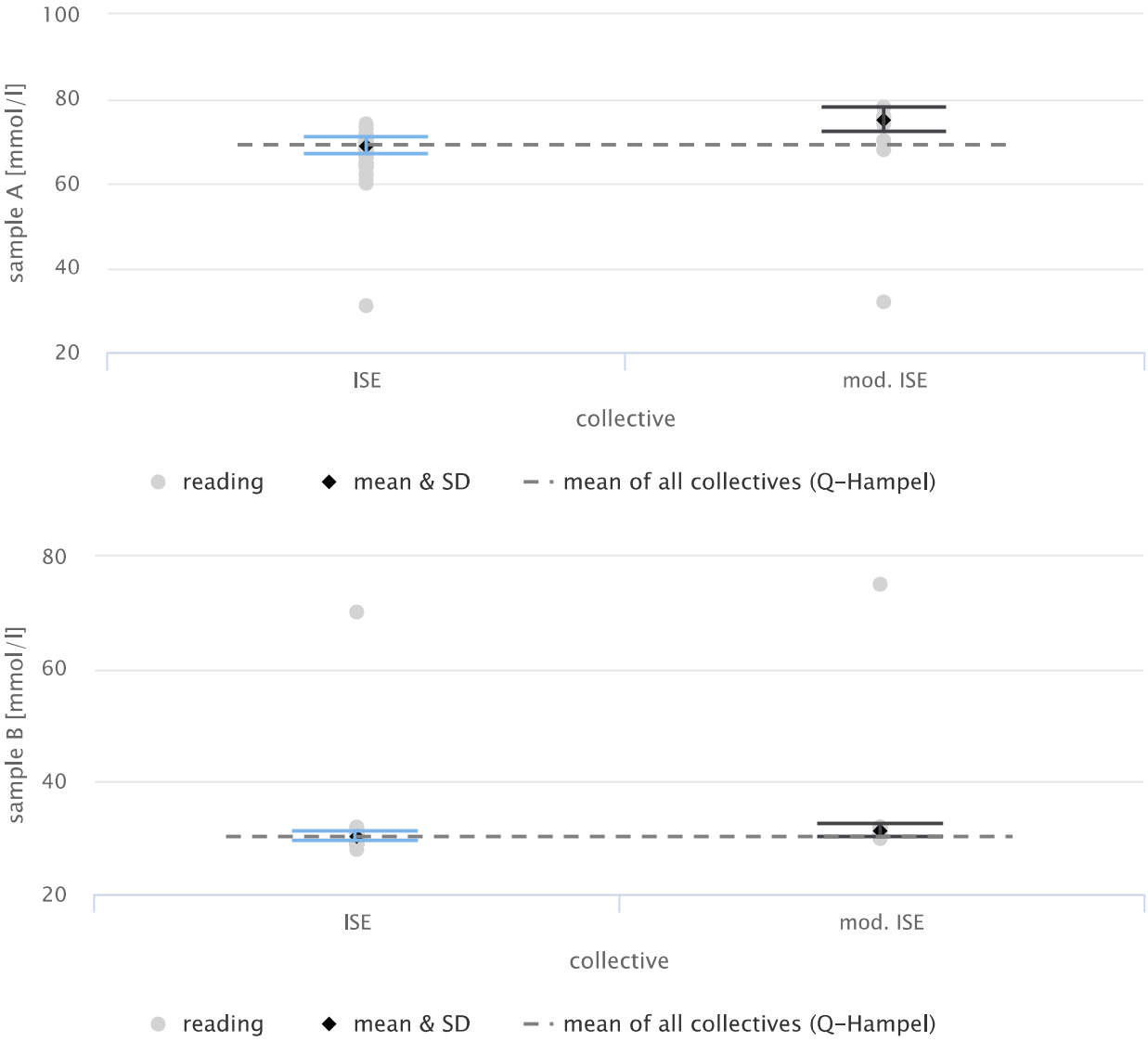


U-potassium mmol/l

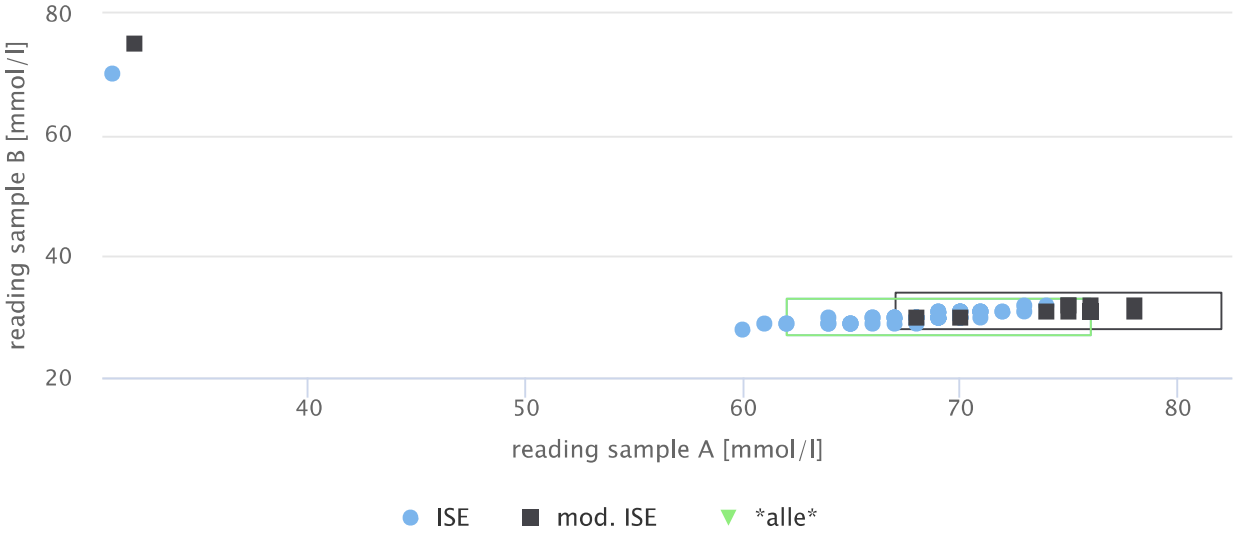
Split: Methode

Collective	Sample	AnzE	Target	%-Abw	limits	correct	outliers	MW	Median	SD	CV %
all	A	95	69 [b]	10	[62...76]	89 (94%)	6 (6%)	69	69	3	3.83
	B	95	30 [b]	10	[27...33]	93 (98%)	2 (2%)	30	30	1	3.03
ISE	A	83	69 [b]	10	[62...76]	80 (96%)	3 (4%)	69	69	2	3.10
	B	83	30 [b]	10	[27...33]	82 (99%)	1 (1%)	30	30	1	2.75
mod. ISE	A	12	75 [b]	10	[67...82]	11 (92%)	1 (8%)	75	75	3	3.98
	B	12	31 [b]	10	[28...34]	11 (92%)	1 (8%)	31	31	1	3.53

