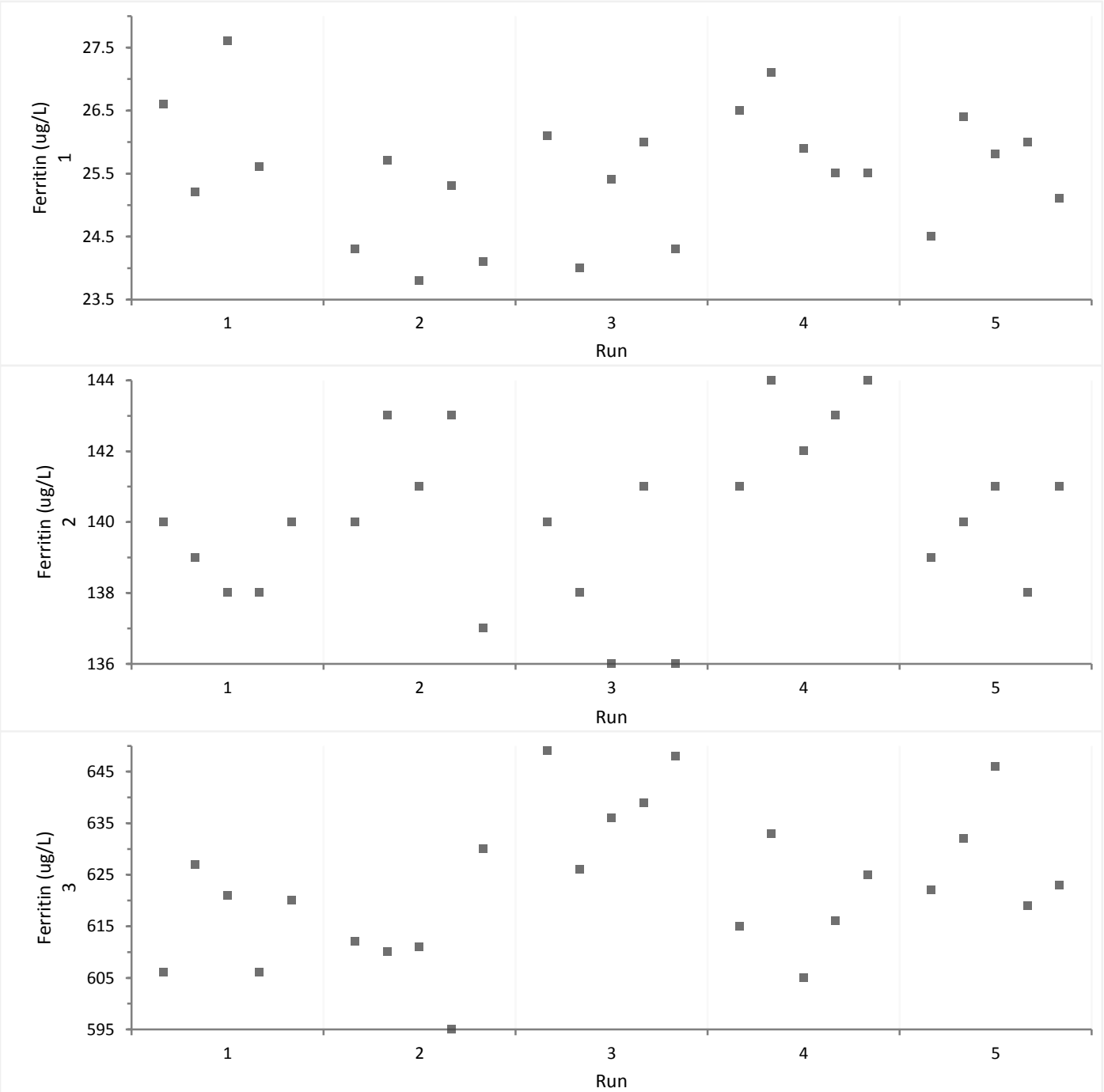
MSA: Ferritin

Analyse-it v4.00

CLSI EP15-A3 - Table 8

Last updated 23 June 2015 at 15:03 by Simon Huntington

Descriptives



N	75
Design	3 x 5 x 5 *

* Unequal number of observations for all possible combinations of factor levels.

