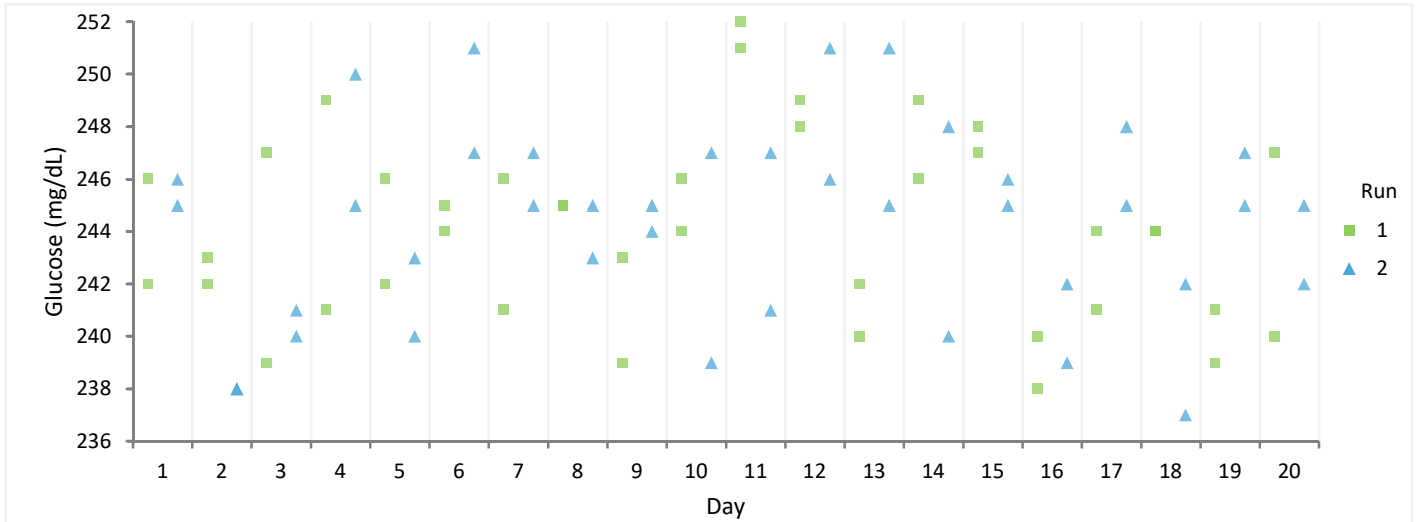


MSA: Glucose

CLSI EP05-A2 - Appendix B

Last updated 10 August 2018 at 12:13 by Simon

Descriptives



N | 80
 Design | 20 Day x 2 Run x 2 Observations

Precision

	Mean	Repeatability SD	Repeatability CV	Within Laboratory SD	Within Laboratory CV
	244.2	2.8	1.2%	3.6	1.5%

Component	% of Total	SD	Exact / Satterthwaite 95% CI	CV
Repeatability	61.1%	2.8	2.3 to 3.6	1.2%
Between Run	23.8%	1.8		0.7%
Within Day	84.9%	3.3	2.7 to 4.2	1.4%
Between Day	15.1%	1.4		0.6%
Within Laboratory	100.0%	3.6	3.1 to 4.3	1.5%

ANOVA

Source	SS	DF	MS	Expected MS
Day	415.8	19	21.9	$\sigma^2_{\text{Error}} + 2\sigma^2_{\text{Run}(\text{Day})} + 4\sigma^2_{\text{Day}}$
Run(Day)	281.0	20	14.1	$\sigma^2_{\text{Error}} + 2\sigma^2_{\text{Run}(\text{Day})}$
Error	316.0	40	7.9	σ^2_{Error}