S-Curves of all samples



Youden-Plots of all sample pairs

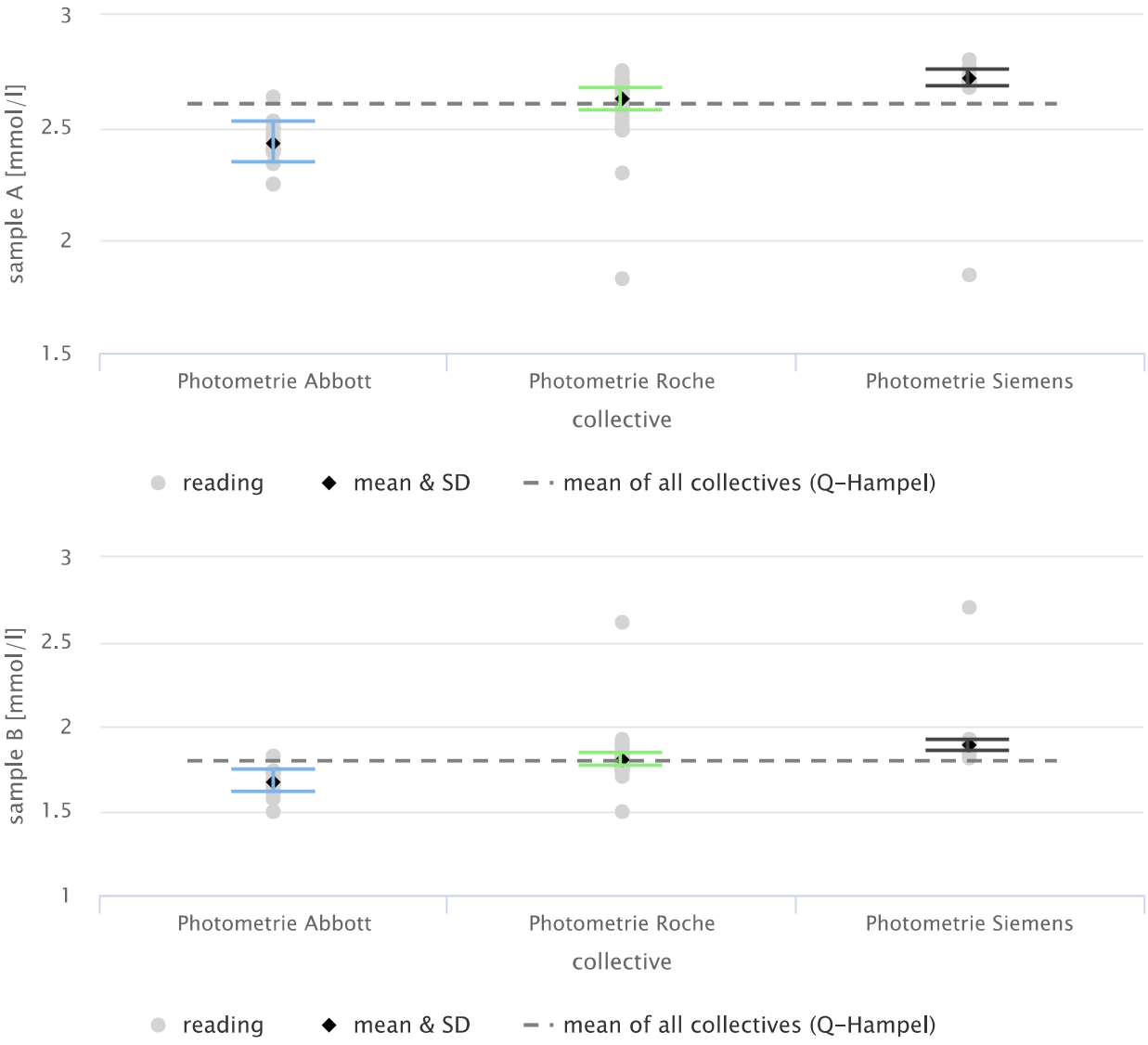


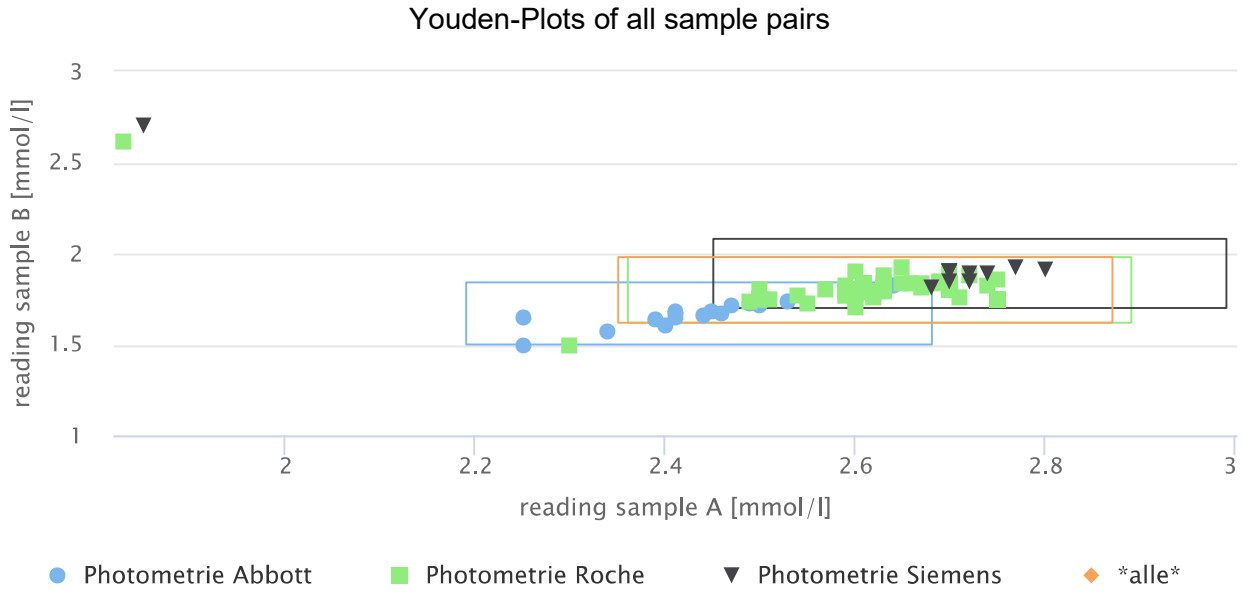
U-calcium mmol/l

Split: Methode

Collective	Sample	AnzE	Target	%-Abw	limits	correct	outliers	MW	Median	SD	CV %
all	A	92	2.61 [b]	10	[2.35...2.87]	86 (93%)	6 (7%)	2.61	2.61	0.10	3.90
	B	92	1.80 [b]	10	[1.62...1.98]	86 (93%)	6 (7%)	1.80	1.80	0.07	4.08
Photometrie Abbott	A	17	2.43 [b]	10	[2.19...2.68]	17 (100%)	0 (0%)	2.43	2.44	0.09	3.73
	B	17	1.67 [b]	10	[1.50...1.84]	17 (100%)	0 (0%)	1.67	1.67	0.07	3.90
Photometrie Roche	A	63	2.63 [b]	10	[2.36...2.89]	61 (97%)	2 (3%)	2.63	2.61	0.05	1.99
	B	63	1.80 [b]	10	[1.62...1.98]	61 (97%)	2 (3%)	1.80	1.80	0.04	2.29
Photometrie Siemens	A	12	2.72 [b]	10	[2.45...2.99]	11 (92%)	1 (8%)	2.72	2.70	0.04	1.36
	B	12	1.89 [b]	10	[1.70...2.08]	11 (92%)	1 (8%)	1.89	1.90	0.03	1.57

S-Curves of all samples



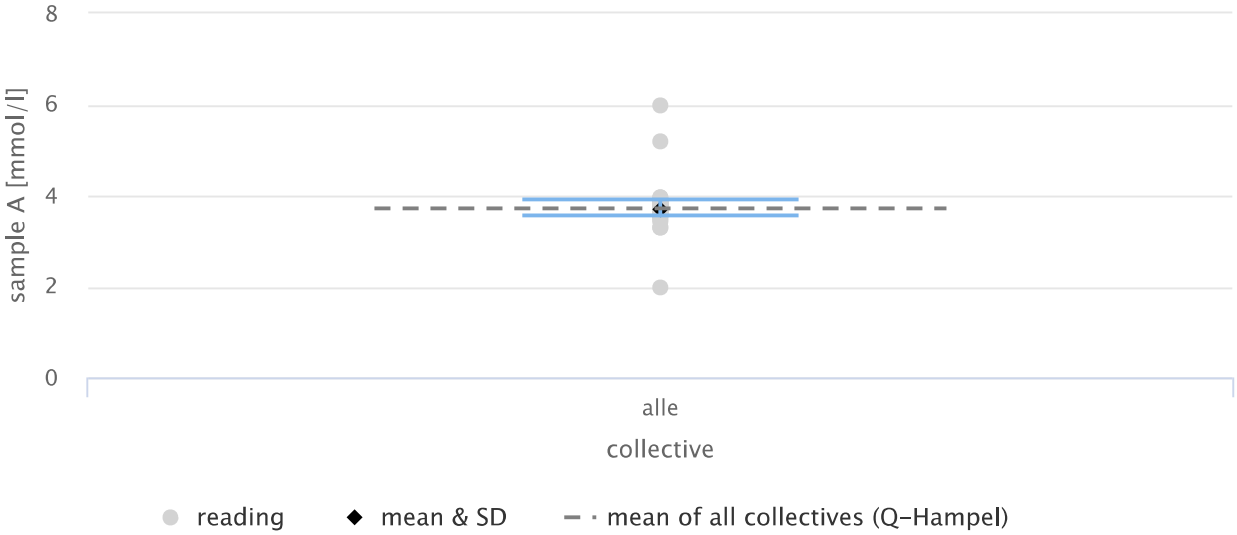


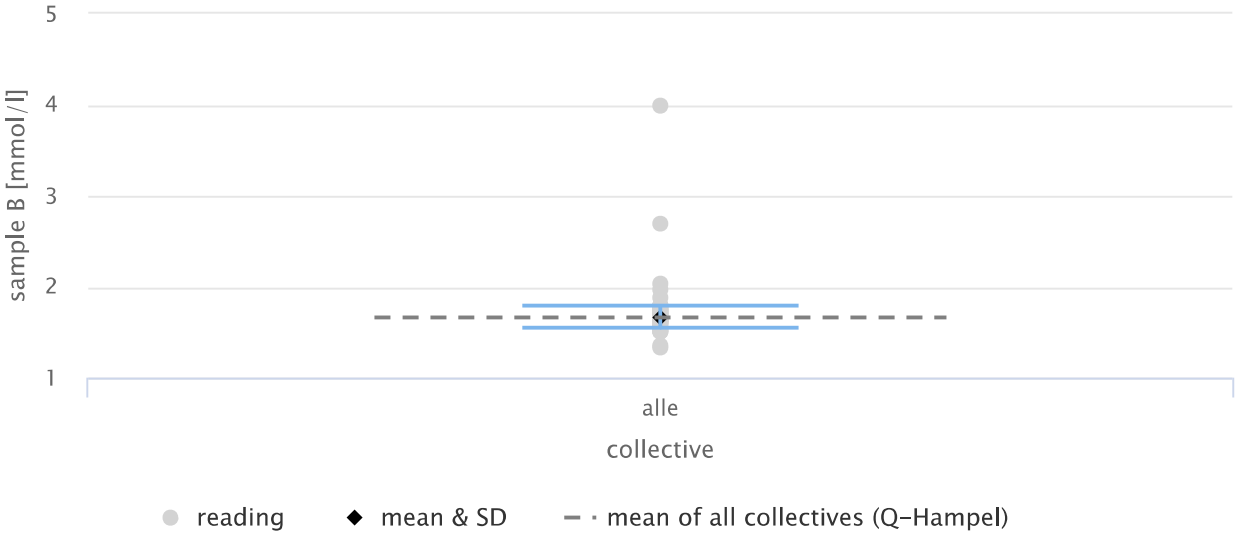
U-Magnesium mmol/l

Split: Methode

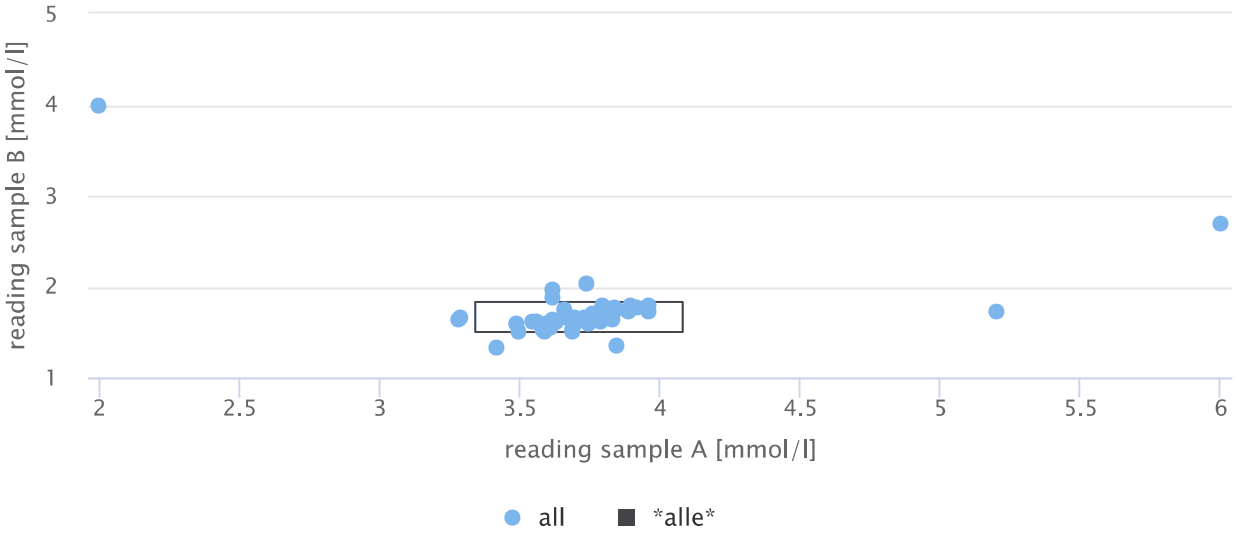
Collective	Sample	AnzE	Target	%-Abw	limits	correct	outliers	MW	Median	SD	CV %
alle	A	50	3.71 [b]	10	[3.34...4.08]	45 (90%)	5 (10%)	3.71	3.71	0.17	4.49
	B	50	1.66 [b]	10	[1.50...1.83]	43 (86%)	7 (14%)	1.66	1.66	0.12	6.94