Measuring interval	25.51 to 622.88

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Precision

Sample	Mean	SD	CV
1	25.51	1.01	4.0%
2	140.12	2.39	1.7%
3	622.88	14.70	2.4%

Abbreviated components

Mean	Within Run SD	Within Run CV	Total SD	Total CV
25.51	0.86	3.4%	1.01	4.0%
140.12	1.78	1.3%	2.39	1.7%
622.88	10.65	1.7%	14.70	2.4%

Sample 1

Detailed components

Component	SD	CV	Expected SD / CV	p-value
Within Run	0.86	3.4%	3.3%	0.4023 [1]
Between Run	0.53	2.1%		
Total	1.01	4.0%	5.3%	0.9158 [1]

H0: $\sigma \le \sigma_0$

The imprecision is less than or equal to the expected imprecision.

H1: $\sigma > \sigma_0$

The imprecision is greater than the expected imprecision.

[1] Do not reject the null hypothesis at the 5% familywise (1.67% individual) significance level.

X^2 test

	SD	Expected SD	X^2 statistic	DF	p-value
Within Run	0.86	0.84	19.87	19	0.4023
Total	1.01	1.35	8.94	16	0.9158

ANOVA

Effect	Type I SS	DF	MS	Expected MS
Run	8.34	4	2.09	$\sigma^2_{Error} + 4.792\sigma^2_{Run}$
Error	14.09	19	0.74	σ^2_{Error}

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Sample 2

Detailed components

Component	SD	CV	Expected SD / CV	p-value
Within Run	1.78	1.3%	2.0%	0.9915 [1]
Between Run	1.59	1.1%		
Total	2.39	1.7%	3.4%	0.9935 [1]

H0: $\sigma \le \sigma_0$

The imprecision is less than or equal to the expected imprecision.

H1: $\sigma > \sigma_0$

The imprecision is greater than the expected imprecision.

[1] Do not reject the null hypothesis at the 5% familywise (1.67% individual) significance level.

X^2 test

	SD	Expected SD	X^2 statistic	DF	p-value
Within Run	1.78	2.80	8.05	20	0.9915
Total	2.39	4.76	2.76	11	0.9935

ANOVA

Effect	SS	DF	MS	Expected MS
Run	63.44	4	15.86	$\sigma^2_{Error} + 5\sigma^2_{Run}$
Error	63.20	20	3.16	σ^2_{Error}

Sample 3

Detailed components

Component	SD	CV	Expected SD / CV	p-value
Within Run	10.65	1.7%	1.6%	0.2958 [1]
Between Run	10.13	1.6%		
Total	14.70	2.4%	2.8%	0.7297 [1]

H0: $\sigma \le \sigma_0$

The imprecision is less than or equal to the expected imprecision.

H1: $\sigma > \sigma_0$

The imprecision is greater than the expected imprecision.

[1] Do not reject the null hypothesis at the 5% familywise (1.67% individual) significance level.

X^2 test

	SD	Expected SD	X^2 statistic	DF	p-value
Within Run	10.65	9.97	22.86	20	0.2958
Total	14.70	17.44	7.82	11	0.7297

ANOVA

Effect	SS	DF	MS	Expected MS
Run	2506.24	4	626.56	$\sigma^2_{Error} + 5\sigma^2_{Run}$
Error	2270.40	20	113.52	σ^2_{Error}

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CLSI EP15-A3: Example 1Z

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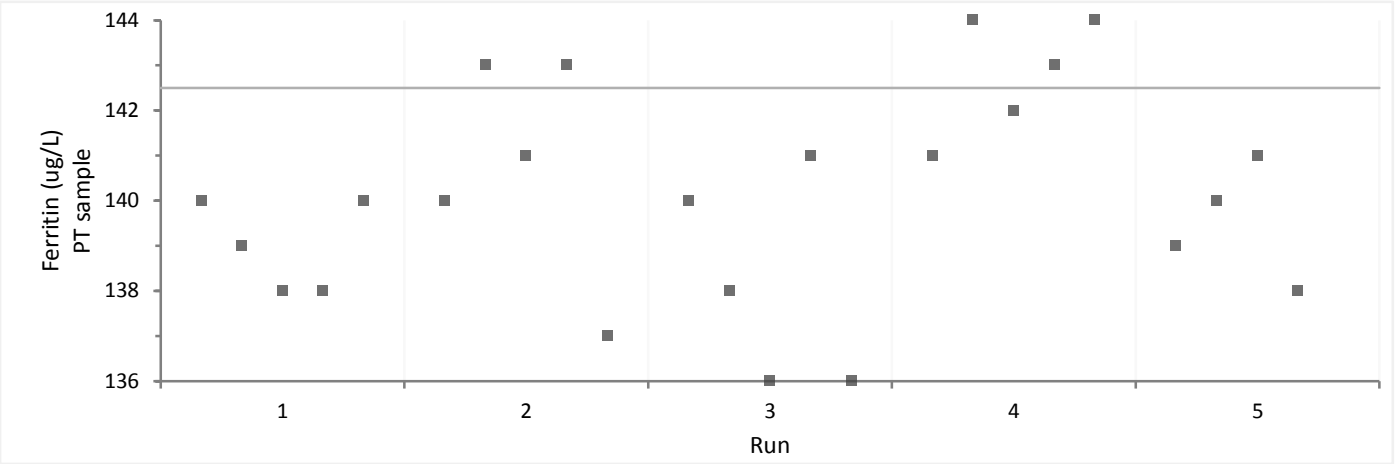
Descriptives