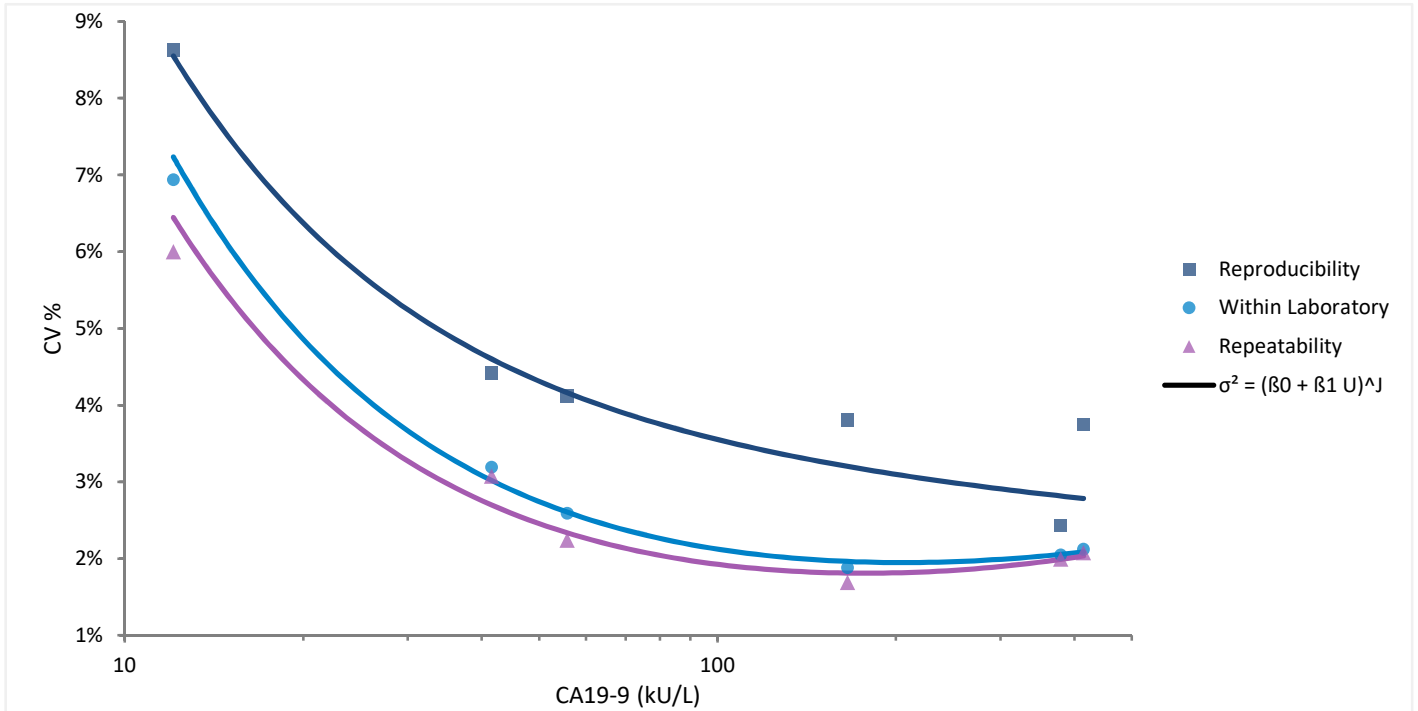
Descriptives

N	450
Design	6 Sample x 3 Laboratory x 5 Run x 5 Observations
Measuring interval	12.08 to 414.29

Precision

Sample	Mean	Repeatability SD	Repeatability CV	Within Laboratory SD	Within Laboratory CV	Reproducibilit y SD	Reproducibilit y CV
P1	12.08	0.72	6.0%	0.84	6.9%	1.04	8.6%
P2	41.58	1.28	3.1%	1.33	3.2%	1.84	4.4%
Q3	55.75	1.25	2.2%	1.44	2.6%	2.29	4.1%
Q4	165.66	2.80	1.7%	3.11	1.9%	6.30	3.8%
P5	379.09	7.55	2.0%	7.76	2.0%	9.22	2.4%
Q6	414.29	8.60	2.1%	8.77	2.1%	15.53	3.7%

Profile



Model | 3-parameter variance function
 Equation | $\sigma^2 = (\beta_0 + \beta_1 U)^J$

Parameter	Repeatability	Within Laboratory	Reproducibility
β_0	0.760755	0.805447	0.624318
β_1	7.58319E-03	8.75895E-03	3.41196E-02
J	3.12990	2.89619	1.81635
-LogLikelihood	3.6664	0.85387	1.7992
U_{minimum}	12.08	12.08	12.08
U_{maximum}	414.29	414.29	414.29

Sample P1

Component	% of Total	SD	Exact / Satterthwaite	CV
			95% CI	
Repeatability	48.3%	0.72	0.61 to 0.88	6.0%
Between Run	16.4%	0.42		3.5%
Within Laboratory	64.6%	0.84	0.70 to 1.04	6.9%
Between Laboratory	35.4%	0.62		5.1%
Reproducibility	100.0%	1.04	0.74 to 1.75	8.6%

ANOVA

Source	SS	DF	MS	Expected MS
Laboratory	22.04	2	11.02	$\sigma_{\text{Error}}^2 + 5\sigma_{\text{Run(Laboratory)}}^2 + 25\sigma_{\text{Laboratory}}^2$
Run(Laboratory)	16.96	12	1.41	$\sigma_{\text{Error}}^2 + 5\sigma_{\text{Run(Laboratory)}}^2$
Error	31.49	60	0.52	σ_{Error}^2