S-Curves of all samples





Youden-Plots of all sample pairs

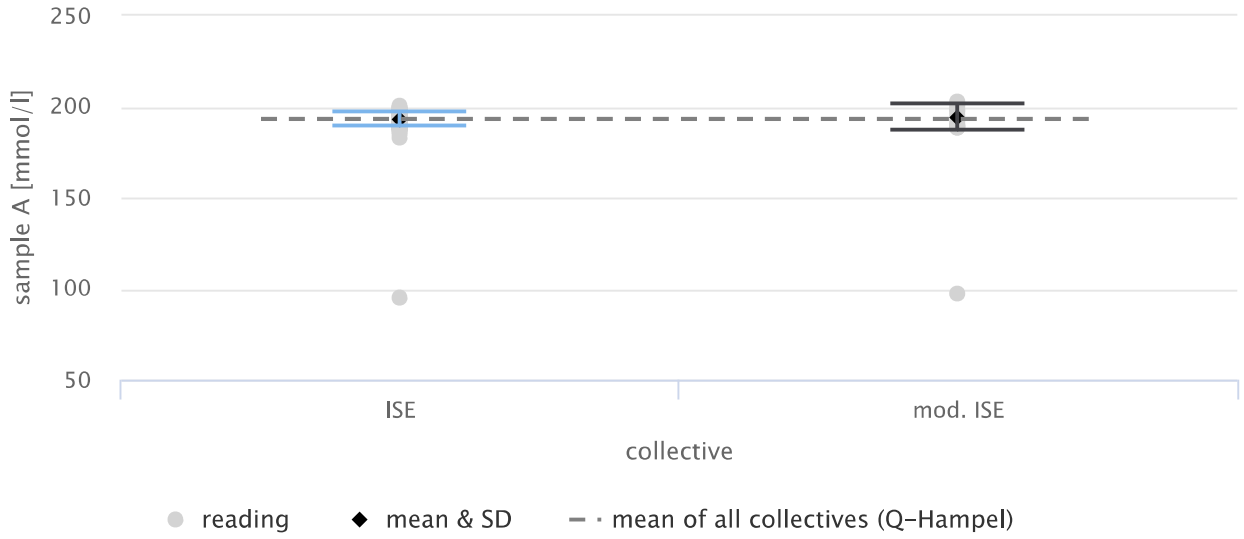


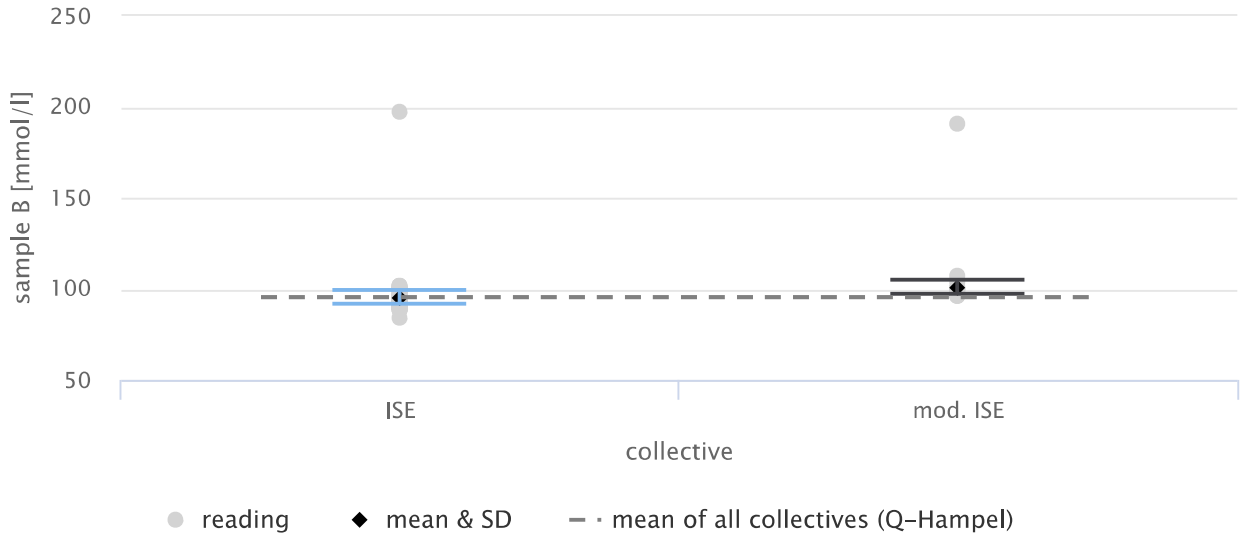
U-Chlorid mmol/l

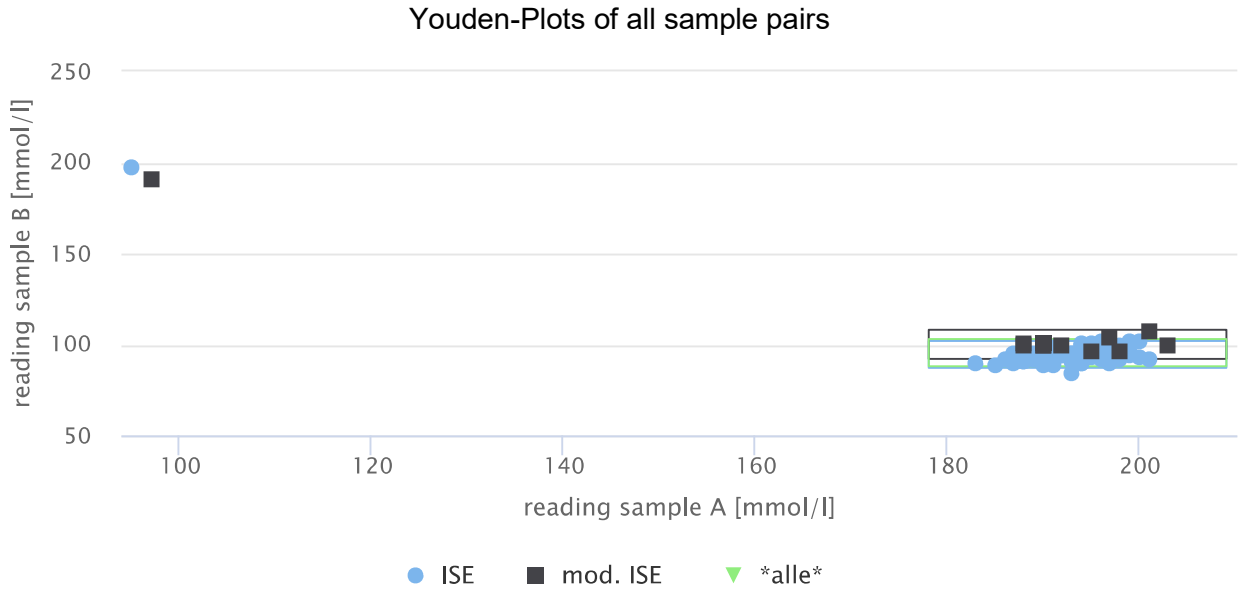
Split: Methode

Collective	Sample	AnzE	Target	%-Abw	limits	correct	outliers	MW	Median	SD	CV %
all	A	92	193 [b]	8	[178...209]	90 (98%)	2 (2%)	193	194	4	2.24
	B	92	95 [b]	8	[88...103]	87 (95%)	5 (5%)	95	95	4	4.63
ISE	A	80	193 [b]	8	[178...209]	79 (99%)	1 (1%)	193	194	4	2.07
	B	80	95 [b]	8	[87...102]	78 (98%)	2 (2%)	95	94	4	4.12
mod. ISE	A	12	194 [b]	8	[178...209]	11 (92%)	1 (8%)	194	191	7	3.53
	B	12	100 [b]	8	[92...108]	11 (92%)	1 (8%)	100	100	4	3.88

S-Curves of all samples





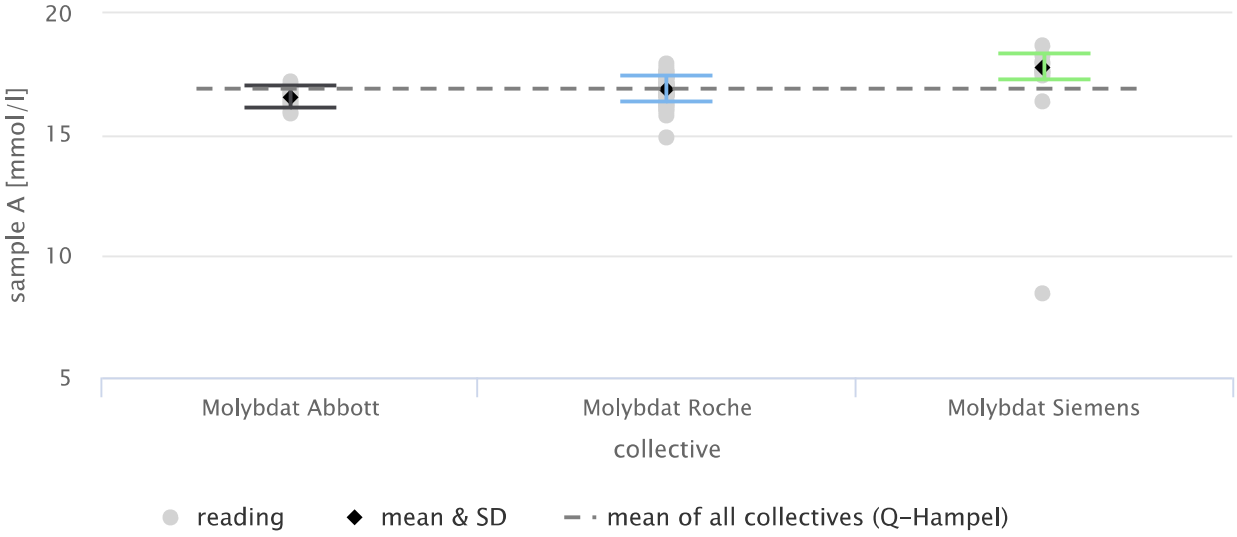


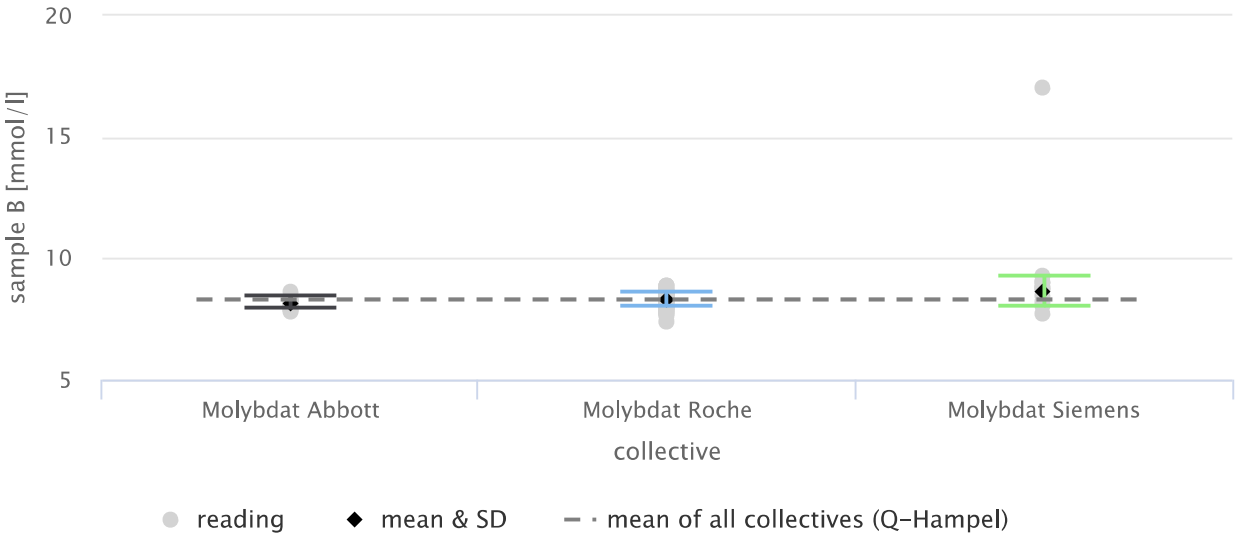
U-Phosphat mmol/l

Split: Methode

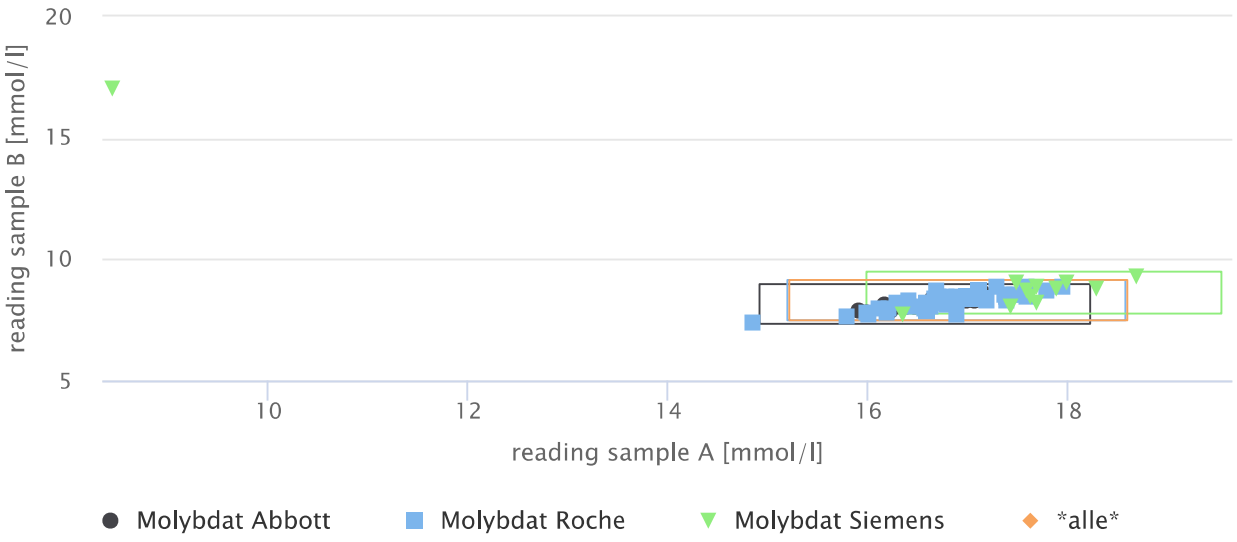
Collective	Sample	AnzE	Target	%-Abw	limits	correct	outliers	MW	Median	SD	CV %
all	A	81	16.90 [b]	10	[15.21...18.59]	78 (96%)	3 (4%)	16.90	16.89	0.63	3.74
	B	81	8.31 [b]	10	[7.48...9.14]	78 (96%)	3 (4%)	8.31	8.33	0.37	4.51
Molybdat Abbott	A	18	16.56 [b]	10	[14.91...18.22]	18 (100%)	0 (0%)	16.56	16.62	0.45	2.70
	B	18	8.15 [b]	10	[7.34...8.97]	18 (100%)	0 (0%)	8.15	8.18	0.25	3.01
Molybdat Roche	A	51	16.88 [b]	10	[15.19...18.57]	50 (98%)	1 (2%)	16.88	16.90	0.54	3.17
	B	51	8.31 [b]	10	[7.48...9.14]	50 (98%)	1 (2%)	8.31	8.37	0.32	3.80
Molybdat Siemens	A	12	17.75 [b]	10	[15.98...19.53]	11 (92%)	1 (8%)	17.75	17.67	0.54	3.06
	B	12	8.63 [b]	10	[7.76...9.49]	10 (83%)	2 (17%)	8.63	8.79	0.61	7.08