N	24
Design	5 x 5*

* Unequal number of observations for all possible combinations of factor levels.

	Assigned value	Uncertainty SE	DF
PT sample	142.5	0.69	42

	N	Mean	Mean SE	Recovery
PT sample	24	140.1	0.82	98.3%

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CLSI EP15-A3: Example 1Z

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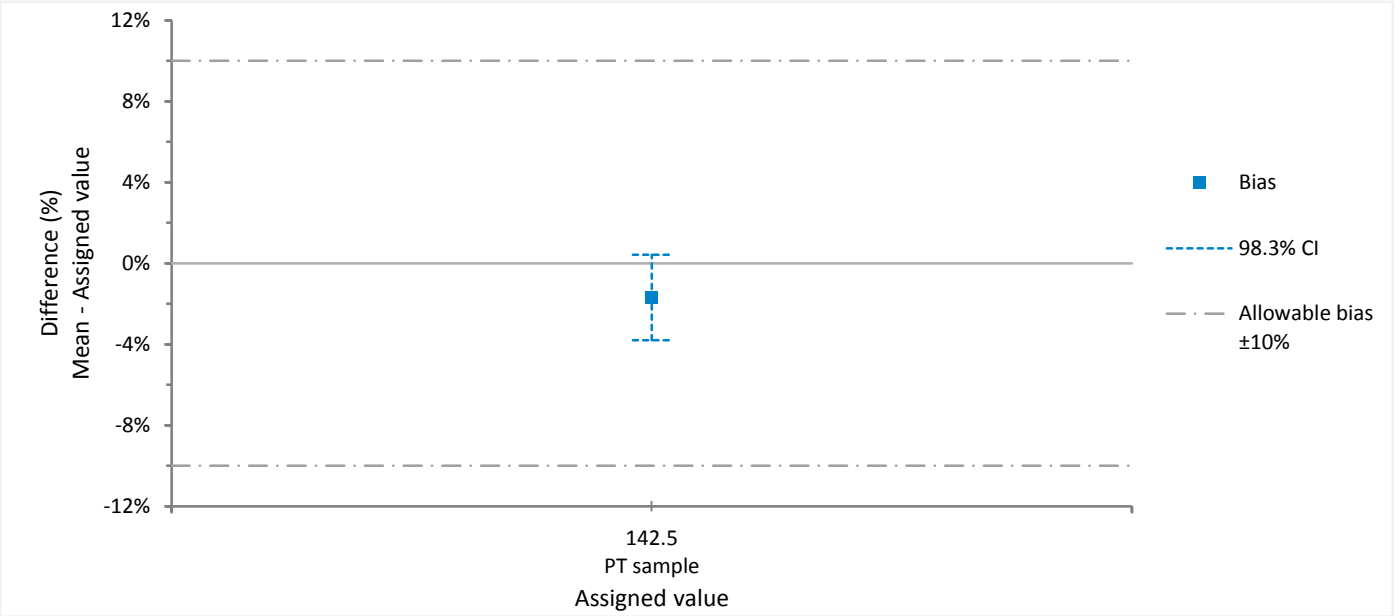

Assigned value	Mean	Bias	98.3% CI	Allowable bias	p-value
142.5	140.1	-1.7%	-3.8% to 0.4%	±10.0%	0.0456 [1]

H0: δ = 0
The bias is equal to 0.
H1: δ ≠ 0
The bias is not equal to 0.
[1] Do not reject the null hypothesis at the 1.67% significance level.

Student's t-test

Assigned value	Difference	SE	t statistic	DF	p-value
142.5	-2.4	1.1	-2.25	11.1	0.0456