Sample P2

Component	% of Total	SD	Exact / Satterthwaite	CV
			95% CI	
Repeatability	48.4%	1.28	1.09 to 1.56	3.1%
Between Run	3.6%	0.35		0.8%
Within Laboratory	52.1%	1.33	1.14 to 1.59	3.2%
Between Laboratory	47.9%	1.27		3.1%
Reproducibility	100.0%	1.84	1.23 to 3.60	4.4%

ANOVA

Source	SS	DF	MS	Expected MS
Laboratory	85.45	2	42.72	$\sigma_{\text{Error}}^2 + 5\sigma_{\text{Run(Laboratory)}}^2 + 25\sigma_{\text{Laboratory}}^2$
Run(Laboratory)	27.01	12	2.25	$\sigma_{\text{Error}}^2 + 5\sigma_{\text{Run(Laboratory)}}^2$
Error	98.09	60	1.63	σ_{Error}^2

Sample Q3

Component	% of Total	SD	Exact / Satterthwaite	CV
			95% CI	
Repeatability	29.7%	1.25	1.06 to 1.52	2.2%
Between Run	10.0%	0.72		1.3%
Within Laboratory	39.6%	1.44	1.21 to 1.79	2.6%
Between Laboratory	60.4%	1.78		3.2%
Reproducibility	100.0%	2.29	1.43 to 5.70	4.1%

ANOVA

Source	SS	DF	MS	Expected MS
Laboratory	167.06	2	83.53	$\sigma_{\text{Error}}^2 + 5\sigma_{\text{Run(Laboratory)}}^2 + 25\sigma_{\text{Laboratory}}^2$
Run(Laboratory)	50.11	12	4.18	$\sigma_{\text{Error}}^2 + 5\sigma_{\text{Run(Laboratory)}}^2$
Error	93.60	60	1.56	σ_{Error}^2

Sample Q4

Component	% of Total	SD	Exact / Satterthwaite	CV
			95% CI	
Repeatability	19.7%	2.80	2.37 to 3.40	1.7%
Between Run	4.7%	1.37		0.8%
Within Laboratory	24.3%	3.11	2.63 to 3.81	1.9%
Between Laboratory	75.7%	5.48		3.3%
Reproducibility	100.0%	6.30	3.65 to 21.20	3.8%

ANOVA

Source	SS	DF	MS	Expected MS
Laboratory	1537.97	2	768.98	$\sigma^2_{\text{Error}} + 5\sigma^2_{\text{Run(Laboratory)}} + 25\sigma^2_{\text{Laboratory}}$
Run(Laboratory)	205.73	12	17.14	$\sigma^2_{\text{Error}} + 5\sigma^2_{\text{Run(Laboratory)}}$
Error	468.77	60	7.81	σ^2_{Error}

Sample P5

Component	% of Total	SD	Exact / Satterthwaite	CV
			95% CI	
Repeatability	67.0%	7.55	6.41 to 9.19	2.0%
Between Run	3.7%	1.78		0.5%
Within Laboratory	70.7%	7.76	6.65 to 9.30	2.0%
Between Laboratory	29.3%	4.99		1.3%
Reproducibility	100.0%	9.22	6.91 to 13.88	2.4%

ANOVA

Source	SS	DF	MS	Expected MS
Laboratory	1391.14	2	695.57	$\sigma^2_{\text{Error}} + 5\sigma^2_{\text{Run(Laboratory)}} + 25\sigma^2_{\text{Laboratory}}$
Run(Laboratory)	874.77	12	72.90	$\sigma^2_{\text{Error}} + 5\sigma^2_{\text{Run(Laboratory)}}$
Error	3418.02	60	56.97	σ^2_{Error}

Sample Q6

Component	% of Total	SD	Exact / Satterthwaite	CV
			95% CI	
Repeatability	30.7%	8.60	7.30 to 10.47	2.1%
Between Run	1.3%	1.74		0.4%
Within Laboratory	31.9%	8.77	7.53 to 10.51	2.1%
Between Laboratory	68.1%	12.81		3.1%
Reproducibility	100.0%	15.53	9.35 to 43.67	3.7%

ANOVA

Source	SS	DF	MS	Expected MS
Laboratory	8383.61	2	4191.81	$\sigma^2_{\text{Error}} + 5\sigma^2_{\text{Run(Laboratory)}} + 25\sigma^2_{\text{Laboratory}}$
Run(Laboratory)	1068.76	12	89.06	$\sigma^2_{\text{Error}} + 5\sigma^2_{\text{Run(Laboratory)}}$
Error	4437.54	60	73.96	σ^2_{Error}