S-Curves of all samples





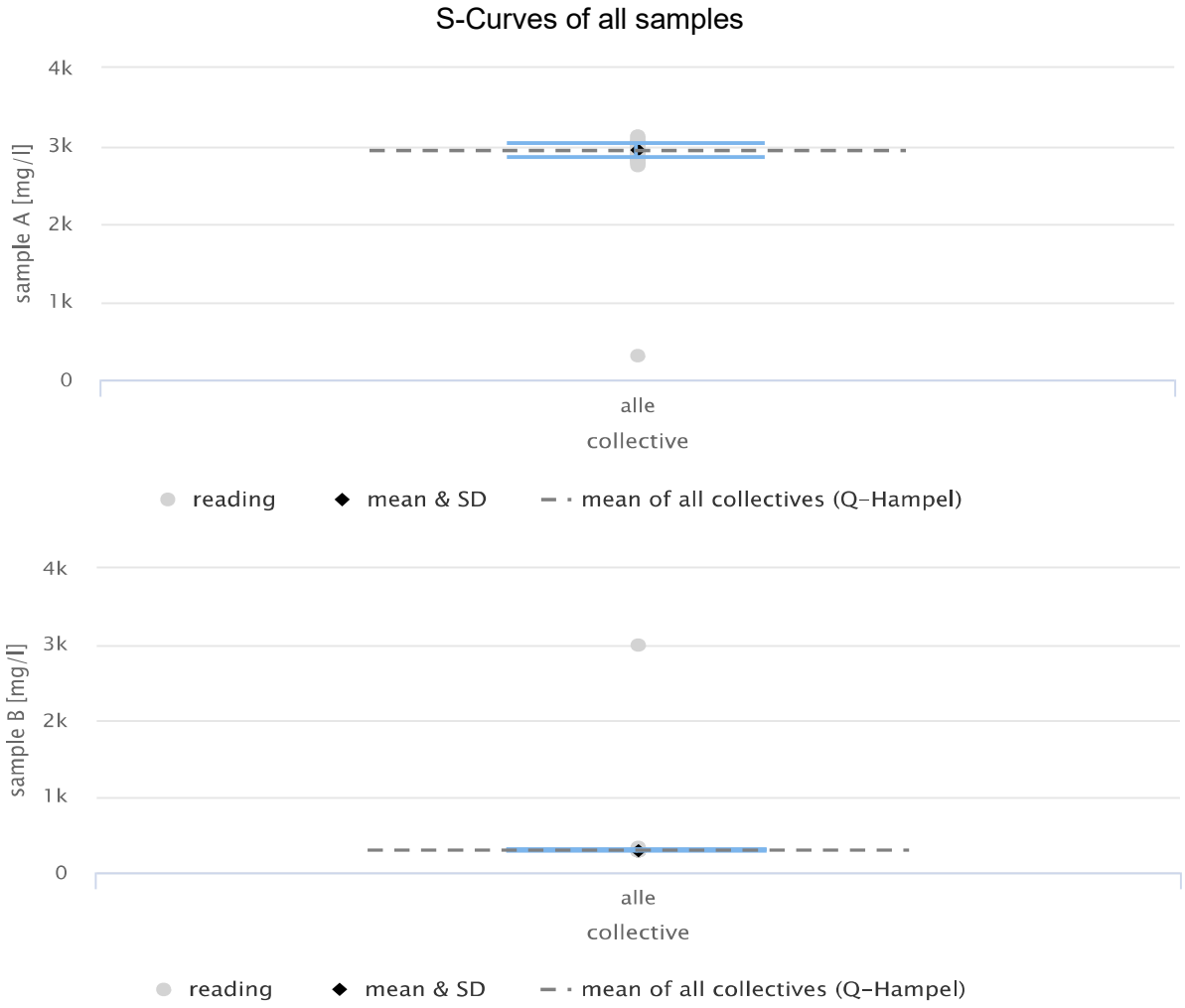
Youden-Plots of all sample pairs

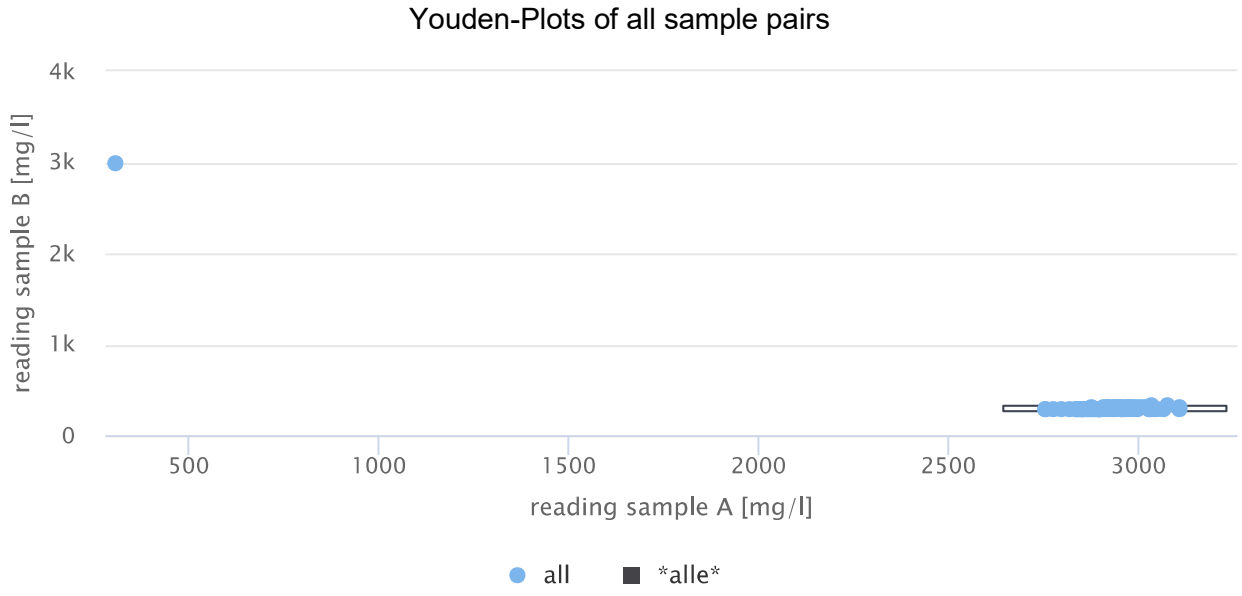


U-glucose mg/l

Split: Methode

Collective	Sample	AnzE	Target	%-Abw	limits	correct	outliers	MW	Median	SD	CV %
alle	A	72	2937 [b]	10	[2644...3231]	71 (99%)	1 (1%)	2937	2930	85	2.90
	B	72	294 [b]	10	[264...323]	71 (99%)	1 (1%)	294	290	10	3.35



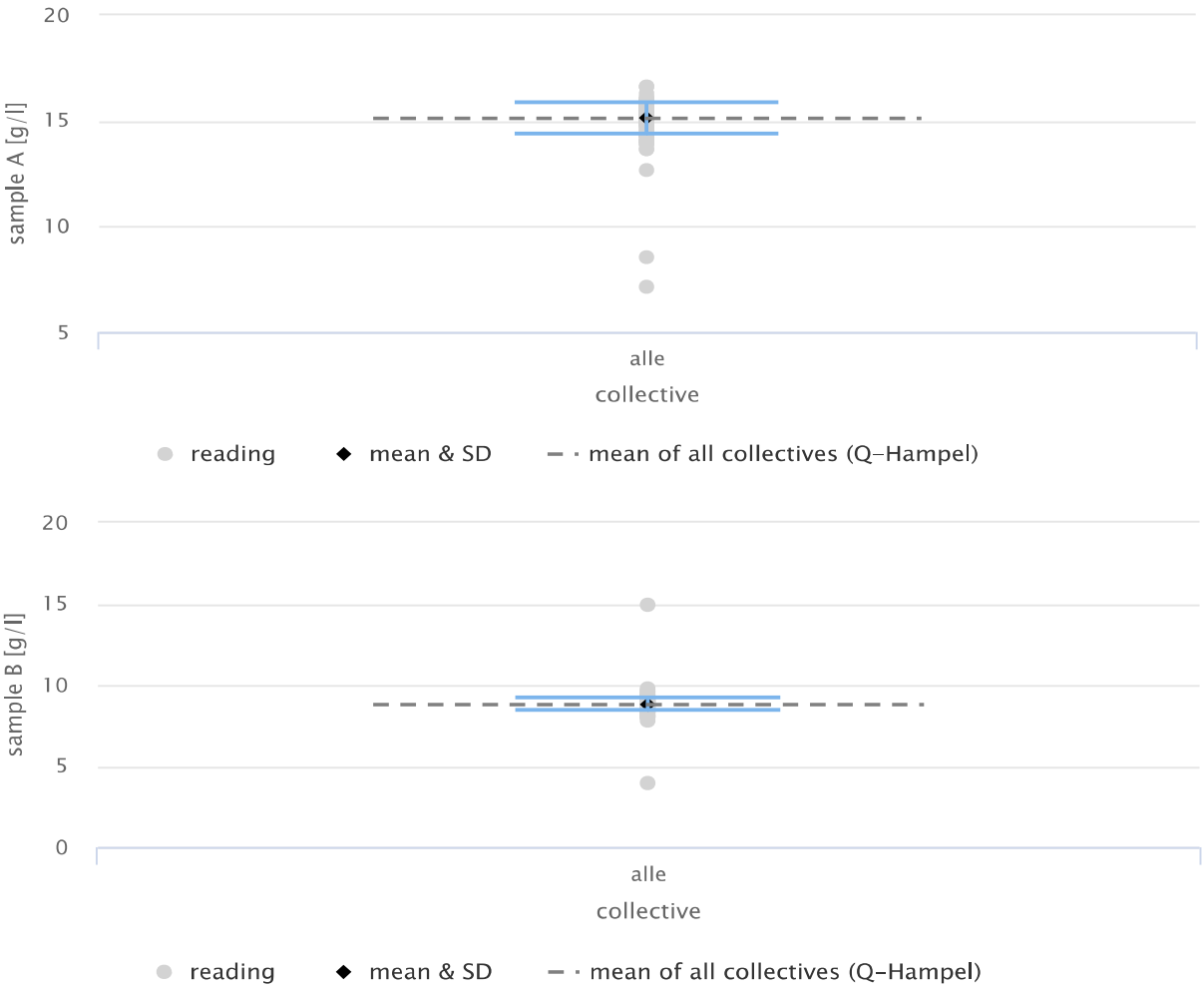


U-urea g/l

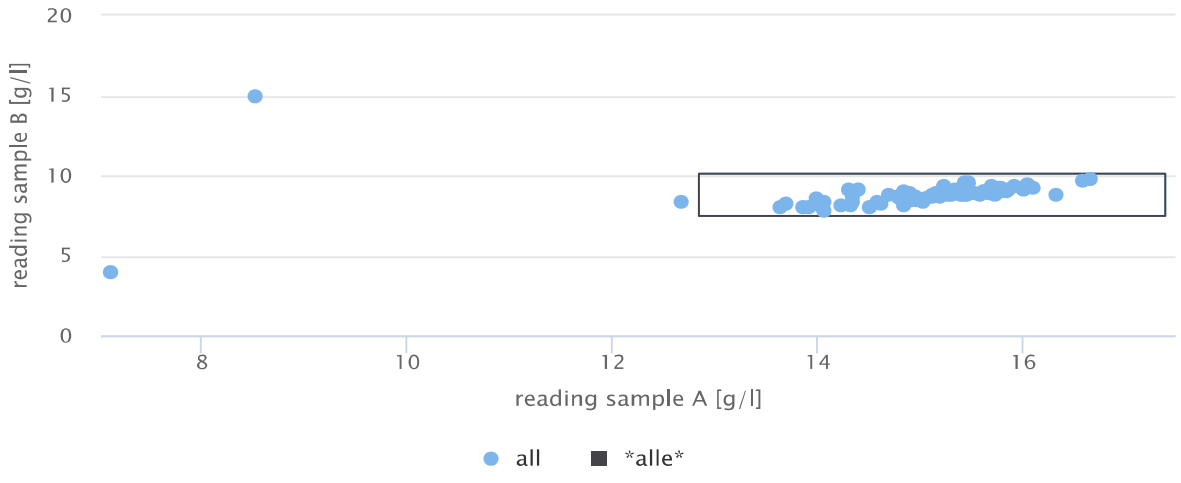
Split: Methode

Collective	Sample	AnzE	Target	%-Abw	limits	correct	outliers	MW	Median	SD	CV %
alle	A	79	15.11 [b]	15	[12.84...17.38]	76 (96%)	3 (4%)	15.11	15.12	0.73	4.86
	B	79	8.79 [b]	15	[7.47...10.11]	77 (97%)	2 (3%)	8.79	8.82	0.43	4.90

S-Curves of all samples



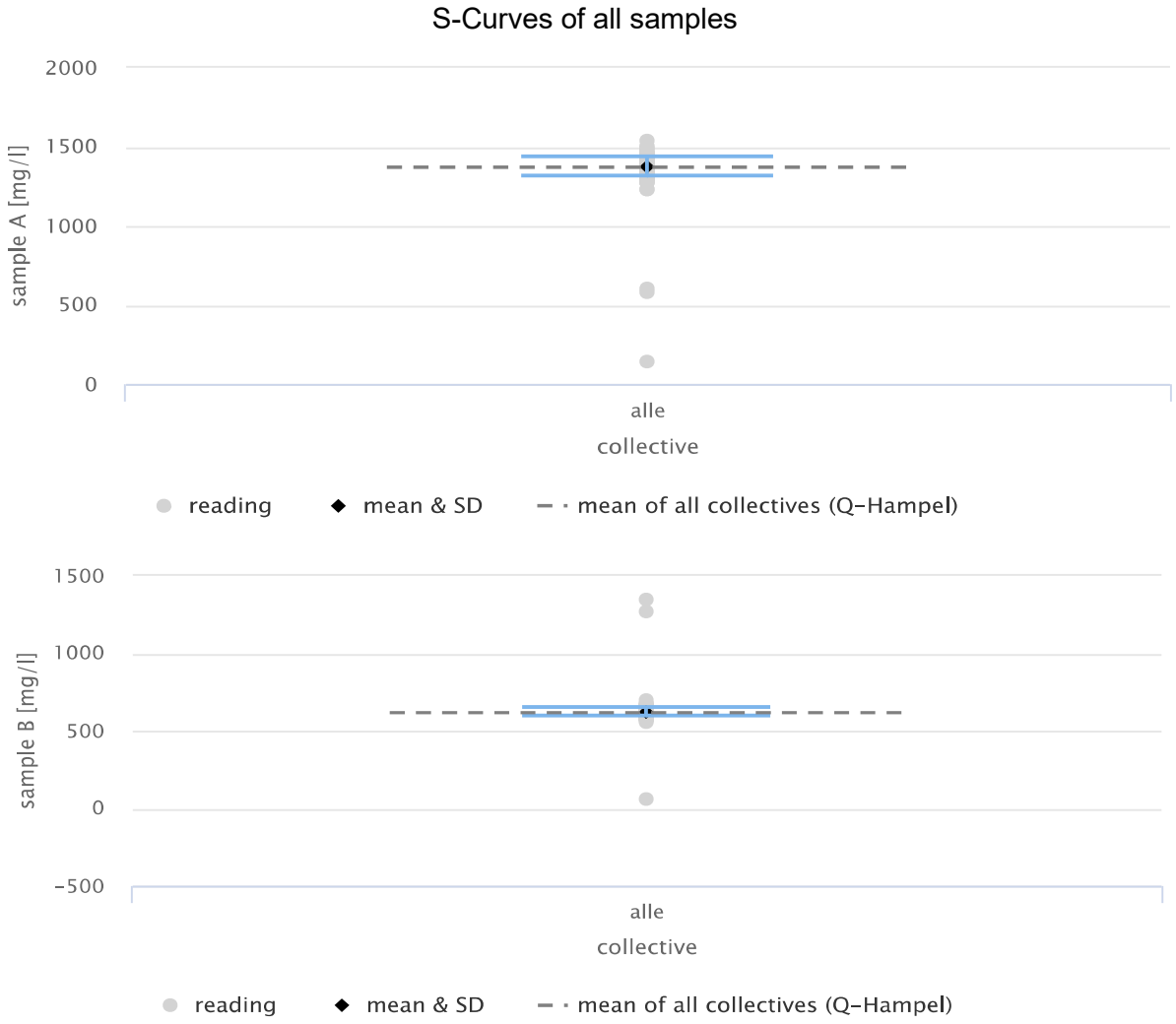
Youden-Plots of all sample pairs

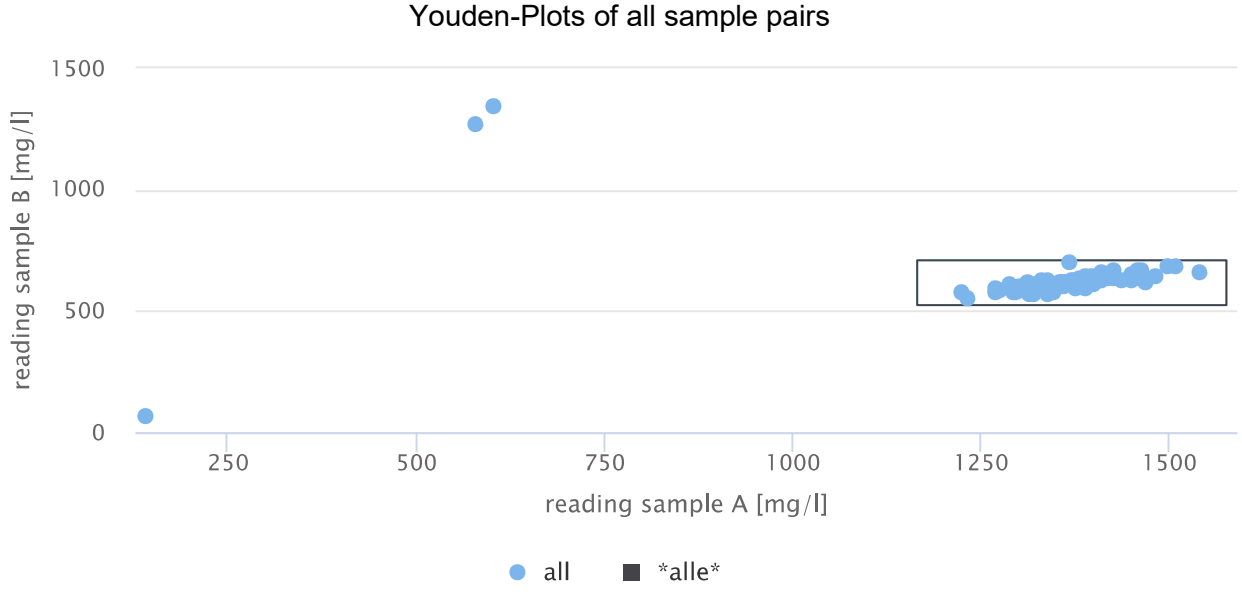


U-creatinine mg/l

Split: Methode

Collective	Sample	AnzE	Target	%-Abw	limits	correct	outliers	MW	Median	SD	CV %
alle	A	102	1371 [b]	15	[1165...1576]	99 (97%)	3 (3%)	1371	1372	60	4.41
	B	102	616 [b]	15	[524...708]	99 (97%)	3 (3%)	616	618	27	4.45



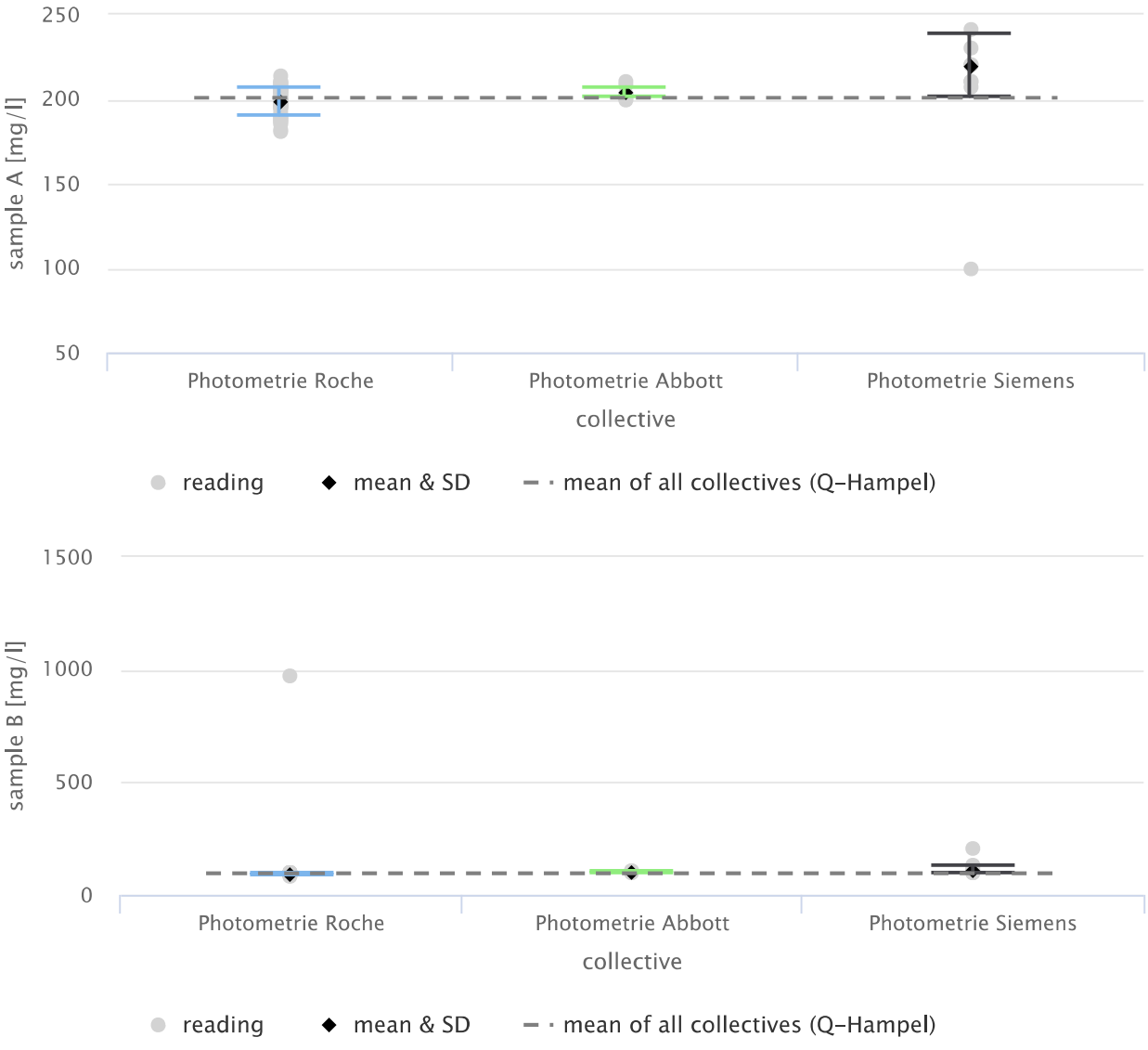


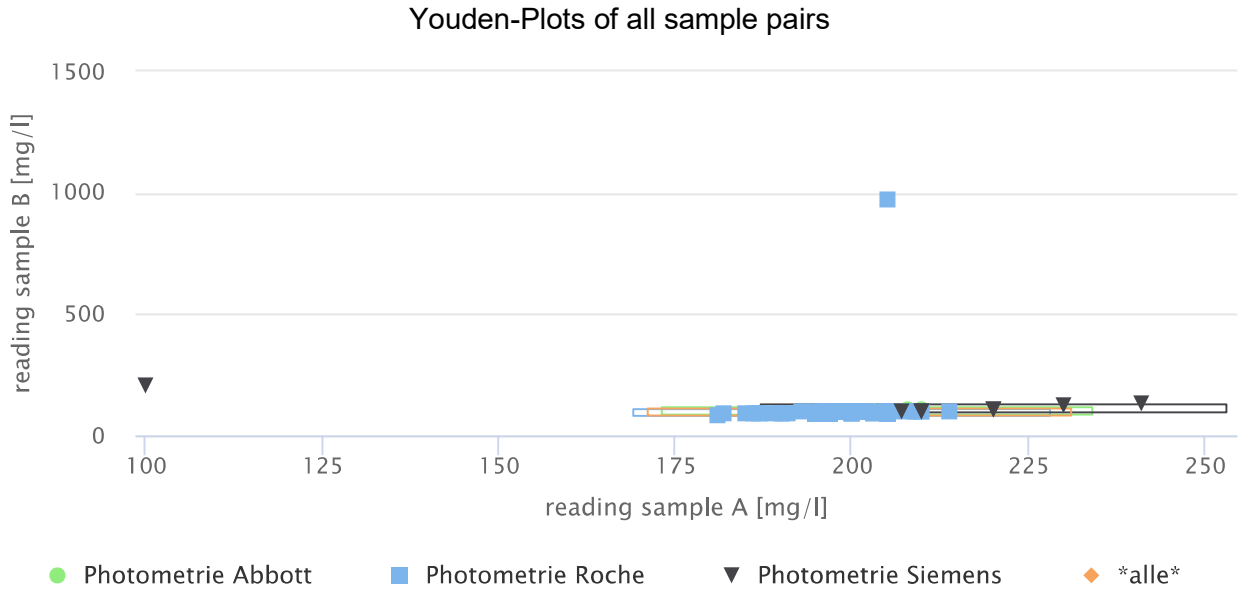
U-uric acid mg/l

Split: Methode

Collective	Sample	AnzE	Target	%-Abw	limits	correct	outliers	MW	Median	SD	CV %
all	A	68	201 [b]	15	[171...231]	66 (97%)	2 (3%)	201	201	9	4.40
	B	68	96 [b]	15	[82...111]	64 (94%)	4 (6%)	96	97	6	6.29
Photometrie Abbott	A	13	204 [b]	15	[173...234]	13 (100%)	0 (0%)	204	203	3	1.23
	B	13	101 [b]	15	[85...116]	13 (100%)	0 (0%)	101	100	2	2.06
Photometrie Roche	A	47	198 [b]	15	[169...228]	47 (100%)	0 (0%)	198	200	8	4.24
	B	47	94 [b]	15	[80...108]	46 (98%)	1 (2%)	94	95	5	4.89
Photometrie Siemens	A	8	220 [b]	15	[187...253]	7 (88%)	1 (12%)	220	215	19	8.60
	B	8	111 [b]	15	[94...128]	6 (75%)	2 (25%)	111	110	17	15.72

S-Curves of all samples



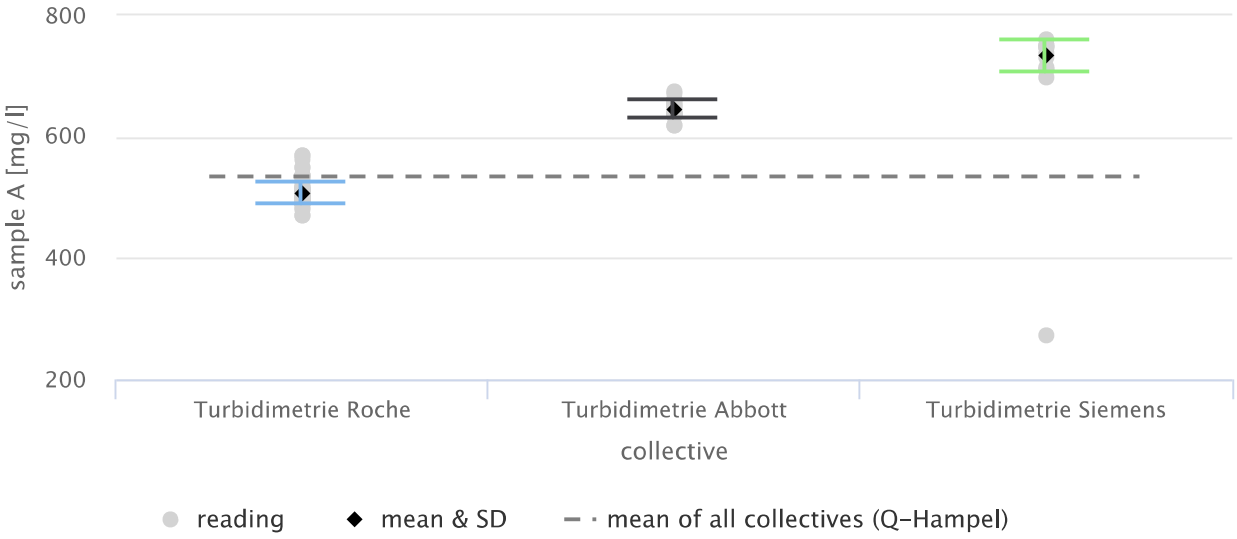


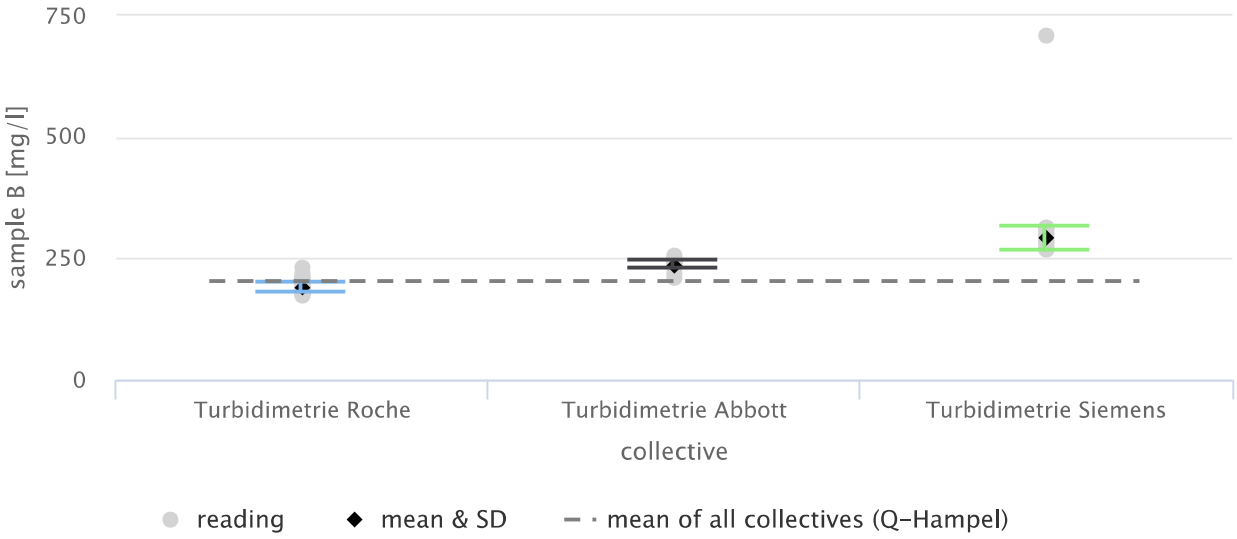
U-total protein mg/l

Split: Methode

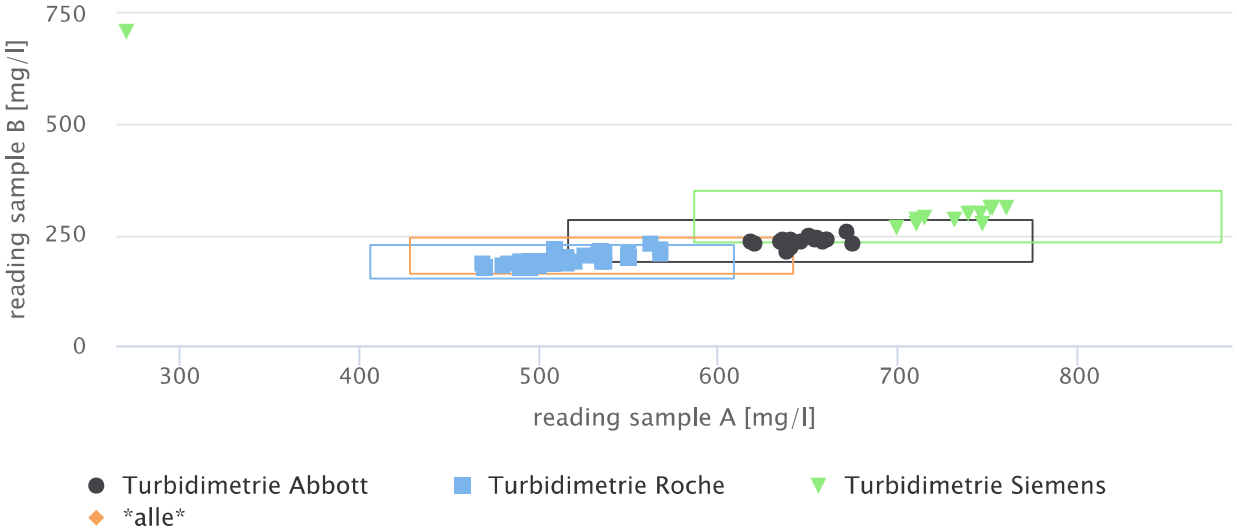
Collective	Sample	AnzE	Target	%-Abw	limits	correct	outliers	MW	Median	SD	CV %
all	A	91	535 [b]	20	[428...641]	69 (76%)	22 (24%)	535	520	44	8.21
	B	91	203 [b]	20	[162...244]	77 (85%)	14 (15%)	203	198	21	10.12
Turbidimetrie Abbott	A	21	645 [b]	20	[516...774]	21 (100%)	0 (0%)	645	640	14	2.11
	B	21	237 [b]	20	[189...284]	21 (100%)	0 (0%)	237	236	7	3.05
Turbidimetrie Roche	A	58	507 [b]	20	[406...608]	58 (100%)	0 (0%)	507	503	18	3.51
	B	58	189 [b]	20	[151...227]	57 (98%)	1 (2%)	189	189	9	4.70
Turbidimetrie Siemens	A	12	733 [b]	20	[586...879]	11 (92%)	1 (8%)	733	735	26	3.62
	B	12	291 [b]	20	[233...350]	11 (92%)	1 (8%)	291	293	25	8.61

S-Curves of all samples





Youden-Plots of all sample pairs

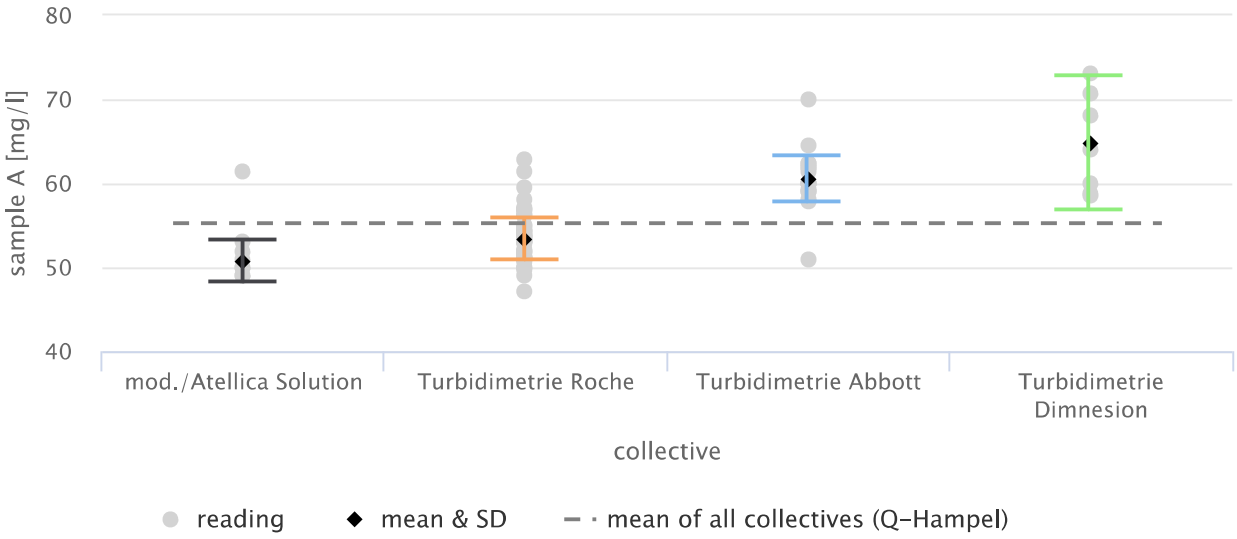


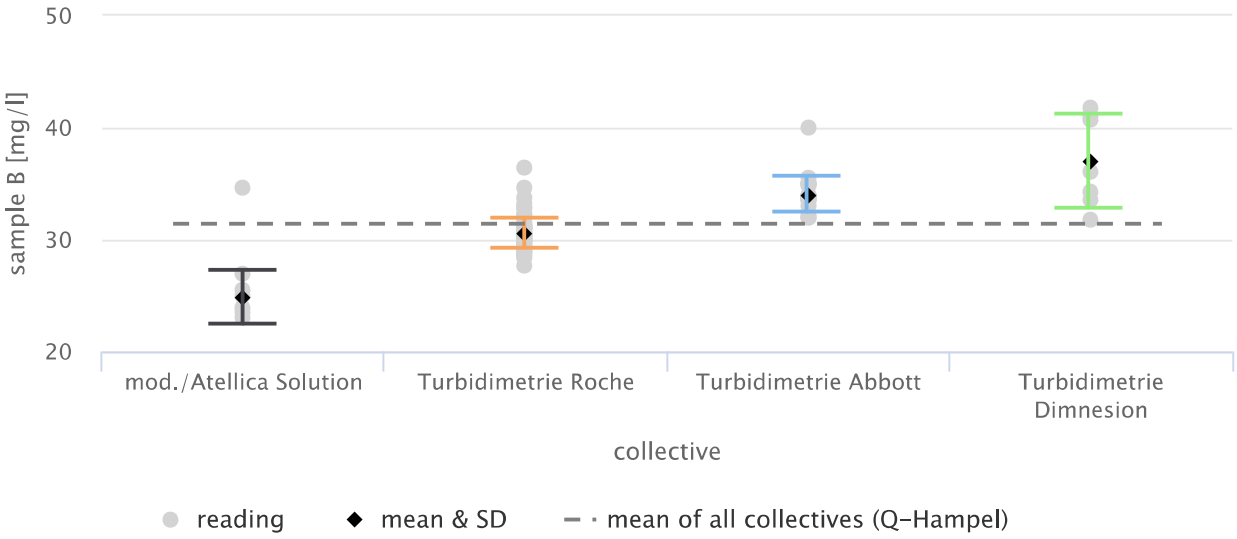
U-Albumin mg/l

Split: Methode

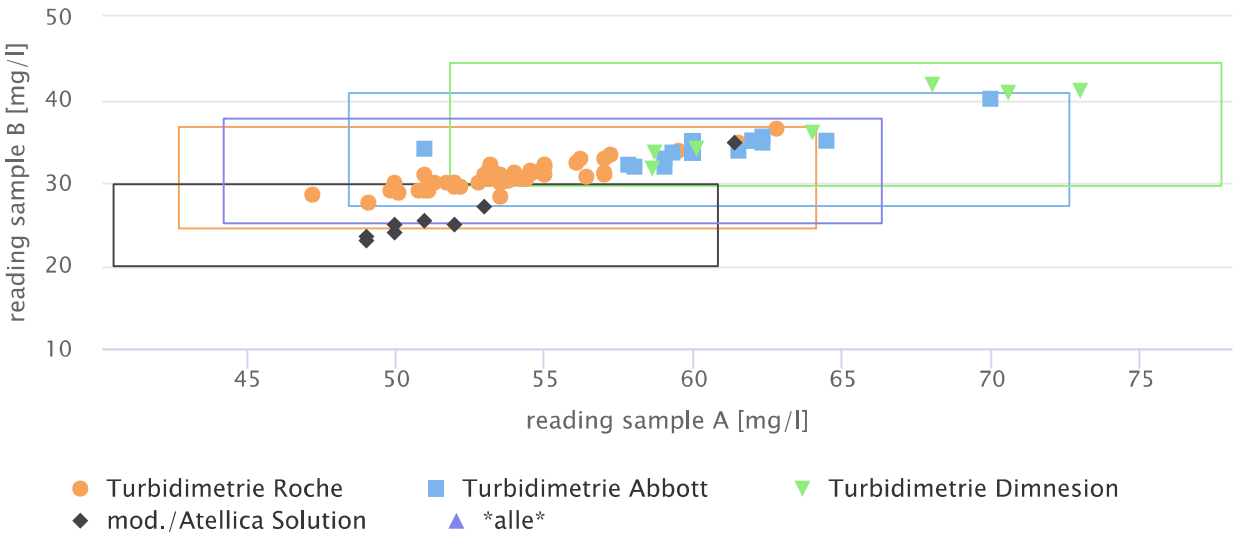
Collective	Sample	AnzE	Target	%-Abw	limits	correct	outliers	MW	Median	SD	CV %
Turbidimetrie Roche	A	54	53.4 [b]	20	[42.7...64.1]	54 (100%)	0 (0%)	53.4	53.5	2.5	4.67
	B	54	30.6 [b]	20	[24.5...36.7]	54 (100%)	0 (0%)	30.6	30.5	1.3	4.31
all	A	87	55.3 [b]	20	[44.2...66.3]	83 (95%)	4 (5%)	55.3	54.2	4.4	7.98
	B	87	31.4 [b]	20	[25.1...37.7]	78 (90%)	9 (10%)	31.4	31.0	2.7	8.50
Turbidimetrie Abbott	A	18	60.5 [b]	20	[48.4...72.6]	18 (100%)	0 (0%)	60.5	60.0	2.7	4.48
	B	18	34.0 [b]	20	[27.2...40.8]	18 (100%)	0 (0%)	34.0	34.0	1.6	4.85
Turbidimetrie Dimnesion	A	7	64.7 [b]	20	[51.8...77.7]	7 (100%)	0 (0%)	64.7	64.0	7.9	12.26
	B	7	37.0 [b]	20	[29.6...44.4]	7 (100%)	0 (0%)	37.0	36.0	4.2	11.33
mod./Atellica Solution	A	8	50.6 [b]	20	[40.5...60.8]	7 (88%)	1 (12%)	50.6	50.5	2.5	4.95
	B	8	24.8 [b]	20	[19.9...29.8]	7 (88%)	1 (12%)	24.8	25.0	2.4	9.48

S-Curves of all samples





Youden-Plots of all sample pairs

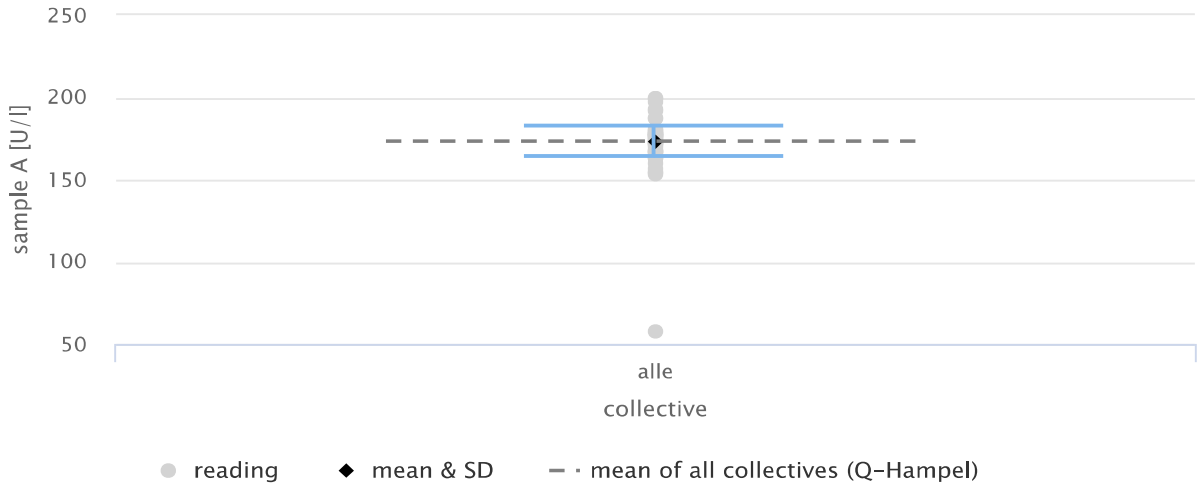


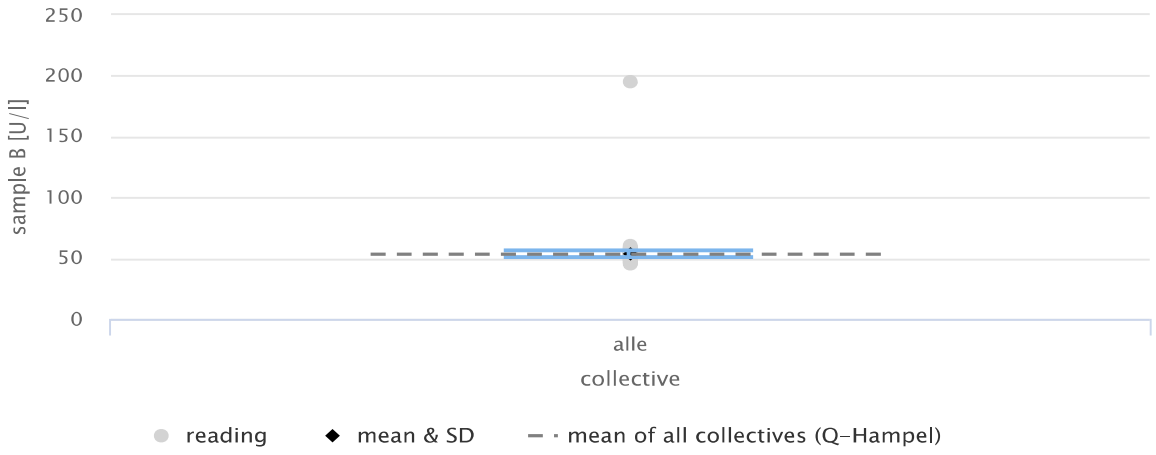
U-Amylase U/l

Split: Methode

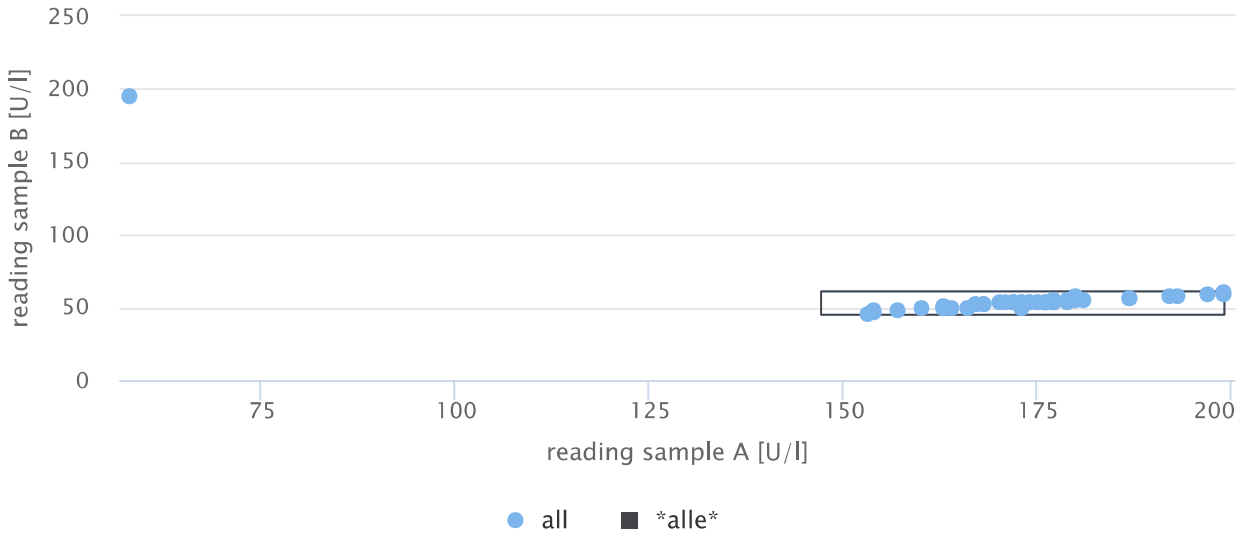
Collective	Sample	AnzE	Target	%-Abw	limits	correct	outliers	MW	Median	SD	CV %
alle	A	53	173 [b]	15	[147...199]	52 (98%)	1 (2%)	173	174	9	5.45
	B	53	53 [b]	15	[45...61]	52 (98%)	1 (2%)	53	53	3	5.66

S-Curves of all samples





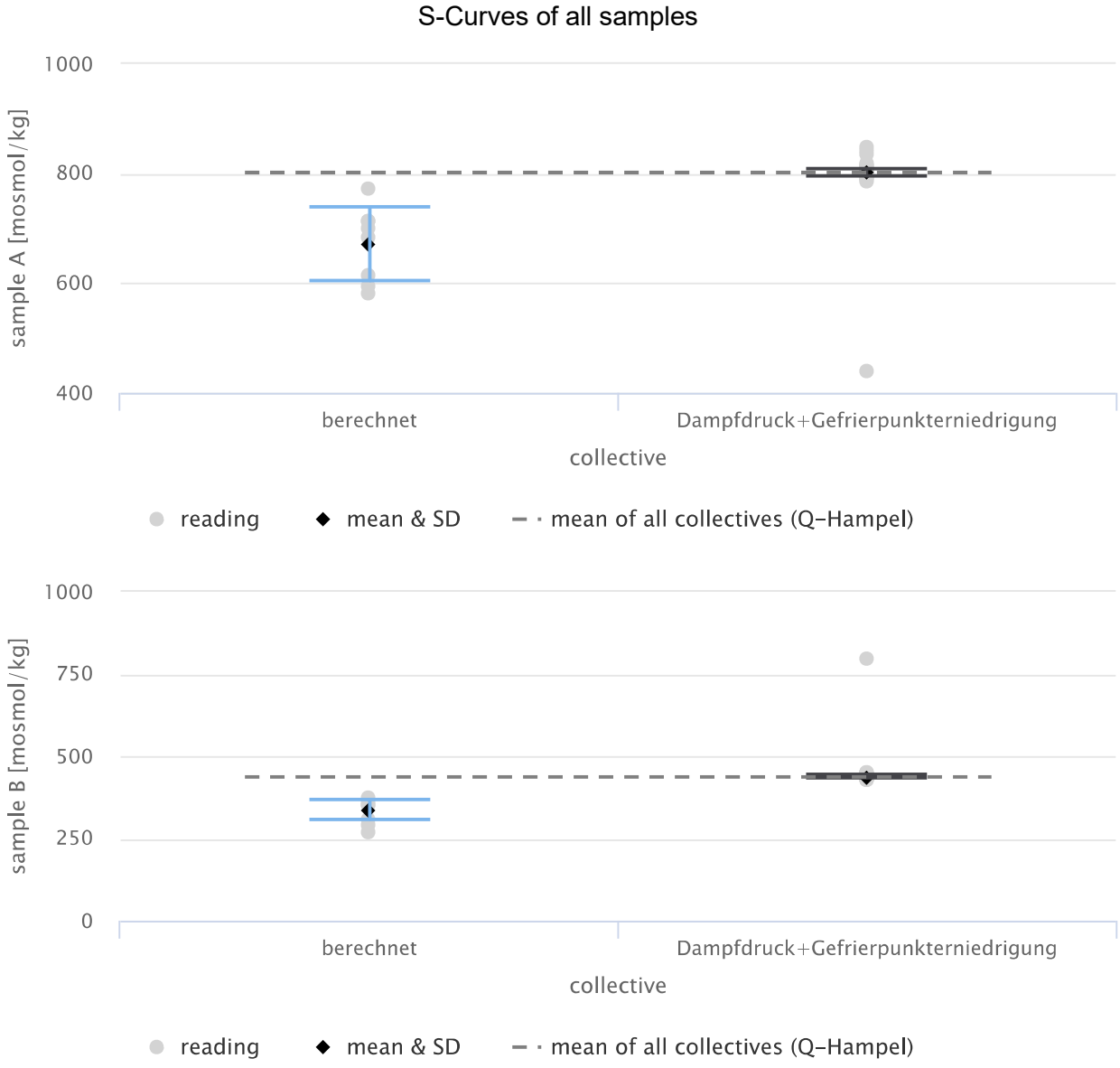
Youden-Plots of all sample pairs

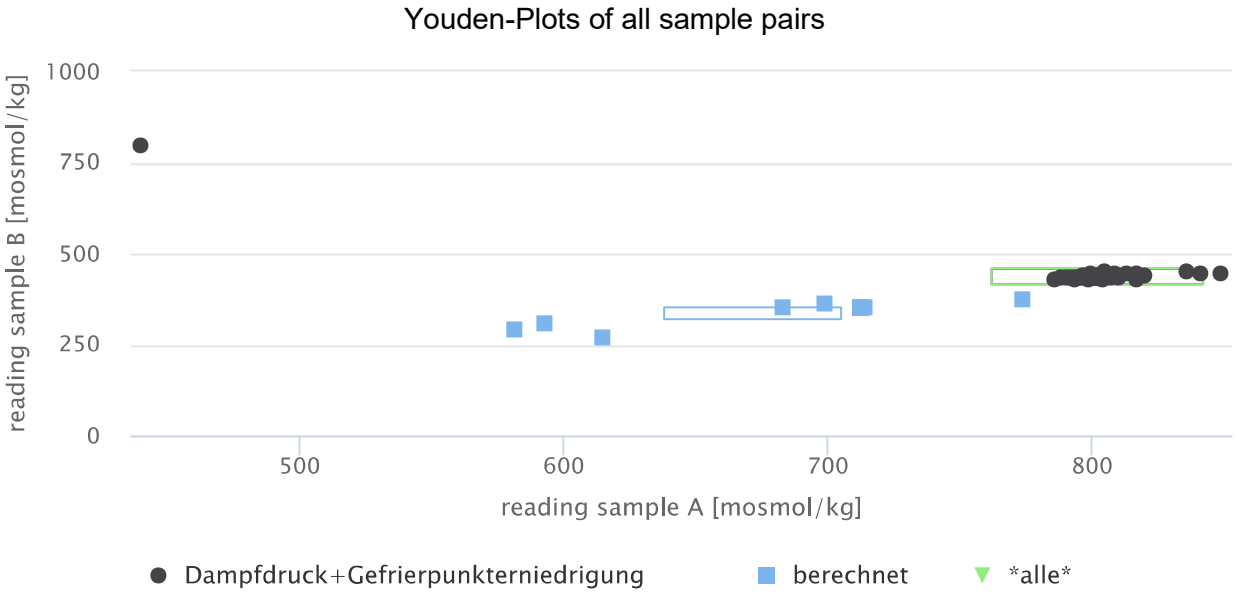


U-osmolality mosmol/kg

Split: Methode

Collective	Sample	Anz E	Target	%-Abw	limits	correct	outliers	MW	Median	SD	CV %
all	A	62	802 [b]	5	[762...842]	53 (85%)	9 (15%)	802	801	9	1.15
	B	62	437 [b]	5	[415...459]	53 (85%)	9 (15%)	437	436	5	1.23
Dampfdruck+Gefrierpunkterniedrigung	A	54	802 [b]	5	[762...842]	52 (96%)	2 (4%)	802	802	7	0.84
	B	54	436 [b]	5	[415...458]	53 (98%)	1 (2%)	436	436	4	0.90
berechnet	A	8	672 [b]*	5*	[638...705]*	2 (25%)*	6 (75%)*	672*	691*	68*	10.08*
	B	8	335 [b]*	5*	[319...352]*	2 (25%)*	6 (75%)*	335*	352*	29*	8.60*





Category (Collectives)

U-sodium mmol/l

Number	Collective	Attribute	Specification
1	ISE	Method	mod./Alinity mod./Architect c 16000 mod./Architect c 4000 mod./Architect c 8000 mod./Beckman Coulter mod./Cobas 6000 mod./Cobas 8000 mod./Cobas c 311 mod./Cobas pro
2	mod. ISE	Method	mod./Atellica Solution mod./Dimension EXL mod./Dimension VISTA

U-potassium mmol/l

Number	Collective	Attribute	Specification
1	ISE	Method	mod./Alinity mod./Architect c 16000 mod./Architect c 4000 mod./Architect c 8000 mod./Beckman Coulter mod./Cobas 6000 mod./Cobas 8000 mod./Cobas c 311 mod./Cobas pro
2	mod. ISE	Method	mod./Atellica Solution mod./Dimension EXL mod./Dimension VISTA

U-calcium mmol/l

Number	Collective	Attribute	Specification
1	Photometrie Abbott	Method	mod./Alinity mod./Architect c 16000 mod./Architect c 4000 mod./Architect c 8000
2	Photometrie Roche	Method	mod./Beckman Coulter mod./Cobas 6000 mod./Cobas 8000 mod./Cobas c 311 mod./Cobas pro
3	Photometrie Siemens	Method	mod./Atellica Solution mod./Dimension EXL mod./Dimension VISTA

U-Magnesium mmol/l

Number	Collective	Attribute	Specification
1	alle	Method	enz./Alinity mod./Architect c 8000 mod./Atellica Solution mod./Beckman Coulter mod./Cobas 6000 mod./Cobas 6000 2nd Gen mod./Cobas 8000 mod./Cobas 8000 2nd Gen mod./Cobas c 311 mod./Cobas c 311 2nd Gen mod./Dimension EXL mod./Dimension VISTA

U-Chlorid mmol/l

Number	Collective	Attribute	Specification
1	ISE	Method	mod./Alinity mod./Architect c 16000 mod./Architect c 4000 mod./Architect c 8000 mod./Beckman Coulter mod./Cobas 6000 mod./Cobas 8000 mod./Cobas c 311 mod./Cobas pro
2	mod. ISE	Method	mod./Atellica Solution mod./Dimension EXL mod./Dimension VISTA

U-Phosphat mmol/l

Number	Collective	Attribute	Specification
1	Molybdat Abbott	Method	mod./Alinity mod./Architect c 16000 mod./Architect c 4000 mod./Architect c 8000 mod./Beckman Coulter mod./Cobas c 311
2	Molybdat Roche	Method	mod./Cobas 6000 mod./Cobas 8000 mod./Cobas pro
3	Molybdat Siemens	Method	mod./Atellica Solution mod./Dimension EXL mod./Dimension VISTA

U-glucose mg/l

Number	Collective	Attribute	Specification
1	alle	Method	mod./Alinity mod./Architect c 16000 mod./Architect c 4000 mod./Architect c 8000 mod./Atellica Solution mod./Beckman Coulter mod./Cobas 6000 mod./Cobas 8000 mod./Cobas c 311 mod./Cobas pro mod./Dimension VISTA

U-urea g/l

Number	Collective	Attribute	Specification
1	alle	Method	mod./Alinity mod./Architect c 16000 mod./Architect c 4000 mod./Architect c 8000 mod./Atellica Solution mod./Beckman Coulter mod./Cobas 6000 mod./Cobas 8000 mod./Cobas c 311 mod./Dimension EXL mod./Dimension VISTA

U-creatinine mg/l

Number	Collective	Attribute	Specification
1	alle	Method	enz./Alinity enz./Architect c 4000 enz./Architect c 8000 Jaffe/Alinity Jaffe/Architect c 4000 Jaffe/Architect c 8000 Jaffe/Architect c 16000 Jaffe/Atellica Solution Jaffe/Beckman Coulter Jaffe/Cobas 6000 Jaffe/Cobas 8000 Jaffe/Cobas pro Jaffe/Dimension EXL Jaffe/Dimension VISTA Jaffe/Integra mod. kin. Jaffe/Beckman Coulter mod./Alinity mod./Atellica Solution mod./Beckman Coulter mod./Cobas 6000 mod./Cobas 8000 mod./Cobas c 311 mod./Dimension VISTA

U-uric acid mg/l

Number	Collective	Attribute	Specification
1	Photometrie Abbott	Method	mod./Alinity mod./Architect c 16000 mod./Architect c 4000 mod./Architect c 8000 mod./Beckman Coulter
2	Photometrie Roche	Method	mod./Cobas 6000 mod./Cobas 8000 mod./Cobas c 311 mod./Cobas pro
3	Photometrie Siemens	Method	mod./Atellica Solution mod./Dimension EXL mod./Dimension VISTA

U-total protein mg/l

Number	Collective	Attribute	Specification
1	Turbidimetrie Abbott	Method	mod./Alinity mod./Architect c 16000 mod./Architect c 4000 mod./Architect c 8000 photom./Beckman Coulter
2	Turbidimetrie Roche	Method	mod./Cobas c 311 Turb./Cobas 6000 Turb./Cobas 8000 Turb./Cobas pro Turb./Integra
3	Turbidimetrie Siemens	Method	mod./Atellica Solution mod./Dimension EXL mod./Dimension VISTA

U-Albumin mg/l

Number	Collective	Attribute	Specification
1	Turbidimetrie Roche	Method	mod./Cobas c 311 Neph./BNA II Turb./Beckman Coulter Turb./Cobas 6000 Turb./Cobas 6000 2nd Gen Turb./Cobas 8000 Turb./Cobas 8000 2nd Gen Turb./Integra
2	Turbidimetrie Abbott	Method	mod./Alinity mod./Architect c 16000 mod./Architect c 4000 mod./Architect c 8000 Turb./Alinity
3	Turbidimetrie Dimnesion	Method	mod./Dim. VISTA korr. mod./Dimension EXL mod./Dimension VISTA Neph./Prospec
4	mod./Atellica Solution	Method	mod./Atellica Solution

U-Amylase U/l

Number	Collective	Attribute	Specification
1	alle	Method	mod./Alinity mod./Architect c 16000 mod./Architect c 4000 mod./Architect c 8000 mod./Atellica Solution mod./Beckman Coulter mod./Cobas 6000 mod./Cobas 8000 mod./Cobas c 311 mod./Cobas pro mod./Dimension EXL mod./Dimension VISTA

U-osmolality mosmol/kg

Number	Collective	Attribute	Specification
1	Dampfdruck+Gefrierpunkterniedrigung	Method	OM6050/Menarini Dampfdruck Gefrierpunkterniedrigung
2	berechnet	Method	ber./Cobas c xxx ber./Cobas xxx calculated

With best regards

Dr. Christoph Buchta, MBA
Technical Management

Prim. Dr. Harald Rubey
EQA Scheme Director